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

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February 6, 2014

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RE: Broadway Corridor, Euclid to Country Club
Avoiding Unintended Acquisitions
HDR No. 105002

An issue that has emerged with this project is the effect that loss of parking and access on economic viability of parcel fronting on Broadway. This is particularly true for older strip commercial development with front parking that is directly accessed from Broadway. Many of these parcels rely on the informal use of existing right-of-way and adjacent parcels for access and parking. This problem is compounded by the excessive number of access points to adjacent property, many of which would need to be closed under the project to provide a safe and functional situation for bicycle, pedestrian and vehicular traffic.

It has become clear that simply holding the existing right-of-way line does not guarantee that the adjacent property will not be impacted by the project. Loss of parking and access could render parcels economically unviable even if no actual right-of-way is acquired from them. This in turn could lead to acquisition of parcels thought to be protected during the planning process, resulting in greater acquisition cost, loss of historic resources, relocation of businesses, and so forth.

This report documents a study undertaken by the project team to examine these issues more carefully, and to identify approaches for reducing the likelihood, or "risk", of unintended acquisitions found to be necessary after the planning process has been completed. The results of this study will be used in formulating and evaluating street section/alignment alternatives.

Please contact me with any questions or concerns at 584-3644 or michael.t.johnson@hdrinc.com.

Sincerely,
HDR ENGINEERING, INC.

Michael T. Johnson, PE
Vice President

Attachment

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Determination of Right-of-way Shift Needed to Avoid Impacting Parcel (4-page spreadsheet printout)

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Block-by-Block Diagrams of parcels (18 drawings)

SECTION 1. INTRODUCTION

Overview

An important goal for the Broadway project is to preserve existing structures where possible, particularly those with historic value. Doing so can potentially preserve historic resources, keep existing businesses in place, and reduce project cost. Acquisition of new right-of-way has the potential to impact the affected parcels to different degrees from minimal acquisitions of portions of a property to full acquisition.

Normally minimizing right-of-way impacts is best accomplished when the widening is directed to one side of the roadway or the other, limiting property acquisition to a single side. For this reason, roadway widenings in Tucson and elsewhere have been typically to a single side rather than centering the new alignment.

Generally speaking with arterial improvements, holding the existing right-of-way line on the side opposite of the direction of the widening will avoid parking and other impacts to parcels on that side. For convenience, that side is referred to in this report as the "protected" side and parcels on that side "protected parcels". Similarly, the side to which the widening is being contemplated is termed here the "widened" side.

There are a number of situations along Broadway, particularly in cases of older strip commercial development, where holding the existing right-of-way line on the protected side could in fact impact those parcels intended to be protected due to loss of parking or access. Such impacts could render those parcels unviable for their current (or any) use and therefore likely would be acquired if these impacts are not somehow remedied. Failure to fully understand and account for this could inadvertently result in acquisitions occurring on both sides of the roadway.

Another situation found on Broadway that could result in unintended acquisitions involves parcels developed originally as residences. Some still operate as residences but many have been converted to commercial uses. Generally accepted design standards (and City code) disallow direct residential access from an arterial roadway. Residential structures without alternative means of access, such as via an alley or side street, would not be permitted to remain. This condition too would likely result in acquisitions unless measures can be taken to resolve the access issue. Somewhat conversely, alley access for businesses is not typically permitted, and businesses that can no longer directly access Broadway may be at risk as well.

Purpose of this Study

The primary purposes of this study are (1) to determine locations where holding the existing right-of-way line is not sufficient to avoid impacting parcels due to loss of parking or access or residential/commercial restrictions; (2) discuss plausible measures to maintain the current parking function of impacted structures; and (3) assess the risk of these measures being found later to not in fact protect the parcels as originally envisioned. This information will be used in developing and assessing alternative cross section/alignment configurations.

Structure of This Report

The remainder of this report includes the follow:

<u>Section 2. Standards and Constraints</u>. Section 2 provides an overview of institutional constraints that could affect measures that might be taken to maintain parking for a particular parcel. These include state law, city ordinances and design standards, and legal issues that apply to appraisal and acquisition of property for roadway projects.

<u>Section 3. General Approaches for Resolving Parking Impacts</u>. Section 3 describes two general approaches for avoiding parking impacts, (1) providing a publically accessible lane that maintains current parking function, and (2) replacing lost parking by offsite parking. Several variations in how these can apply to Broadway are discussed, along with the risk of them leading to unintended acquisitions during the implementation of the project.

Section 4. Examples Illustrating Issues and Approaches. Three actual locations along Broadway are used as examples to illustrate the issues regarding loss of parking and the applicability of various measures to avoid parking impacts.

Section 5. Analysis. A block-by-block determination of measures for keeping protected parcels whole is presented. Both sides of the roadway are included in this analysis. Attached to this report are diagrams for each block illustrating the discussion and indicating the relevant measurements. Where appropriate, lines are shown reflecting the shift in right-of-way line needed to produce “low” and “moderate” levels of risk of the protected parcels being impacted.

SECTION 2. STANDARDS AND CONSTRAINTS

This section covers state laws, city ordinances, jurisdictional practices and policies, and legal issues involved in real estate appraisal procedures that need to be considered in developing strategies for minimizing acquisitions.

STATE STATUTES

A property owner has the right to retain any portion of a parcel lying outside the future right-of-way whether the remnant is economically viable or not. Normally an owner does choose total acquisition when the remnant would be too small or have some other problem limiting its viability. Once the City has acquired a parcel however, it is free to utilize it or any remnant not needed for right-of-way in any manner that benefits the community. It can for example bundle a number of remnants together to create a larger more useful parcel to be offered for sale to the public. Typically this would be through a Request for Proposal (RFP) which can include conditions over its development. Such proposals can, but may not necessarily, incorporate existing buildings.

Remnant parcels could also be used to establish remote parking for existing and future businesses. Parcels used to provide private parking for more than one property may include joint access and parking agreements. Since acquisition of property outside the future right-of-way cannot be compelled by the project, the ability to use remnants to remedy impacts to other parcels cannot be assumed in the planning process. Such planning can include parcels currently owned or acquired in the future by the City, however.

ACCESS MANAGEMENT GUIDELINES

The City of Tucson's "Access Management Guidelines" (Ordinance 9823 revised December 2011) establish the location and frequency of access to adjacent parcels for new development. The objective of this ordinance is to "enable access to land uses while maintaining roadway safety and mobility through controlling access location, design, spacing and operation." These guidelines recognize that two principal functions of an arterial roadway -- movement of traffic and providing access to adjacent property -- inherently conflict.

Relevant design requirements for driveway frequency and location are as follows (Page 29 of the guidelines. The numbering here corresponds to that of the guidelines):

1) Entrance and exit drives crossing arterials and collectors are limited to two per 300' of frontage along a major roadway. This effectively limits the number of access points to roughly two per standard city block. The nearest pavement edges should be spaced at least 80' apart.

2) A minimum of 150' measured at the curb line shall separate the nearest pavement edge of any ingress or egress driveway and the curb line to any signalized or major intersection with arterial and collector roadways.

5) There should be no direct residential lot access for arterials.

6) All new development should promote cross-access agreements to limit the number of driveways crossing arterial and collector roadways.

7) To limit access on major roadways, a local access lane can be incorporated into the design when multiple existing parcels have direct access to a collector or arterial roadway.

On page 35 of the guidelines, the maximum width of a driveway serving two parcels is 35’.

The principles established by the guidelines are particularly important for this project. Much of the accident potential associated with Broadway is created by vehicles slowing down and changing lanes to exit the roadway. According to the guidelines, a vehicle traveling at a 30 mph differential from other traffic on an arterial street is 45 times more likely to be involved in a crash than a vehicle traveling at the same speed (Page 23). A vehicle traveling at a 35 mph differential is 180 times more likely to crash. "According to the FHWA,

before and after analyses show that those routes with well managed access can experience 50% fewer crashes than comparable facilities with no access controls." (Page 5)

Of particular concern is the potential for accidents involving bicycles and pedestrians. The number of access points to private property is extraordinarily high in this corridor with some 200 located within the two-mile project length. Improving the bicycling and pedestrian environment as well as meeting current safety and accessibility standards will involve closing or combining many of these existing access points. Closing off existing access can impact parcels, even if their current parking would otherwise not be affected, leading to acquisition.

Offsite Parking Requirements

The potential to replace lost parking with offsite parking is a promising means for maintaining viability of parcels that would otherwise lose parking. The Uniform Development Code adopted by the City allows offsite parking. Section 7.4.6.B.1 lists the requirements that need to be met. Those most applicable to this project are the following:

1) The offsite parking is located within 600' of the property that it serves. This distance is based on the path a pedestrian must travel.
2) The offsite location provides parking in excess of what would be required on site. The number of spaces required for a particular parcel depends on its use and on alternate hours of use with other properties sharing the parking.
3) Non-residential uses may not use a residentially-zoned parcel for offsite parking.
4) A formal written agreement between the owners of the properties involved must be in place.
5) The offsite parking lot must meet applicable design standards and codes.

Property owners can jointly develop an agreement regarding the lease or purchase, construction, and maintenance of the offsite private parking location. Legally assigned rights to offsite parking might offset the loss of onsite parking for appraisal purposes. Agreement among the participating owners is needed to establish rights to the parking and the financial commitments needed for its operation and maintenance. Individual parking plans would need to be prepared and processed through City Planning and Development Services.

Parking Improvement District

The use of a parking improvement district may be a tool to also accomplish this. Arizona Revised Statute 48-614 provides for the formation of an improvement district for the purpose of leasing, constructing, and operating offsite parking facilities. The cost is paid for through property taxes on participating parcels, prorated on the basis of assessed value. The owners of at least half the assessed value within a proposed district have to approve its formation.

Acquisition and Appraisal Issues

The appraised value of a property is based on its "highest and best use" which is determined in part by the availability of suitable parking for that use. The loss of parking can diminish the value of a property even though the structure itself is not directly impacted. The extent to which value is diminished determines the damages for which the owner must be compensated. Loss of parking can render a property unusable, resulting in its total acquisition. It can also limit the ability for future improvement of the property.

Replacement parking offsite can remedy the appraisal issue if the rights to it are legally established. Having public parking nearby, while perhaps workable physical parking, would not remedy the appraisal issue.

Noncompliant Parking

Existing parcels in many cases do not meet current parking standards and are considered noncompliant. This parking may be "legal noncompliant" if it conformed to code requirements in place at the time of its construction, is the results of past roadway widenings, or if an Individual Parking Plan has been approved. It is assumed for this study that maintaining the current of level of parking for a parcel is sufficient to avoid the need to acquire a parcel or to pay damages. Bringing a parcel into conformance with current standards is not a part of this project.

Also an issue are parking spaces located in public right-of-way or using public right-of-way to access them, and spaces that require access across other parcels for which no cross-access agreement exists. It is assumed for this study that parking that does not legally exist or does not have functional legal access does not have to be preserved to avoid acquisition or damages.

Flexibility in Standards

Some of the standards and requirements noted here are inflexible. State law and appraisal standards are examples of that. Others, particularly those established by the City may have some flexibility. The number and frequency of access points along the roadway are an example of this. It should be noted however, that City standards are rooted in widely accepted design practice. Deviation from established standards, particularly those involving safety, should be considered with great care and only if a substantial benefit would be realized. Allowing three access points within a 300' reach of roadway, for example, may be considered if it would avoid the need to acquire a significant parcel, and if the resulting hazard to bicycle, pedestrian and vehicular traffic was not inordinately increased.

SECTION 3. GENERAL APPROACHES FOR RESOLVING PARKING IMPACTS

Approaches for mitigating parking impacts are outlined here. Examples in the following section of this report will help make these issues and approaches more clear. First presented here is a discussion of the term "risk" and how it is applied here relating to "unintended acquisitions" -- that is acquisitions not envisioned in planning the corridor but found to be necessary as the acquisition process unfolds well after the planning process has been completed.

Risk of Unintended Acquisitions

A problem of unintended acquisitions has been encountered frequently on past projects including the ongoing Grant Road Corridor development. Most often this is due to property owners being unreceptive to cross-access agreements with adjacent owners, or to offsite parking. The approaches discussed here for mitigating loss of parking offer various levels of promise for avoiding full acquisitions. They also carry some degree of risk of parcels thought to be avoided ultimately being acquired due to factors outside the control of the planning process. The level of risk associated with the various approaches are subjectively assessed as either "low", "moderate" or "high" for leading to unintended acquisitions.

General Approaches to Resolving Parking Impacts

Two general approaches to resolving parking impacts noted earlier are (1) to maintain access to existing parking by providing an access lane that is publically available, and (2) replacing lost parking at an offsite location within the constraints of the Uniform Development Code noted in Section 2. Several possible variations of both approaches are outlined here.

Access Lane

This approach involves providing a drivable, legally accessible area that maintains current parking and access function. This can be implemented in several ways:

1. The access lane is located entirely within existing right-of-way. This has the advantage of not requiring acquisition from adjacent parcels or cross-access agreements by property owners, resulting in a relatively low risk of unintended acquisitions. It might however require shifting the roadway away from the protected side, increasing the right-of-way to be acquired on the widened side. This can increase the overall number of parcels impacted. It can also reduce the depth of the remnant parcels on the opposite side and therefore their value for redevelopment. It also leaves the City with the responsibility of owning and maintaining the access lane, a position the City may not wish to assume. This approach is considered "low risk", however, since it does not rely on the participation of the adjacent property owners.

2. The access lane is located partially on the parcels being protected. In cases where the depth currently being used for access and parking exceeds that needed for parking, the excess can be used in conjunction with existing right-of-way for the access lane. This would reduce the amount the roadway that would have to be shifted, potentially reducing impacts to the other side. It does, however, require acquisition from the protected parcels which experience has shown can lead to full acquisition. Under this approach, however, current function would not be diminished, though ability to change use or redevelop the parcel in the future may be limited. Even though actual and legal access to parking would not be diminished, there is still some risk of partial acquisitions becoming total acquisitions, particularly if the owner is not motivated to remain. That level of risk of unintended acquisition occurring in this scenario is considered "moderate" here.

3. The access lane is located entirely within the existing parcels. Where the depth currently available for access and parking is sufficient, common access can be provided by means of a cross-access agreement among the property owners. This agreement may extend to joint parking as well. This in essence privatizes the parking/access solution and thus requires no acquisition from the protected parcels or shifting the roadway. Newly-developed parcels may already operate under such agreement. It does however need agreement by the affected owners who may have disparate goals and intentions for their properties. Without clear and binding agreements, the risk of unintended acquisitions is considered "high".

Replacement Parking

Replacing front parking with new offsite parking can allow the roadway to in fact shift *toward* the protected parcels, thereby lessening the impact to the widened side. That can be very beneficial both from the perspective of preserving existing buildings, and by creating deeper more developable remnant parcels on the widened side.

Although potentially of great benefit, replacement parking poses several drawbacks. First is the inability to condemn property for the purpose of providing private parking. Property currently owned by the City or acquired voluntarily through early acquisition could be used for this purpose. City policy currently prohibits further early acquisition on Broadway however.

A second drawback is the need for property owners to agree to a parking improvement district or a private joint parking solution. They would also need to commit to the initial and ongoing financial investment this approach would require. Since it is likely that some owners would be unwilling to participate, a replacement parking solution is considered high risk. The considerable benefits which could result however make it worthy of consideration in situations where the prospect of a substantial payoff exists.

Other Factors Affecting the Function of a Parcel

This study focuses on maintaining the current parking function of parcels fronting Broadway -- that is the number of existing parking spaces and ability to access them. The premise here is that if the existing parking situation is not diminished for a particular parcel, then acquisition of the parcel can be avoided. Other issues involving the function of a parcel, such as space for loading zones and trash enclosures, are considered in a similar manner--that is if there their function is not reduced, then no damages are incurred. Such features generally do not exist for the older commercial parcels likely to be impacted by this project however.

Other Means of Avoiding Full Acquisitions

Not addressed in this report is the prospect of avoiding the need for acquisition by changes in code requirements. The possibility of reducing or eliminating the requirement for parking, for example, has been raised. Whether the regulatory actions needed for this would be pursued is unknown at this point. Also unknown is whether the practical effects of removing parking spaces would leave a parcel economically unviable even if allowed by code. These are complicated issues and their ultimate resolution uncertain, and no expectation of them happening is made here.

SECTION 4. EXAMPLES ILLUSTRATING ISSUES AND APPROACHES

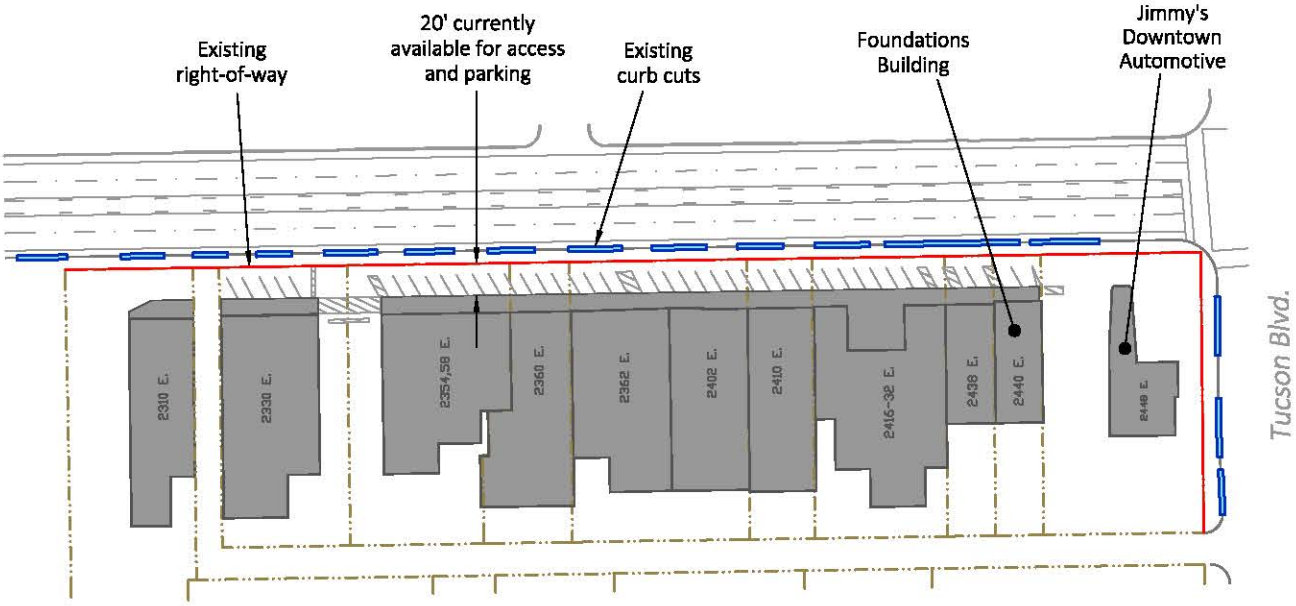
Three examples are presented here to illustrate the parking issues affecting this project and plausible measures for resolving them. Two involve older strip commercial development with front parking that is reliant on direct access from Broadway through curb cuts. The two present somewhat different issues and opportunities. The third involves residential structures, many of which have been converted to commercial use.

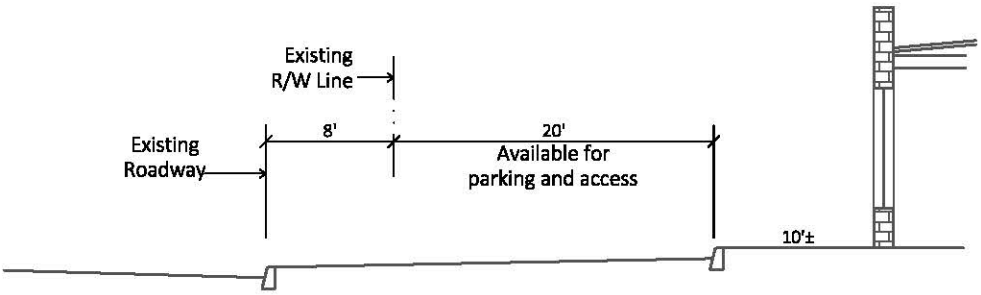
EXAMPLE 1. STRIP COMMERCIAL DEVELOPMENT WITH FRONT PARKING

Many of the commercial blocks along Broadway have large numbers of narrow lots, some as narrow as 20' in width. As a result, the number of lots that could occur within a 300' length of roadway can be quite large. Reducing the number of access points to two per block would effectively eliminate access to many of these parcels, leading to their acquisition unless some means of physical and legal access can otherwise be provided.

Figure 1 uses for this example the commercial strip on the south side of Broadway west of Tucson Boulevard. Ten separate parcels are involved, each with access provided directly from Broadway via twelve curb cuts. One of the curb cuts is wide enough to serve three parcels. Limiting access points to two per 300’ of frontage would render many of the parcels inaccessible.

Establishing a cross-access agreement in this case, even if agreement among the property owners could be reached, would not work here. There is simply not enough room for access and parking in the physical space available as the photo shows. Currently vehicles are able to back out of the existing 60° angled parking spaces, turning into the limited space behind the curb as they do so, and then drive directly into Broadway through an existing curb cut. The high number of existing curb cuts allows this condition to work in practice. Closing most of these per the Access Management Policies would leave many of the parcels inaccessible. It is necessary to resolve this issue in some manner to avoid acquiring these properties and likely demolishing at least some of the affected structures.





Existing Parking/Access Conditions

Current Access/Parking Conditions

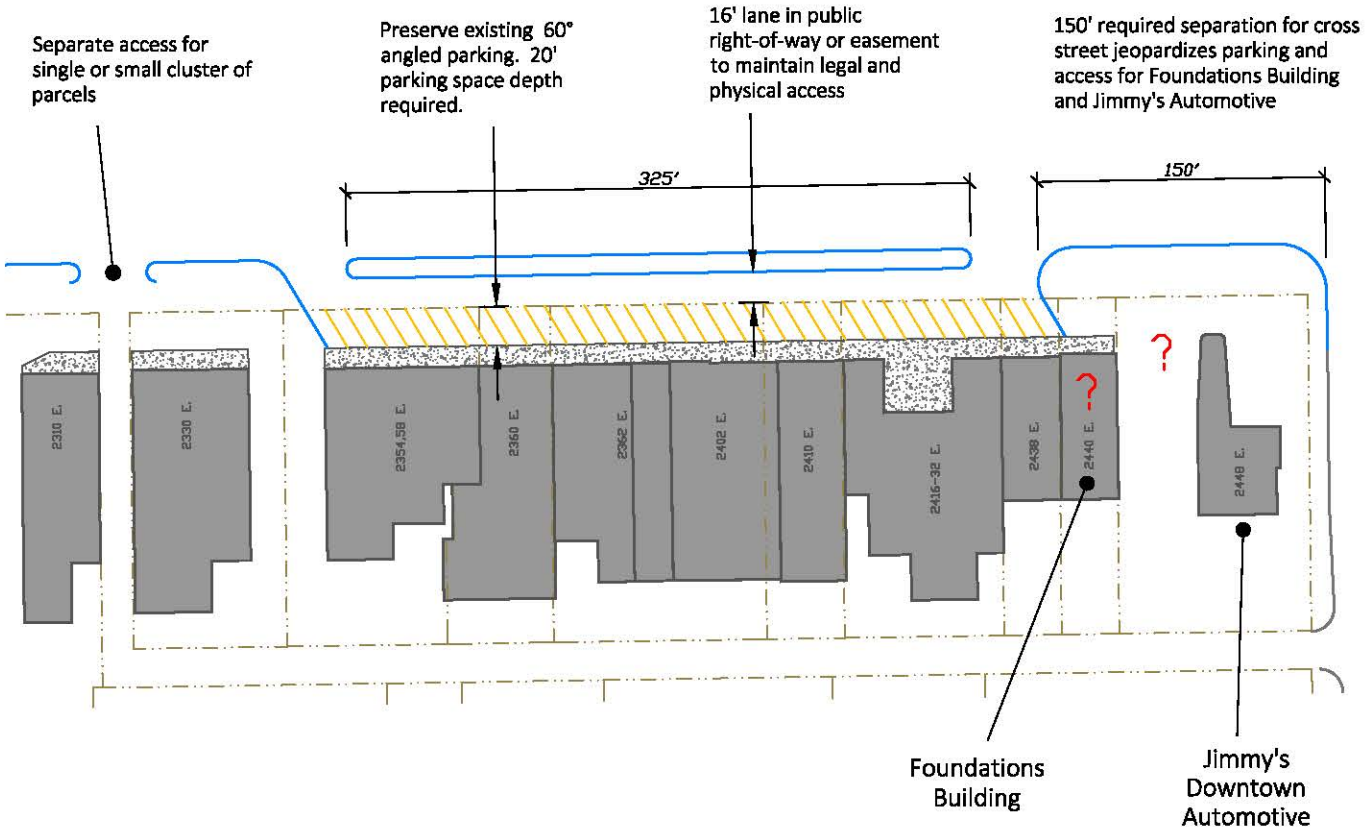
Figure 1.
Example 1. Commercial Area Parking and Access Conditions

One approach to doing this is by providing a separate access lane with limited connection points to Broadway. Figure 2 shows how this might be done. Maintaining the 60° angled parking that currently exists requires 20' of depth for parking as well as 16' for a one-way access lane -- a total width of 36'. Since there is only 20' currently available, an additional 16' of width is needed, requiring the roadway to be shifted northward that amount. The access lane would need to be available for public use, either included within the Broadway right-of-way or as a public easement. That would not be an issue in this case as it would fall within the existing right-of-way.

The access lane shown in Figure 2 has two connection points to Broadway. An additional separate access is provided for the two western-most properties shown here (2310 and 2330 East Broadway). The requirement of no more than two accesses within a 300' reach is met as is the minimum 150' distance from the crossing collector and the minimum 80' separation. It does however not support the existing parking for the Foundations building (2440 E Broadway) and may preclude access to Jimmy's Broadway Automotive (2448 E) from Broadway. Such impacts could lead to their acquisition.

Two plausible variations to this approach are presented in Figure 3. The first is to extend the access lane westward to serve the businesses at 2310 and 2330 as an alternative to the separate entrance. This also allows spacing of access points more frequently, improving access to the businesses they serve.

The second variation is moving the easterly access point 50' eastward toward Tucson Boulevard to maintain front parking for Foundations and access for Jimmy's Automotive. This would require waiving the 150' access spacing requirement but could eliminate need to acquire these parcels. The functional and safety implications of this would need to be reviewed, and commitment by appropriate City agencies would be needed for any deviation from current standards and practices. The uncertainty that such a waiver would be forthcoming introduces some risk of needing to acquire these two parcels. None-the-less, the level of risk under this approach is considered low here since acquisition from the affected parcels is largely avoided.



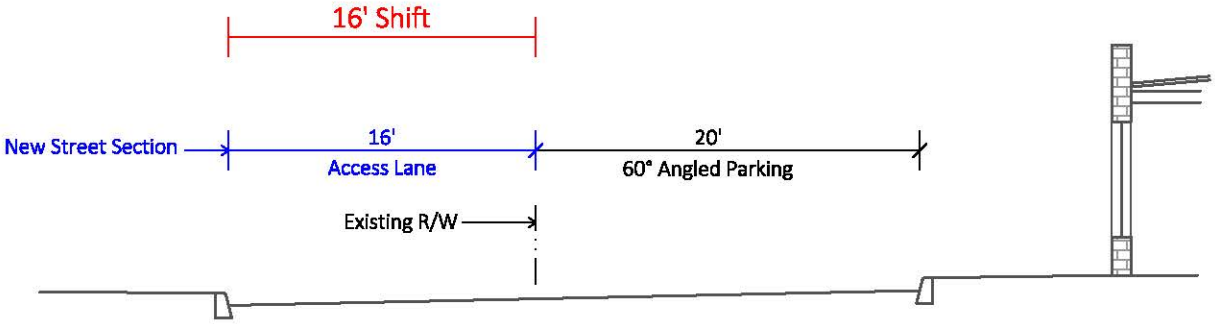
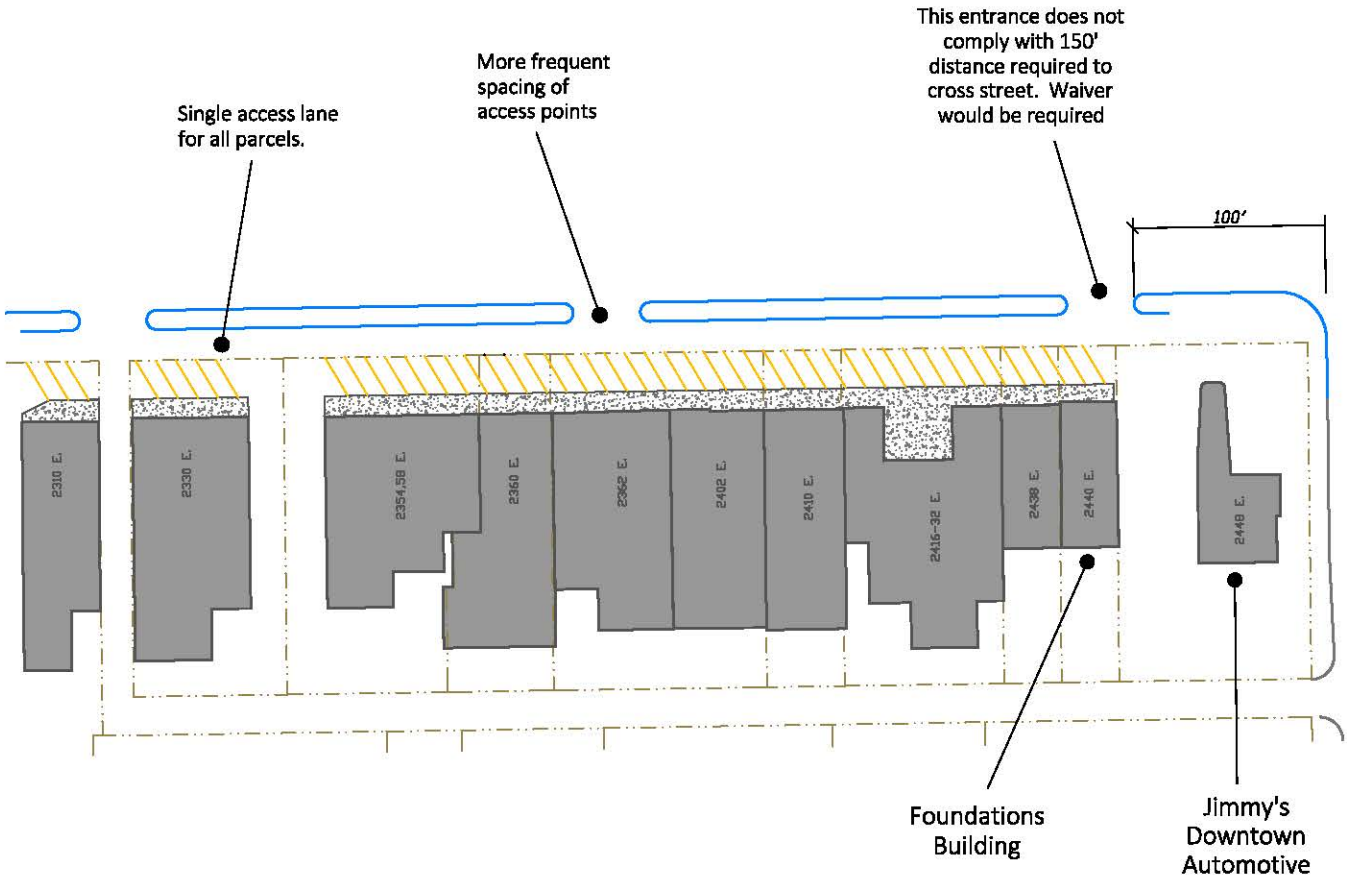


Diagram here is for illustration purposes only. No decisions as to actual approach have been made.

Figure 2
Access Lane Fully in Right-of-Way



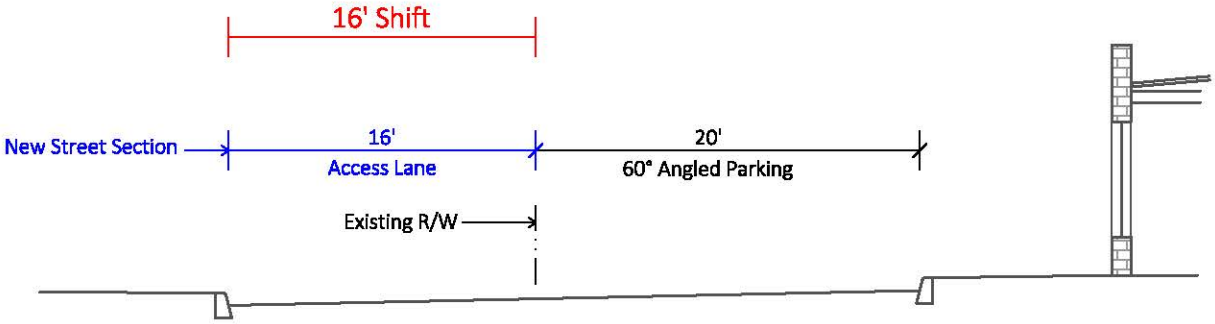


Diagram here is for illustration purposes only. No decisions as to actual approach have been made.

Figure 3
Alternative Access Lane Approach

Figures 4 and 5 show two approaches for replacing the existing front parking nearby with offsite parking. The first is to acquire and demolish as few of the structures as possible to provide replacement parking for those that remain. Configurations needed for single and double rows of 60° and 90° parking are shown in Figure 4. Also shown are the approximate widths of the individual parcels.

Assuming a depth of 145', the distance from the front of the buildings to the back property line, single and double rows of 60° parking would provide approximately 12 and 24 spaces respectively. The widths needed are 36' and 56' plus any additional width that might be needed for landscaping, setback, etc. With 90° parking, 16 and 32 spaces could be provided with single and double rows but would require widths of 46' and 60' respectively. Replacing the approximately 47 spaces that currently exist would require two of the double row 60° parking arrays, or one each of the single and double 90° parking arrays. The total width needed if 60° parking were used would be 112'. The total for 90° parking would be 106'. At least two of the existing parcels would be need to be demolished in this case.

This raises several important issues:

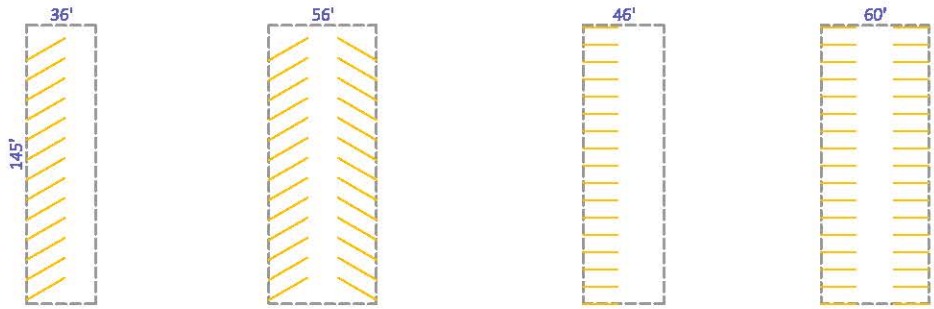
1. The City can condemn private parcels only for a public use. If that use is to be parking, it must be public parking and cannot be assigned to specific parcels to cure appraisal issues involving loss of parking.
2. Parcels voluntarily sold to the City could be used to offset the loss of parking. To provide the certainty needed for planning the corridor improvements, that would need to occur as early acquisitions. Early acquisitions for Broadway are currently precluded by Mayor and Council action, though that action could be reversed if a clear benefit to doing becomes apparent.
3. The overall economics of this approach need to be considered. That the benefit realized by the southward shift justifies the cost of acquiring and demolishing the necessary buildings and constructing the parking would need to be determined. Also to be determined is if the offsite parking truly offsets the loss of front parking as far as the value of the parcels and the perceptions of business owners and customers are concerned.
4. Would the new configuration, together with an overall uptick in commercial activity in the corridor, lead to the parcels being redeveloped? This could lead to market-driven demolition of the structures the measures here seek to preserve.
5. Replacing only that parking that currently exists and not bringing the amount of parking up to current standards may not be acceptable under City regulations.

A second approach to offsite parking is to place it behind the existing buildings. Figure 5 uses separate colors to indicate common ownership of the commercial buildings and the lots behind them. These lots are all zoned C-1 and can be used for parking.

It can be seen from the photo that these lots are in fact being used for parking, probably for employees rather than customers. Whether or not the use of these can be expanded to customer parking would need to be determined. Willingness of the business owners to give up front for rear parking also needs to be assessed. The ownership patterns shown in Figure 5 suggest the possibility of future redevelopment as well.

As with side parking, the effect of rear parking on property value, and how well customers would respond to it, would need to be considered.

Diagram here is for illustration purposes only. No decisions as to actual approach have been made.

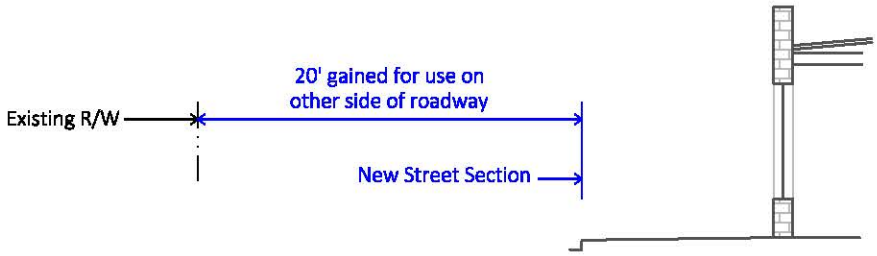


Single row 60° parking
36' of width required
~ 12 spaces

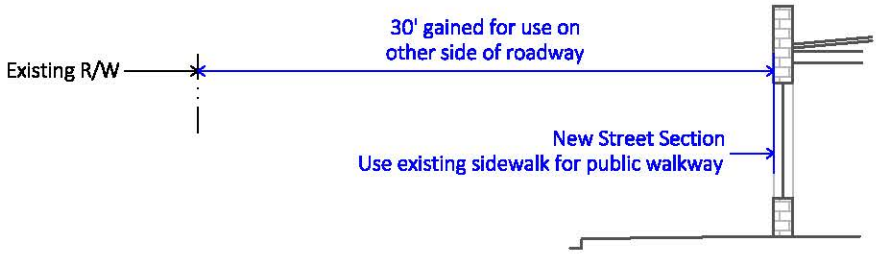
Double row 60° parking
56' of width required
~ 24 spaces

Single row 90° parking
46' of width required
~ 16 spaces

Double row 90° parking
60' of width required
~ 32 spaces



Replace Existing Front Parking with Offsite Parking
Existing sidewalk remains private



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

Figure 4
Offsite Parking Approach

Colors indicate common ownership

Figure 5.
Rear Replacement Parking/Redevelopment Potential

EXAMPLE 2. STRIP COMMERCIAL DEVELOPMENT WITH FRONT PARKING BUT WITH GREATER DEPTH AVAILABLE

This example involves existing strip development on the north side of Broadway east of Plumer. Figure 6 shows this area. Though similar to Example 1 it illustrates three important differences.

The first is that these parcels have more space available for parking and access. The 30' that typically exists between the right-of-way line and sidewalks of the buildings is ten feet more than was available in Example 1. Perpendicular parking requires 18' of depth for the spaces and 24' of width for access and maneuvering, making the total width needed to maintain the current parking/access function 42'. Since only 18' is required for depth of parking space, 12' is left available for access. To achieve the needed 42', the roadway needs to be shifted only 12'if the 12' available on private property can somehow be integrated into the public access lane. Otherwise a 24' shift is needed.

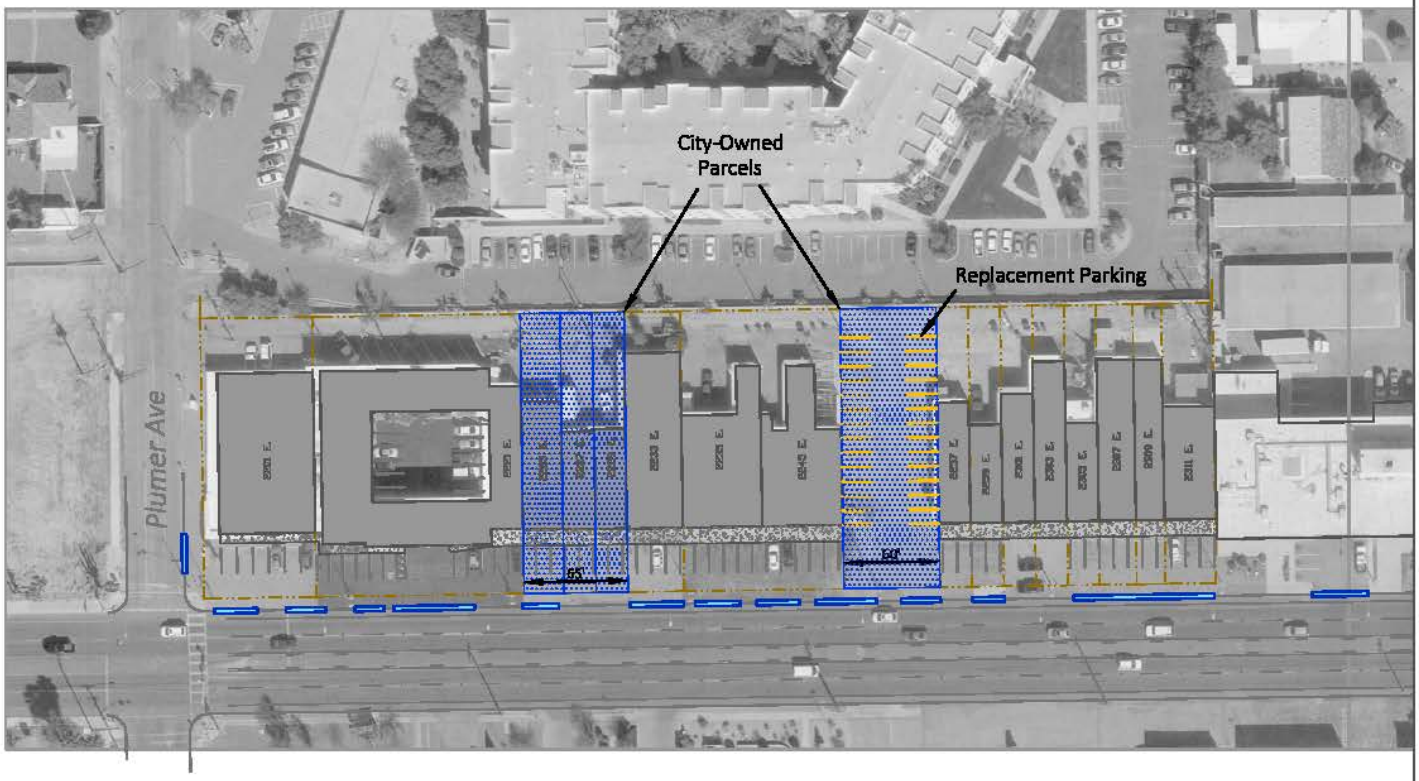
Two possible approaches for incorporating the front 12' of the parcels into the access lane are as follows:

1. The additional 12' can be acquired as new right-of-way from the parcels and be added to 12' of existing right-of-way to create the access lane. City could condemn the strip if necessary, and the overall function of the parcels would not be impaired. Because experience has shown that total acquisitions can arise even in these conditions, the risk associated with this is considered moderate.
2. The parcel owners agree to purchase 12' of existing right-of-way and combine that with the front 12' of their existing parcels to create a private access lane for common use. Because cooperation and financial commitment of all the affected owners would be needed, the risk associated with relying on this approach for planning the corridor improvements is considered here to be high.

It is noted here that the full 24' access lane may not need to be public. A width of 16' would be sufficient for access which would need to be public, but the remaining 8' used for maneuvering could be on private property. In that case, only a 4' shift would be needed. That approach has in fact been adopted for establishing the right-of-way offsets in Section 5.

The second difference is that the City already owns several parcels that could be used for offsite shared parking, either public or private. Together they are wide enough to provide a sufficient number of parking spaces to replace the front parking spaces that currently exist. For public parking, the City would maintain ownership of the property and no individual business could benefit from reserved parking spaces. The lot would be for general public parking. For private parking, the City could negotiate sale of the whole or a portion of lots with one or more property owners. These sales would be secondary negotiations and sales to each individual property owners' initial acquisition negotiation. For multiple property owners interested in purchasing a lot to share, a signed legal recorded agreement must exist clarifying the intent to purchase from the City and operate the lot. Without such agreements in place, the risk associated with private parking is considered here to be high. Because the loss of actual parking associated with individual parcels would likely diminish their appraised value, the risk associated with a public parking scheme is also considered high.

The final difference is the immediate proximity of a local side street (Plumer Avenue). This raises another option for offsite parking – that of closing the street to access and using it for replacement parking. Two examples of such closures are Sawtelle Avenue between Speedway Boulevard and 1st Street, and Forgeus Avenue between Speedway and Helen Street. Photos depicting those locations are provided as Figure 7. Plumer is a busy street and would likely not be a good candidate for closure, but the prospect of using abandoned portions of existing streets for replacement parking may be applicable at other locations.



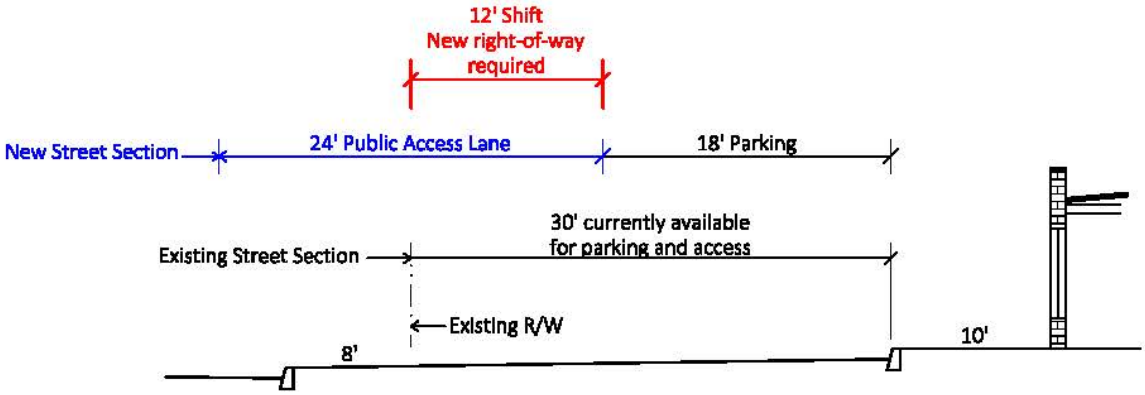
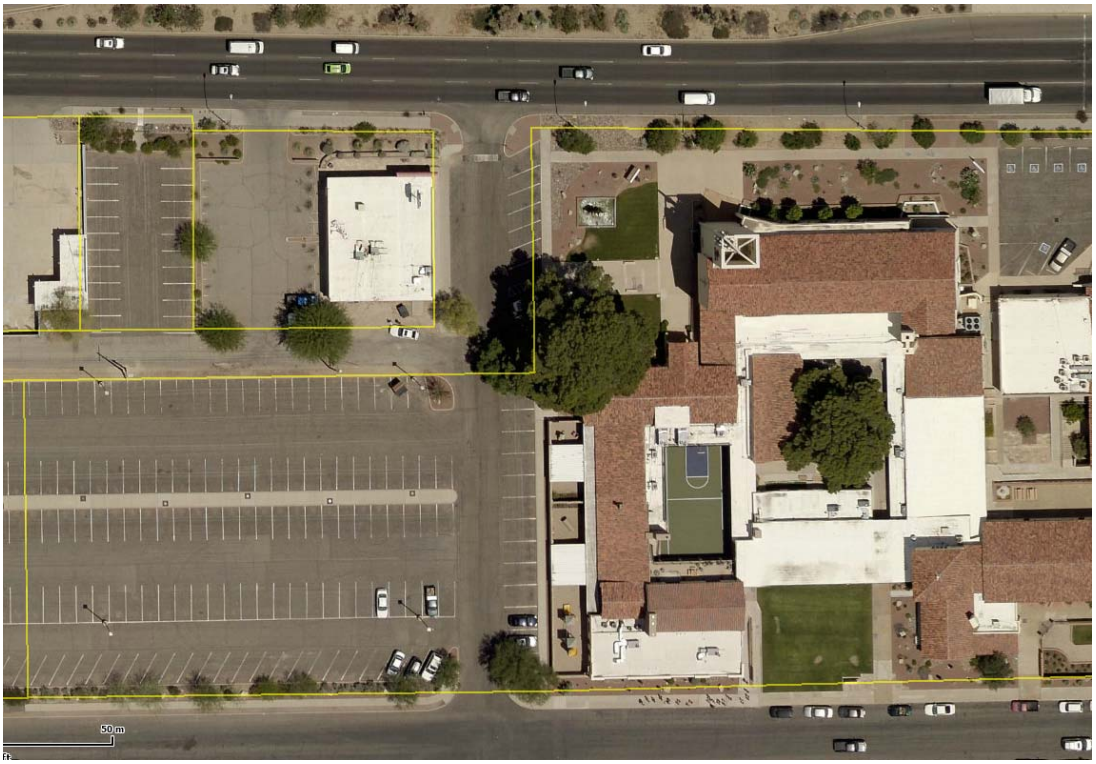


Figure 6.
Partial Acquisition of Protected Parcels

Figure 7. Examples of Street Abandonments Converted to Private Parking



Former Sawtelle Avenue abandoned and converted to parking for Catalina Methodist Church

Former Forgeus Avenue abandoned and converted to parking for businesses

EXAMPLE 3. RESIDENTIAL STRUCTURES

The third example does not involve parking directly but rather providing flexible access to existing residential structures, many of which are designated historic contributors. There are a number of such structures, particularly west of Campbell. Many of these have been converted to commercial use though a few continue to function as rental or owner-occupied residences.

Figure 8 shows the existing residential structures along the north side of Broadway between Cherry and Warren Avenues. Five (1601 to 1629 E Broadway) are zoned residential and are presumably being used as such. The two at the west end of the block, 1641 and 1647 East Broadway are zoned for commercial use.

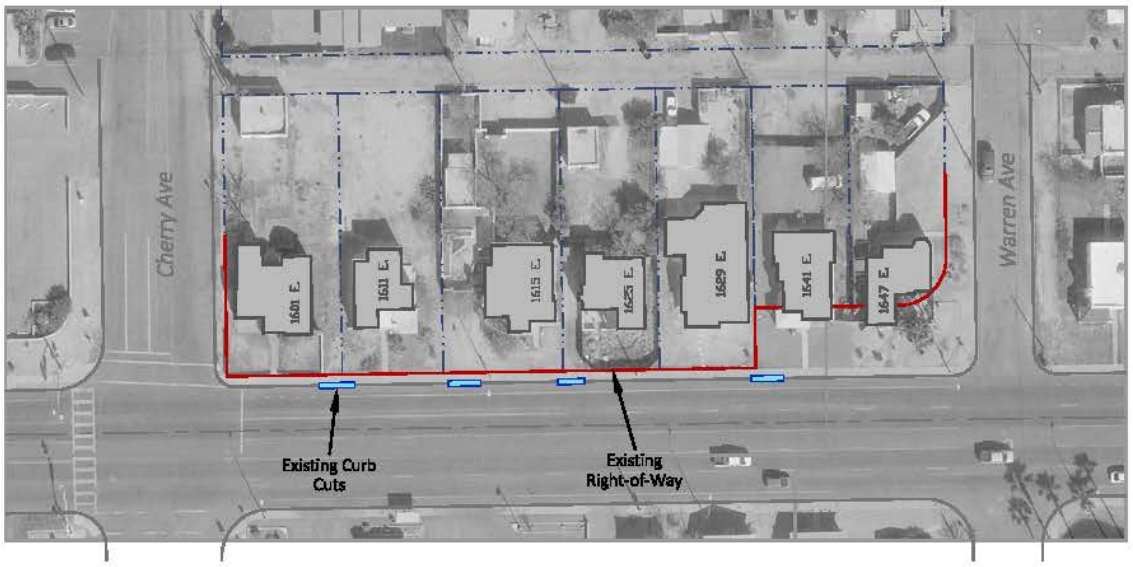
All of these parcels currently have appropriate access. The residential lots have alley access which they use. The commercial property at 1641 E has front access without alley access, the only direct access to Broadway in this block. The corner parcel 1647 E is accessed from Warren Avenue.

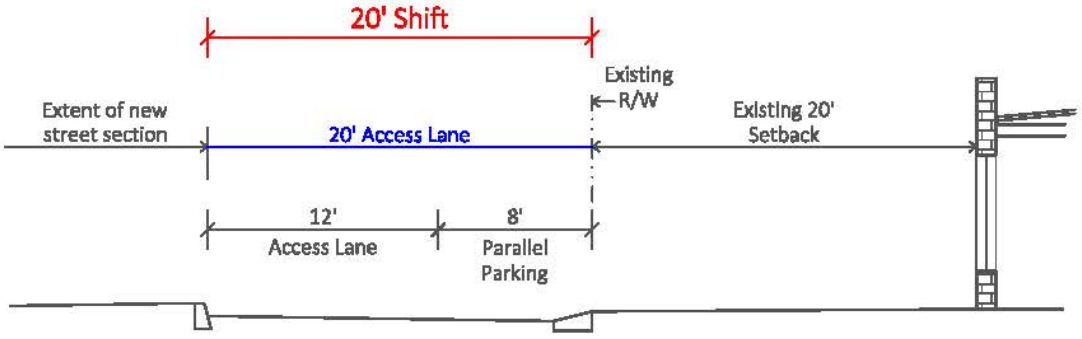
The future of these structures would be more certain if access from the front were possible. That would allow them to be converted to commercial use and lessen the possibility of being demolished by market-driven redevelopment. As with the first two examples, a logical approach would be to provide an access lane, either totally or partially in existing right-of-way. And as before, shifting the roadway away from these parcels would be necessary. The impacts of doing so to the opposite side would need to be assessed. If those parcels are to be acquired in total, shifting the roadway to improve the prospects of these parcels surviving into the future may be warranted.

Figure 8 shows two options for providing front access to these parcels. Both include parallel parking since it is unlikely that parking could be provided within the parcels themselves. The first is a 12’ access lane with an 8’ strip located entirely within the existing right-of-way and requires shifting the roadway 20’ southward. Should the access lane be required to be a fire lane, the width would increase to 20’, increasing the shift to 28’ if parallel parking is provided. As with the previous examples, placing the access lane entirely within existing right-of-way is the lowest risk option.

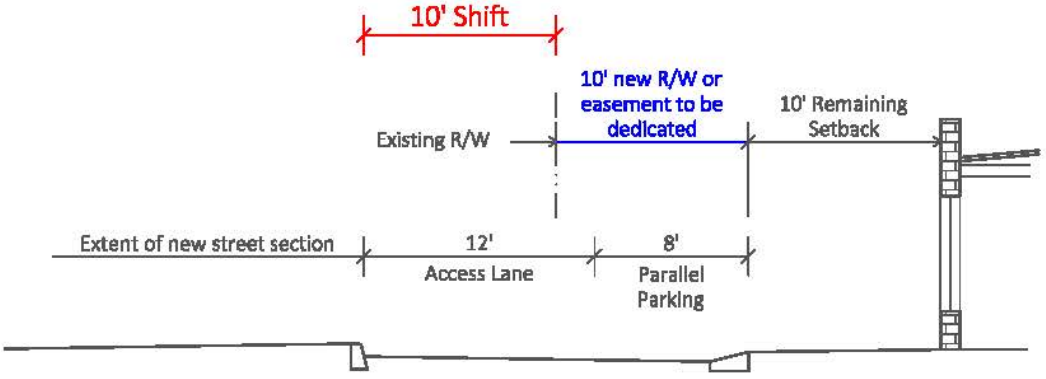
A second option indicated in Figure 8 would lessen the shift of the roadway to 10’ southward, using for the access lane 10’ of new right-of-way acquired from the parcels. This ups the level of risk to moderate due to the chance of a partial acquisition morphing into full acquisition.

Another option in this particular case is to allow alley access for commercial property. This would require a change in current policies.





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.



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.

Figure 8.
Example Residential Area Parking and Access Conditions

SUMMARY OF RESULTS

The following tables summarize the information developed in this section regarding approaches available to mitigate protected side parking impacts and the relative levels of risk of unintended acquisition ultimately occurring. Table1 concerns parking and access to commercial strip development, and Table 2 development that was originally residential.

Table1. Plausible Approaches for Avoiding Unintended Acquisitions – Commercial Areas

Approach	Advantages	Drawbacks	Level of Risk
1. Provide access to existing parking entirely from existing public right-of-way.	o Maintains current level of access and parking function. o Impacts the fewest number of parcels on protected side. o Impacted parcels can be identified with relative certainty during the planning process.	o Requires largest shift in the direction of the widening, resulting in the greatest level of potential impact to parcels on the opposite (widened) side.	Low. With few exceptions such as those demonstrated in Example 1, no acquisition would be required from the protected side. Those that are required could be reasonably anticipated and accounted for during the planning process.
2. Provide public access to existing parking using a combination of existing right-of-way and new right-of-way to be acquired from the parcels.	o Still maintains current level of access and parking function while reducing the amount the roadway needs to be shifted.	o This would apply only where parcels have a sufficiently deep parking/ access area that a portion can be dedicated to a public access lane. o Requires acquisition from both the protected and widened sides of the roadway.	Moderate. The existing parking/access function would not be impaired, suggesting that no impacts to existing function of the parcel would occur. None-the-less, experience has shown that what starts out as a partial acquisition often leads to a total take.
3. Provide offsite public parking to offset the loss of front parking.	o Eliminating existing front parking can allow the roadway to be shifted toward the protected side. This can reduce the number of structures acquired on the widened side or at the very least increase the depth of remnant parcels, providing more flexibility for redevelopment.	o Public parking cannot be used to offset the loss of front parking from an appraisal perspective. Resulting damages could lead to total acquisitions. o City would own and operate the new parking lot(s).	High due to the uncertainty of finding later, when negotiating the purchase of the front parking, that parcels intended to be preserved in fact result in full acquisitions.
4. Use City-owned parcels to provide offsite *private* parking to offset the loss of front parking.	o Eliminating front parking would provide the same ability to shift the roadway toward the protected parcels, accruing the same advantages as Approach 3. o Spaces made available in this case can be assigned to specific parcels as part of the transaction for the acquisition.	o City cannot condemn parcels for use as private parking. This approach would rely on parcels either currently owned by the City or voluntarily sold to the City early enough in the planning process to incorporate the approach into the corridor plan. o A sufficient number of the remaining parcel owners would have to agree to the approach and make the necessary financial commitment.	High due to several areas of uncertainty: o Achieving the necessary agreements and financial commitments from the remaining property owners. o The economic value of offsite parking is equivalent to front parking from an appraisal perspective. o Property owners accepting offsite parking in lieu of front parking .
5. Property owners develop a solution to loss of parking through a parking improvement district or some other private arrangement.	o As above, removing the front parking allows the roadway to shift towards the buildings, potentially benefiting the opposite side.	Again, City cannot condemn parcels to replace private parking. Owners would need to assemble the necessary parcels as well as develop the parking facilities.	High. Owners may not accept replacement parking as holding the same value as front parking. Owners may not wish to take on the effort and cost of developing rear parking, preferring to relocate instead.

Table2. Plausible Approaches for Avoiding Unintended Acquisitions – Originally Residential Areas

Approach	Advantages	Drawbacks	Level of Risk
1. Provide an access/parallel lane to serve existing parcels.	o Makes it possible to convert existing residences to commercial use, lessening the likelihood of market-driven redevelopment jeopardizing the existing structures. o Enhances the usefulness of residences previously converted, lessening the jeopardy to them as well.	o Shifting the roadway away from the protected parcels would be necessary.	Low. Acquisition from the existing parcels would not be needed.
2. Use portion of existing parcels to create the access lane.	o Requires less of a shift toward the other side of the roadway.	o Would require some acquisition from the protected parcels to reduce the amount of shift.	Moderate. Acquisitions intended as partial can ultimately become total takes during the acquisition process.
3. Reduce the number of spaces required to match the number left after partial acquisition.	o Could avoid acquiring parcels that lose parking but are otherwise not impacted.	o Would require a significant degrade of existing standards. o Parcel may become unusable from a commercial perspective even if the issue of conformance to current policies is not in play. o Would force customers and employees to seek other locations to park such as nearby residential streets. o The commercial viability of the parcel could be marginalized to the extent that it could not be rented or sold for a reasonable rate of return.	High. It is unlikely that this approach would be acceptable to property owners, City agencies, and adjacent neighborhood.

Policy Changes that Might Avoid Acquisitions

The question of changing or relaxing City policies and standards as a means of avoiding acquisitions has been discussed throughout this project. The following list of possible changes to consider is presented here to further this discussion. Knowing where flexibility exists will be helpful in developing and evaluating alternative roadway configurations.

Allow Alley Access for Commercial Property. The impact to other nearby property and others with rights to the alley such as adjacent property owners and utilities would need to be considered. How alley-only access affects the commercial viability of the property created, and if that increases the likelihood of the property owner redeveloping the site to create a more lucrative configuration, should also be considered.

Reduce Minimum Distance of Driveway from Crossing Arterial or Collector. Reducing the 150' minimum currently prescribed by the Access Management Policies to 100' should be considered if it were to avoid some acquisitions. Consideration would have to be given to safety and operational aspects of this action.

Allow Additional Driveways. Strategically providing extra driveways where doing so could eliminate acquisitions.

Reduce Parking Requirements. Lower the number of parking spaces required for existing uses in cases where doing so would preserve an existing structure. Factors to consider include the potential to force commercial parking into nearby residential area, and the commercial viability of the site without suitable parking.

A final decision to adopt or not any of these should not be made until a thorough understanding of the safety, functional, and economic impacts can be weighed against the benefits that would be realized.

SECTION 5. EVALUATION OF RIGHT-OF-WAY OFFSETS

DATA AND CALCULATION PROCESS

The section presents a block-by-block determination of the right-of-way shifts that would be necessary to provide both "low" and "moderate" levels of risk of unanticipated acquisitions. Information needed to do this includes the current setback of existing improvements as well as the presence and type (angle) of front parking. The existing setback of improvements was measured for each parcel using the results of topographic and right-of-way surveys completed earlier in the project. Those distances along with other information described below are tabulated in the appendix to this report. The presence and angle of front parking was determined from photos and project mapping, information that is also tabulated in the appendix.

Also needed are the width of buffer needed between the access aisle and edge of street section; the aisle width needed to provide access to the front parking; the depth of parking space; and in the case of perpendicular (90º) parking, the width needed to maneuver between the parking spaces and the access aisle. That information is tabulated for 60º and 90º parking in Table 3.

Table 3. Total Setback Needed for Various Parking Conditions

Parking Angle	Buffer Width	Access Aisle Width	Maneuver Width	Parking Depth	Total Setback Needed
90º	3'	16'	8'	18'	45'
60º	3'	16'	--	20'	39'

With this information, the offset of the existing right-of-way lines needed to avoid impacting the parcels was determined for each side of the roadway for each block. Figures 9a and 9b illustrate the data needed and the calculation process, and the results tabulated in the appendix.

The right-of-way offsets are determined for each parcel. Generally the worst case for each block, rounded up to the nearest foot, has been used to establish the low and moderate risk shifts for the entire block.

Exceptions to this are the residential parcels at 1730 E and 1736 E Broadway. Those structures are very close to the existing roadway and would drive the right-of-way offsets well northward. They have therefore been excluded from this analysis. The remaining parcels in that block have been redeveloped without reliance on front parking and no offset is needed. City-owned parcels are included in the analysis but are flagged with blue shading or cross-hatching.

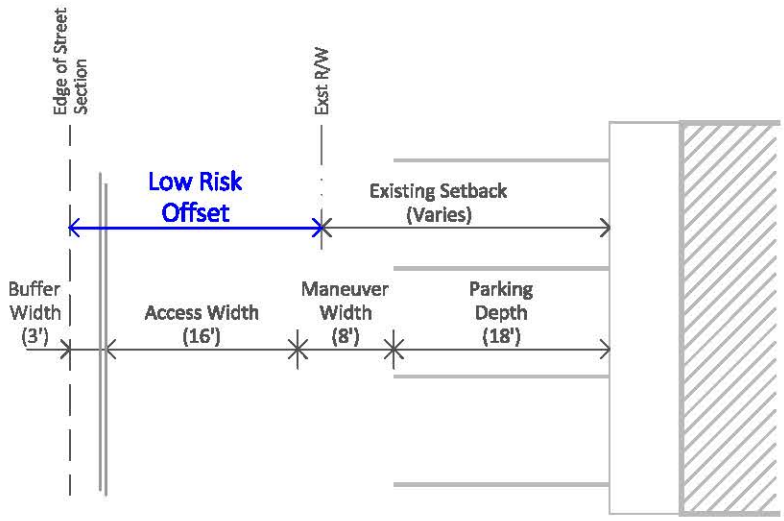
Blocks with no front parking do not require offsets. For those that do, a "base right-of-way line" has been established based on the narrowest half right-of-way within the particular block. The existing setback distances and the low and moderate risk offsets are determined from that line.

Diagrams attached at the end of this report show both the data used and the results obtained. The base right-of-way lines are shown as blue dashed lines. The low risk offsets, which are the most conservative and therefore normally the widest, are shown as yellow lines. The moderate risk offsets are shown as red lines. Parcels previously acquired by the City are indicated by blue cross hatching.

ANTICIPATED USE OF THESE FINDINGS

The low and moderate risk offsets will be used in the upcoming development of roadway configuration alternatives. The approach will be generally to place the edge of the street section at the low risk offset on the side of the roadway away from which the widening is proposed.

In the evaluation process, the opportunity to achieve a significant benefit or avoid a significant impact by using a lesser shift may be found. The moderate risk offset would be considered as the best option to avoid full acquisitions on the protected side. Should the moderate risk offset still not achieve the intended result, the risk of full acquisitions would be considered high.



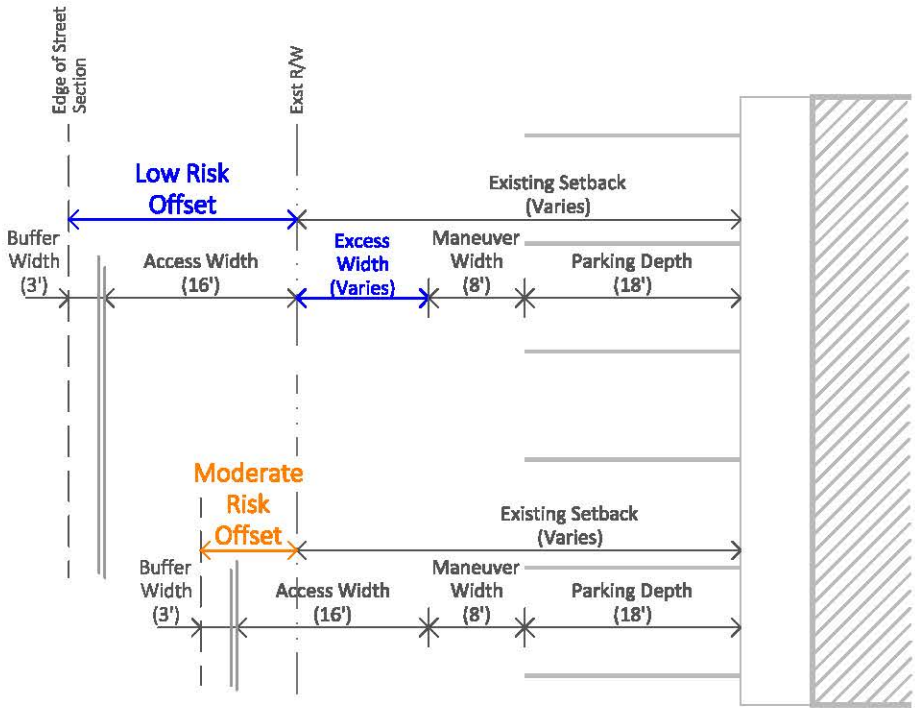
Case 1 -- 90° Parking

Existing Setback is less than or equal to the combined maneuvering width/parking depth

Low Risk Offset = Buffer Width (3')
+ Access Width (16')
+ Maneuver Width (8')
+ Parking Depth (18')
- Existing Setback
= 45' - Existing Setback

This is considered low risk since it places 16' access lane entirely within public right-of-way.

Case 1. Existing Setback is less than or equal to the Combined Maneuvering Width/Parking Depth



Case 2 -- 90° Parking

Existing Setback is greater than the combined maneuvering width/parking depth

Low Risk Offset = Buffer Width (3')
+ Access Width (16')
Excess = Existing Setback
- Maneuver Width (8')
- Parking Depth (18')
= Existing Setback - 26'

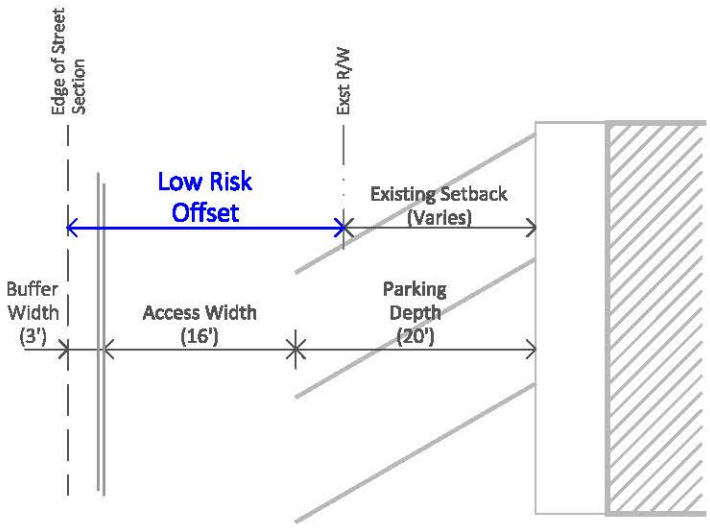
Moderate Risk Offset = Buffer Width (3')
+ Access Width (16')
+ Maneuver Width (8')
+ Parking Depth (18')
- Existing Setback
= 45' - Existing Setback

The *Low Risk Offset* is equal to the sum of the buffer width and access width. This is considered low risk since it places the access width entirely within public right-of-way.

The *Moderate Risk Offset* is basically the same definition as the *Low Risk Offset* for Case 1 except that a portion of the access width would extend into existing private property. It would be necessary either for (1) the City to acquire the necessary partial acquisition or (2) property owners to agree to a joint access-parking arrangement.

Case 2. Existing Setback is greater than the Combined Maneuvering Width/Parking Depth

Figure 9a.
Determination of Right-of-Way Offsets -- 90° Parking



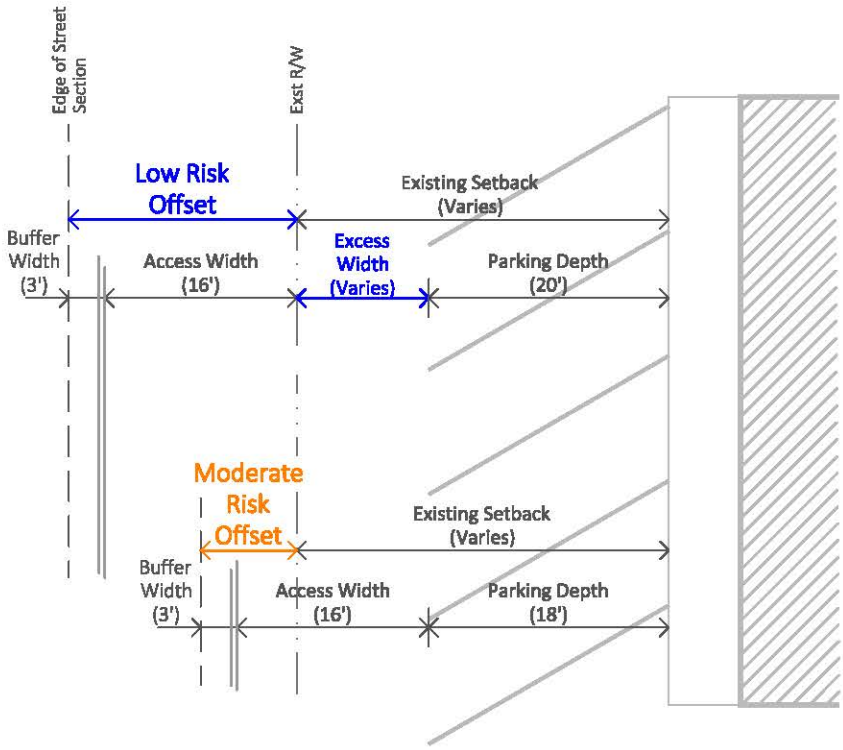
Case 1. Existing Setback is less than or equal to the Parking Depth

Case 1 -- 60° Parking

Existing Setback is less than or equal to the combined maneuvering width/parking depth

Low Risk Offset = Buffer Width (3')
+ Access Width (16')
+ Parking Depth (20')
= 39' - Existing Setback

This is considered low risk since it places 16' access lane entirely within public right-of-way.



Case 2. Existing Setback is greater than the Parking Depth

Case 2 -- 60° Parking

Existing Setback is greater than the combined maneuvering width/parking depth

Low Risk Offset = Buffer Width (3')
+ Access Width (16')

Excess Width = Existing Setback
- Parking Depth (20')
= Existing Setback - 20'

Moderate Risk Offset = Buffer Width (3')
+ Access Width (16')
+ Parking Depth (20')
- Existing Setback
= 39' - Existing Setback

The *Low Risk Offset* is equal to the sum of the buffer width and access width. This is considered low risk since it places the access width entirely within public right-of-way.

The *Moderate Risk Offset* is basically the same definition as the *Low Risk Offset* for Case 1 except that a portion of the access width would extend into existing private property. It would be necessary either for (1) the City to acquire the necessary partial acquisition or (2) property owners to agree to a joint access-parking arrangement.

Figure 9b.
Determination of Right-of-Way Offsets -- 60° Parking

Appendix

DETERMINATION OF RIGHT-OF-WAY SHIFT NEEDED TO AVOID IMPACTING PARCELS
Broadway Corridor Study
February, 2014 -- mtj

Feb 03, 2014 10:36 AM

Setbacks Needed to Maintain Parking Funtionality

Parking	Buffer Width	Access Width	Mnvr Width	Parking Depth	Total Setback Needed
90°	3'	16'	8'	18'	45'
60°	3'	16'	--	20'	39'

NORTH SIDE

Address	Current Setback	Front Parking	Total Setback Needed	Mnvr/ Parking Width	Buffer + Access Width	Case 1 or 2?	Low Risk Shift	Moderate Risk Shift	Comment
1. Park to Fremont							--		
North Side									
1001-35 E.	24.6'	--	--	--	--	--	--	--	
1099 E.	56.4'	--	--	--	--	--	--	--	
						Max:	--	--	
						Use:	--	--	
2. Fremont to Santa Rita									
North Side									
1101 E.	16.1'	--	--	--	--	--	--	--	
(Parking)	25.0'	--	--	--	--	--	--	--	
						Max:	--	--	
						Use:	--	--	
3. Santa Rita to Mountain									
North Side									
1201 E.	47.0'	--	--	--	--	--	--	--	
1215 E.	50.7'	--	--	--	--	--	--	--	
1221 E.	52.6'	--	--	--	--	--	--	--	
						Max:	--	--	
						Use:	--	--	
4. Mountain to Highland									
North Side									
1303 E.	23.6'	--	--	--	--	--	--	--	
1309 E.	29.0'	--	--	--	--	--	--	--	
1315 E.	26.5'	--	--	--	--	--	--	--	
1327 E.	26.8'	--	--	--	--	--	--	--	
1333 E.	28.8'	--	--	--	--	--	--	--	
1339 E.	34.2'	--	--	--	--	--	--	--	
1349 E.	27.4'	--	--	--	--	--	--	--	
						Max:	--	--	
						Use:	--	--	

SOUTH SIDE

Address	Current Setback	Front Parking	Total Setback Needed	Mnvr/ Parking Width	Buffer + Access Width	Case 1 or 2?	Low Risk Shift	Moderate Risk Shift	Comment
South Side									
1010 E.	10.1'	--	--	--	--	--	--	--	
1028 E.	19.7'	--	--	--	--	--	--	--	
1034 E.	0.1'	--	--	--	--	--	--	--	
1040 E.	33.8'	--	--	--	--	--	--	--	
1046 E.	21.5'	--	--	--	--	--	--	--	
						Max:	--	--	
						Use:	--	--	
South Side									
1100 E.	43.4'	90°	45'	26'	19'	2	19.0'	1.6'	
1120 E.	17.1'	--	--	--	--	--	--	--	
1124 E.	16.5'	--	--	--	--	--	--	--	
1128 E.	26.9'	90°	45'	26'	19'	2	19.0'	18.1'	
1148 E.	20.7'	--	--	--	--	--	--	--	
						Max:	19.0'	18.1'	
						Use:	19.0'	19.0'	
South Side									
1202 E.	71.7'	--	--	--	--	--	--	--	
1222 E.	9.3'	--	--	--	--	--	--	--	
1230 E.	16.1'	--	--	--	--	--	--	--	
						Max:	--	--	
						Use:	--	--	
South Side									
1316 E.	15.3'	--	--	--	--	--	--	--	
1324 E.	16.9'	--	--	--	--	--	--	--	
1328-32 E.	178.0'	--	--	--	--	--	--	--	
1340 E.	17.2'	--	--	--	--	--	--	--	
1350 E.	87.1'	--	--	--	--	--	--	--	
						Max:	--	--	
						Use:	--	--	

DETERMINATION OF RIGHT-OF-WAY SHIFT NEEDED TO AVOID IMPACTING PARCELS
Broadway Corridor Study
February, 2014 -- mtj

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Setbacks Needed to Maintain Parking Funtionality

Parking	Buffer Width	Access Width	Mnvr Width	Parking Depth	Total Setback Needed
90°	3'	16'	8'	18'	45'
60°	3'	16'	--	20'	39'

NORTH SIDE

Address	Current Setback	Front Parking	Total Setback Needed	Mnvr/ Parking Width	Buffer + Access Width	Case 1 or 2?	Low Risk Shift	Moderate Risk Shift	Comment
5. Highland to Vine									
North Side									
1403 E.	26.9'	--	--	--	--	--	--	--	
1409 E.	28.8'	--	--	--	--	--	--	--	
1415 E.	36.6'	--	--	--	--	--	--	--	
1421 E.	25.9'	90°	45'	26'	19'	1	19.1'	--	
1427 E.	62.6'	--	--	--	--	--	--	--	
1433 E.	21.0'	90°	45'	26'	19'	1	24.0'	--	
1443 E.	25.2'	60°	39'	20'	19'	2	19.0'	13.8'	City-Owned
						Max:	24.0'	13.8'	
						Use:	24.0'	14.0'	
6. Vine to Cherry									
North Side									
1501 E.	14.2'	90°	45'	26'	19'	1	30.8'	--	
1515 E.	19.2'	90°	45'	26'	19'	1	25.8'	--	
1521 E.	30.6'	90°	45'	26'	19'	2	19.0'	14.4'	
1523 E.	17.3'	--	--	--	--	--	--	--	
1535 E.	15.9'	--	--	--	--	--	--	--	
						Max:	30.8'	14.4'	
						Use:	31.0'	15.0'	
7. Cherry to Warren									
North Side									
1601 E.	21.9'	--	--	--	--	--	--	--	
1611 E.	24.2'	--	--	--	--	--	--	--	
1615 E.	20.9'	--	--	--	--	--	--	--	
1625 E.	21.4'	--	--	--	--	--	--	--	
1629 E.	21.8'	--	--	--	--	--	--	--	
1641 E.	24.9'	--	--	--	--	--	--	--	
1647 E.	21.6'	--	--	--	--	--	--	--	
						Max:	--	--	
						Use:	--	--	
8. Warren to Martin									
North Side									
1703 E.	28.3'	--	--	--	--	--	--	--	
1709 E.	28.3'	--	--	--	--	--	--	--	
1749 E.	64.2'	--	--	--	--	--	--	--	
1749 E.	23.2'	--	--	--	--	--	--	--	
						Max:	--	--	
						Use:	--	--	

SOUTH SIDE

Address	Current Setback	Front Parking	Total Setback Needed	Mnvr/ Parking Width	Buffer + Access Width	Case 1 or 2?	Low Risk Shift	Moderate Risk Shift	Comment
5. Highland to Vine									
South Side									
1400 E.	55.4'		--	--	--	--	--	--	
						Max:	--	--	
						Use:	--	--	
6. Vine to Cherry									
South Side									
1502 E.	22.8'	--	--	--	--	--	--	--	
1518 E.	36.0'	90°	45'	26'	19'	2	19.0'	9.0'	
1530 E.	35.4'	90°	45'	26'	19'	2	19.0'	9.6'	
1540 E.	73.2'	--	--	--	--	--	--	--	
						Max:	19.0'	9.6'	
						Use:	19.0'	10.0'	
7. Cherry to Warren									
South Side									
1602 E.	65.2'	--	--	--	--	--	--	--	
1628 E.	12.8'	--	--	--	--	--	--	--	
1634 E.	8.0'	--	--	--	--	--	--	--	
1640 E.	7.1'	--	--	--	--	--	--	--	
1646 E.	17.4'	--	--	--	--	--	--	--	
						Max:	--	--	
						Use:	--	--	
8. Warren to Martin									
South Side									
1700 E.	19.9'	--	--	--	--	--	--	--	
1730 E.	-14.9'	--	--	--	--	--	--	--	Excluded from determination
1736 E.	-20.9'	--	--	--	--	--	--	--	Excluded from determination
119 S. Martin	20.5'	--	--	--	--	--	--	--	
						Max:	--	--	
						Use:	--	--	

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Setbacks Needed to Maintain Parking Funtionality

Parking	Buffer Width	Access Width	Mnvr Width	Parking Depth	Total Setback Needed
90°	3'	16'	8'	18'	45'
60°	3'	16'	--	20'	39'

NORTH SIDE

Address	Current Setback	Front Parking	Total Setback Needed	Mnvr/ Parking Width	Buffer + Access Width	Case 1 or 2?	Low Risk Shift	Moderate Risk Shift	Comment
9. Norris - Olsen									
North Side									
2005 E.	24.2'	--	--	--	--	--	--	--	
2009 E.	25.0'	90°	45'	26'	19'	1	20.0'	--	
2013 E.	17.1'	--	--	--	--	--	--	--	
2021 E.	21.2'	90°	45'	26'	19'	1	23.8'	--	
2043 E.	24.7'	--	--	--	--	--	--	--	
						Max:	23.8'	--	
						Use:	24.0'	--	
10. Olsen - Plumer									
North Side									
	108.0'	--	--	--		--	--	--	
						Max:	--	--	
						Use:	--	--	
11. Plumer - Wilson Algmnt									
North Side									
2201-05 E.	34.2'	90°	45'	26'	19'	2	19.0'	10.8'	
2221 E.	26.7'	90°	45'	26'	19'	2	19.0'	18.3'	
2225 E.	29.8'	90°	45'	26'	19'	2	19.0'	15.2'	City-Owned
2227 E.	29.8'	90°	45'	26'	19'	2	19.0'	15.2'	City-Owned
2229 E.	29.8'	90°	45'	26'	19'	2	19.0'	15.2'	City-Owned
2233 E.	29.7'	90°	45'	26'	19'	2	19.0'	15.3'	
2235 E.	29.5'	90°	45'	26'	19'	2	19.0'	15.5'	
2245 E.	29.7'	90°	45'	26'	19'	2	19.0'	15.3'	
2257 E.	29.9'	90°	45'	26'	19'	2	19.0'	15.1'	
2259 E.	29.8'	90°	45'	26'	19'	2	19.0'	15.2'	
						Max:	19.0'	18.3'	
						Use:	19.0'	19.0'	
12. Wilson Algmnt - Smith									
North Side									
2301 E.	29.7'	90°	45'	26'	19'	2	19.0'	15.3'	
2303 E.	29.7'	90°	45'	26'	19'	2	19.0'	15.3'	
2305 E.	29.8'	90°	45'	26'	19'	2	19.0'	15.2'	
2307 E.	29.9'	90°	45'	26'	19'	2	19.0'	15.1'	
2309 E.	29.9'	90°	45'	26'	19'	2	19.0'	15.1'	
2311 E.	30.0'	90°	45'	26'	19'	2	19.0'	15.0'	
2343 E.	27.6'	--	--	--	--	--	--	--	
						Max:	19.0'	15.3'	
						Use:	19.0'	16.0'	

SOUTH SIDE

Address	Current Setback	Front Parking	Total Setback Needed	Mnvr/ Parking Width	Buffer + Access Width	Case 1 or 2?	Low Risk Shift	Moderate Risk Shift	Comment
South Side									
2000 E.	33.9'	90°	45'	26'	19'	2	19.0'	11.1'	
2008 E.	33.8'	90°	45'	26'	19'	2	19.0'	11.2'	
2012 E.	25.0'	90°	45'	26'	19'	1	20.0'	--	
2014 E.	24.9'	90°	45'	26'	19'	1	20.1'	--	
2020 E.	33.2'	90°	45'	26'	19'	2	19.0'	11.8'	
2026 E.	33.0'	90°	45'	26'	19'	2	19.0'	12.0'	
2030 E.	31.3'	60°	39'	20'	19'	2	19.0'	7.7'	
						Max:	20.1'	12.0'	
						Use:	21.0'	12.0'	
South Side									
2118 E.	43.1'	--	--	--	--	--	--	--	
2120 E.	81.8'	--	--	--	--	--	--	--	
2150 E.	29.8'	--	--	--	--	--	--	--	
						Max:	--	--	
						Use:	--	--	
South Side									
2200 E.	40.9'	--	--	--	--	--	--	--	
2222 E.	34.1'	--	--	--	--	--	--	--	
2250 E.	40.1'	--	--	--	--	--	--	--	
						Max:	--	--	
						Use:	--	--	
South Side									
2300 E.	105.3'	90°	45'	26'	19'	2	19.0'	--	
2310 E.	19.9'	60°	39'	20'	19'	1	19.1'	--	
2330 E.	20.0'	60°	39'	20'	19'	1	19.0'	--	
2354, 58 E.	20.5'	60°	39'	20'	19'	2	19.0'	18.5'	
2360 E.	20.2'	60°	39'	20'	19'	2	19.0'	18.8'	
2364 E.	20.2'	60°	39'	20'	19'	2	19.0'	18.8'	
						Max:	19.1'	18.8'	
						Use:	20.0'	19.0'	

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Setbacks Needed to Maintain Parking Funtionality

Parking	Buffer Width	Access Width	Mnvr Width	Parking Depth	Total Setback Needed
90°	3'	16'	8'	18'	45'
60°	3'	16'	--	20'	39'

NORTH SIDE

Address	Current Setback	Front Parking	Total Setback Needed	Mnvr/ Parking Width	Buffer + Access Width	Case 1 or 2?	Low Risk Shift	Moderate Risk Shift	Comment
13. Norton Algmnt - Tucson Blvd									
North Side									
2419 E.	14.6'	--	--	--	--	--	--	--	
2439 E.	27.7'	--	--	--	--	--	--	--	
2445 E.	40.6'	--	--	--	--	--	--	--	
						Max:	--	--	
						Use:	--	--	
14. Tucson Blvd - Forgeus Algmnt									
North Side									
2525 E.	144.3'	--	--	--	--	--	--	--	
2545 E.	26.9'	90°	45'	26'	19'	2	19.0'	18.1'	
2549 E.	26.9'	90°	45'	26'	19'	2	19.0'	18.1'	
2553 E.	27.1'	90°	45'	26'	19'	2	19.0'	17.9'	
2555 E.	27.0'	90°	45'	26'	19'	2	19.0'	18.0'	
2559 E.	26.9'	90°	45'	26'	19'	2	19.0'	18.1'	
2563 E.	26.9'	90°	45'	26'	19'	2	19.0'	18.1'	
2575 E.	26.9'	90°	45'	26'	19'	2	19.0'	18.1'	
						Max:	19.0'	18.1'	
						Use:	19.0'	19.0'	
15. Forgeus Algmnt - Sawtelle Algmnt									
North Side									
2605 E.	26.9'	90°	45'	26'	19'	2	19.0'	18.1'	
2615 E.	26.9'	90°	45'	26'	19'	2	19.0'	18.1'	
2627 E.	26.8'	90°	45'	26'	19'	2	19.0'	18.2'	
2629 E.	26.9'	90°	45'	26'	19'	2	19.0'	18.1'	
2631 E.	23.3'	90°	45'	26'	19'	1	21.7'	--	
2635 E.	17.7'	90°	45'	26'	19'	1	27.3'	--	
2675 E.	14.8'	--	--	--	--	--	--	--	
						Max:	27.3'	18.2'	
						Use:	28.0'	19.0'	
16. Sawtelle Algmnt - Treat									
North Side									
2707 E.	20.2'	90°	45'	26'	19'	1	24.8'	--	
2711 E.	61.8'	--	--	--	--	--	--	--	
2719 E.	20.1'	90°	45'	26'	19'	1	24.9'	--	
2725 E.	18.6'	90°	45'	26'	19'	1	26.4'	--	
2731 E.	22.0'	90°	45'	26'	19'	1	23.0'	--	
						Max:	26.4'	--	
						Use:	27.0'	--	

SOUTH SIDE

Address	Current Setback	Front Parking	Total Setback Needed	Mnvr/ Parking Width	Buffer + Access Width	Case 1 or 2?	Low Risk Shift	Moderate Risk Shift	Comment
South Side									
2402 E.	20.2'	60°	39'	20'	19'	2	19.0'	18.8'	
2410 E.	20.2'	60°	39'	20'	19'	2	19.0'	18.8'	
2416 E.	20.2'	60°	39'	20'	19'	2	19.0'	18.8'	
2438 E.	20.3'	60°	39'	20'	19'	2	19.0'	18.7'	
2440 E.	20.3'	60°	39'	20'	19'	2	19.0'	18.7'	
2448 E.	20.1'	--	--	--	--	--	--	--	
						Max:	19.0'	18.8'	
						Use:	19.0'	19.0'	
South Side									
2510 E.	120.3'	--	--	--	--	--	--	--	
2526 E.	27.4'	--	--	--	--	--	--	--	
2530 E.	23.7'	90°	45'	26'	19'	1	21.3'	--	
2536 E.	23.6'	60°	39'	20'	19'	2	19.0'	15.4'	
						Max:	21.3'	15.4'	
						Use:	22.0'	16.0'	
South Side									
2610 E.	26.6'	60°	39'	20'	19'	2	19.0'	12.4'	
2612 E.	26.7'	60°	39'	20'	19'	2	19.0'	12.3'	
2616 E.	26.6'	60°	39'	20'	19'	2	19.0'	12.4'	
2620 E.	185.7'	--	--	--	--	--	--	--	
2626 E.	155.9'	--	--	--	--	--	--	--	
2634 E.	31.4'	--	--	--	--	--	--	--	
2636 E.	29.3'	90°	45'	26'	19'	2	19.0'	15.7'	
2644 E.	50.1'	90°	45'	26'	19'	2	19.0'	--	
						Max:	19.0'	15.7'	
						Use:	19.0'	16.0'	
South Side									
2720 E.	147.0'	--	--	--	--	--	--	--	
2736 E.	77.9'	--	--	--	--	--	--	--	
2744 E.	161.7'	--	--	--	--	--	--	--	
						Max:	--	--	
						Use:	--	--	

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Setbacks Needed to Maintain Parking Funtionality

Parking	Buffer Width	Access Width	Mnvr Width	Parking Depth	Total Setback Needed
90°	3'	16'	8'	18'	45'
60°	3'	16'	--	20'	39'

NORTH SIDE

Address	Current Setback	Front Parking	Total Setback Needed	Mnvr/ Parking Width	Buffer + Access Width	Case 1 or 2?	Low Risk Shift	Moderate Risk Shift	Comment
17. Treat - Stewart									
North Side									
2801 E.	25.1'	--	--	--	--	--	--	--	
2807 E.	25.4'	--	--	--	--	--	--	--	
2813 E.	25.0'	90°	45'	26'	19'	1	20.0'	--	
2819 E.	30.0'	--	--	--	--	--	--	--	
2825 E.	22.3'	90°	45'	26'	19'	1	22.7'	--	
2831 E.	25.4'	90°	45'	26'	19'	1	19.6'	--	
2855 E.	25.3'	--	--	--	--	--	--	--	
						Max:	22.7'	--	
						Use:	23.0'	--	
18. Stewart-Eastbourne									
North Side									
2901 E.	32.5'	90°	45'	26'	19'	2	19.0'	12.5'	
2907 E.	20.0'	--	--	--	--	--	--	--	
2913 E.	19.5'	--	--	--	--	--	--	--	
2939 E.	21.7'	--	--	--	--	--	--	--	
2955 E.	21.1'	--	--	--	--	--	--	--	
						Max:	19.0'	12.5'	
						Use:	19.0'	13.0'	

SOUTH SIDE

Address	Current Setback	Front Parking	Total Setback Needed	Mnvr/ Parking Width	Buffer + Access Width	Case 1 or 2?	Low Risk Shift	Moderate Risk Shift	Comment
South Side									
2800 E.	57.7'	--	--	--	--	--	--	--	
2850 E.	75.0'	--	--	--	--	--	--	--	
						Max:	--	--	
						Use:	--	--	
South Side									
2916 E.	41.6'	--	--	--	--	--	--	--	
2920-24 E.	43.8'	90°	45'	26'	19'	2	19.0'	1.2'	
2926 E.	43.9'	90°	45'	26'	19'	2	19.0'	1.1'	
2928 E.	44.0'	90°	45'	26'	19'	2	19.0'	1.0'	
2930 E.	44.1'	90°	45'	26'	19'	2	19.0'	0.9'	
2932 E.	42.4'	90°	45'	26'	19'	2	19.0'	2.6'	
2934 E.	41.9'	60°	39'	20'	19'	2	19.0'	--	
2936 E.	42.2'	60°	39'	20'	19'	2	19.0'	--	
						Max:	19.0'	2.6'	
						Use:	19.0'	3.0'	

Attachments

Attachment 1
Park to Fremont -- 1000 E Block

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Attachment 2
Fremont to Santa Rita -- 1100 E Block

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Attachment 3
Santa Rita to Mountain -- 1200 E Block

Attachment 4
Mountain to Highland -- 1300 E Block

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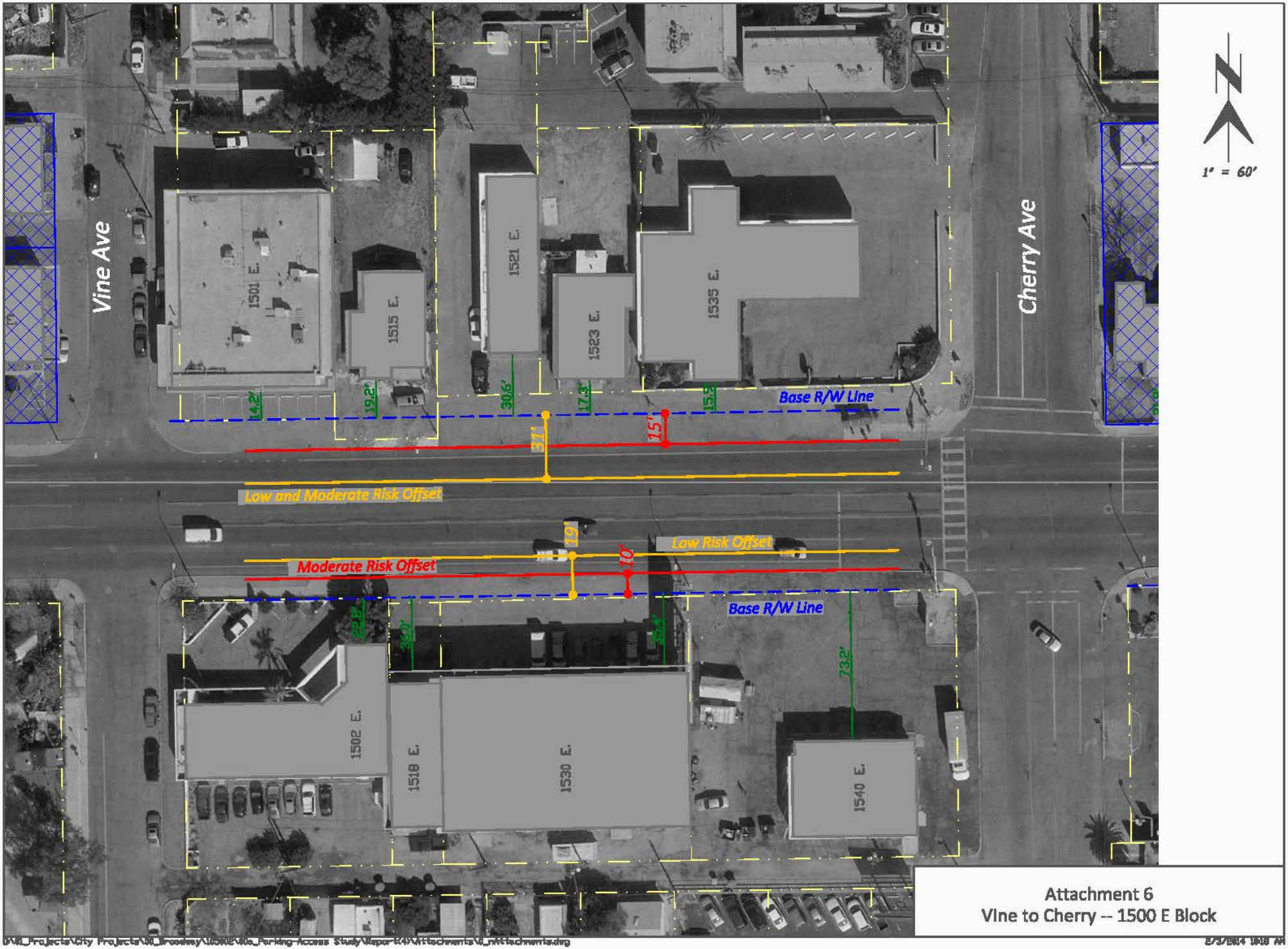
Attachment 5
Highland to Vine -- 1400 E Block



Attachment 6
Vine to Cherry -- 1500 E Block

Attachment 7
Cherry to Warren -- 1600 E Block

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Attachment 8
Warren to Martin -- 1700 E Block

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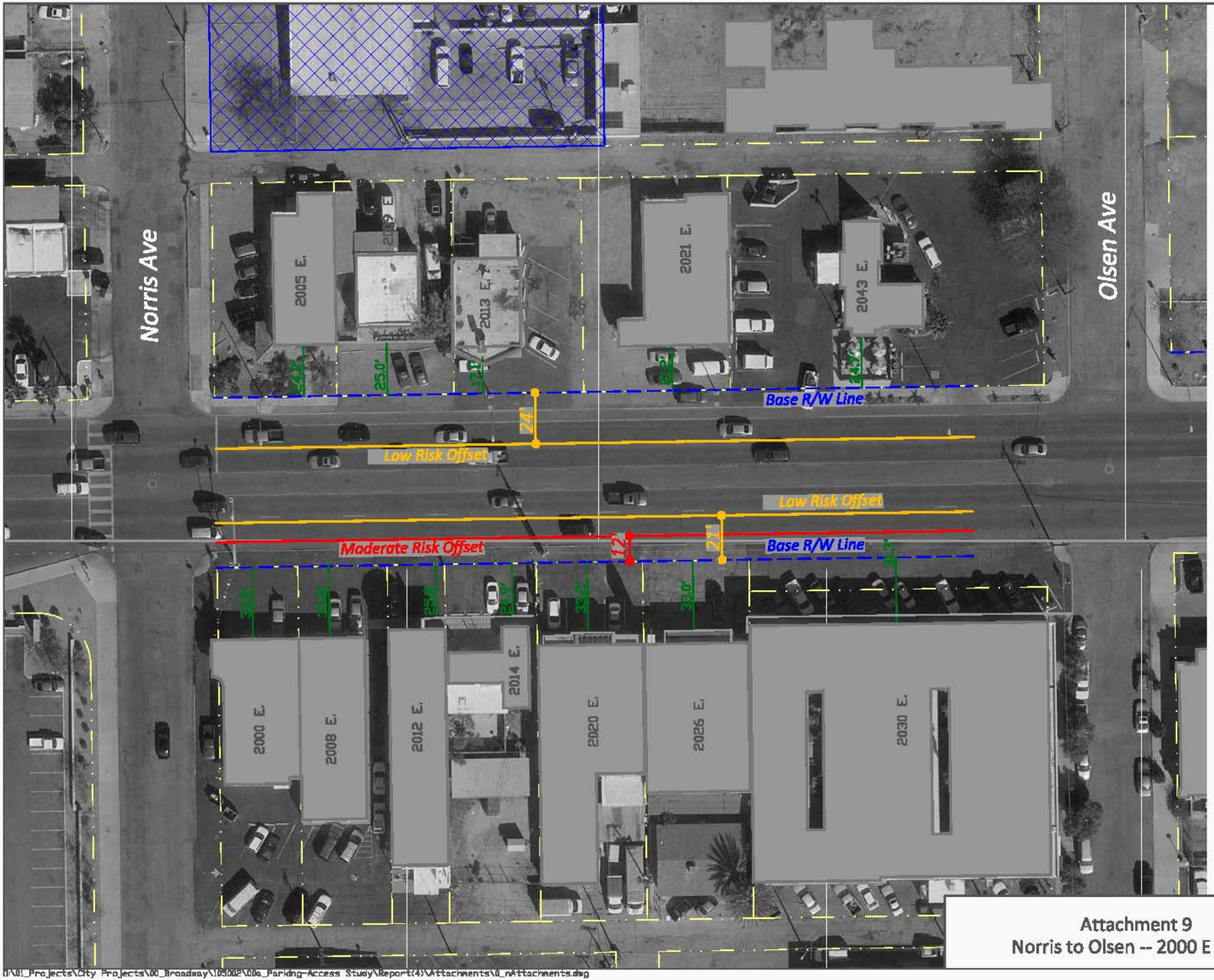

Attachment 9
Norris to Olsen -- 2000 E Block

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Attachment 10
Olsen to Plumer -- 2100 E Block

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11/19/2013 10:24 AM

Attachment 11
Plumer to Wilson Alignment – 2200 E Block

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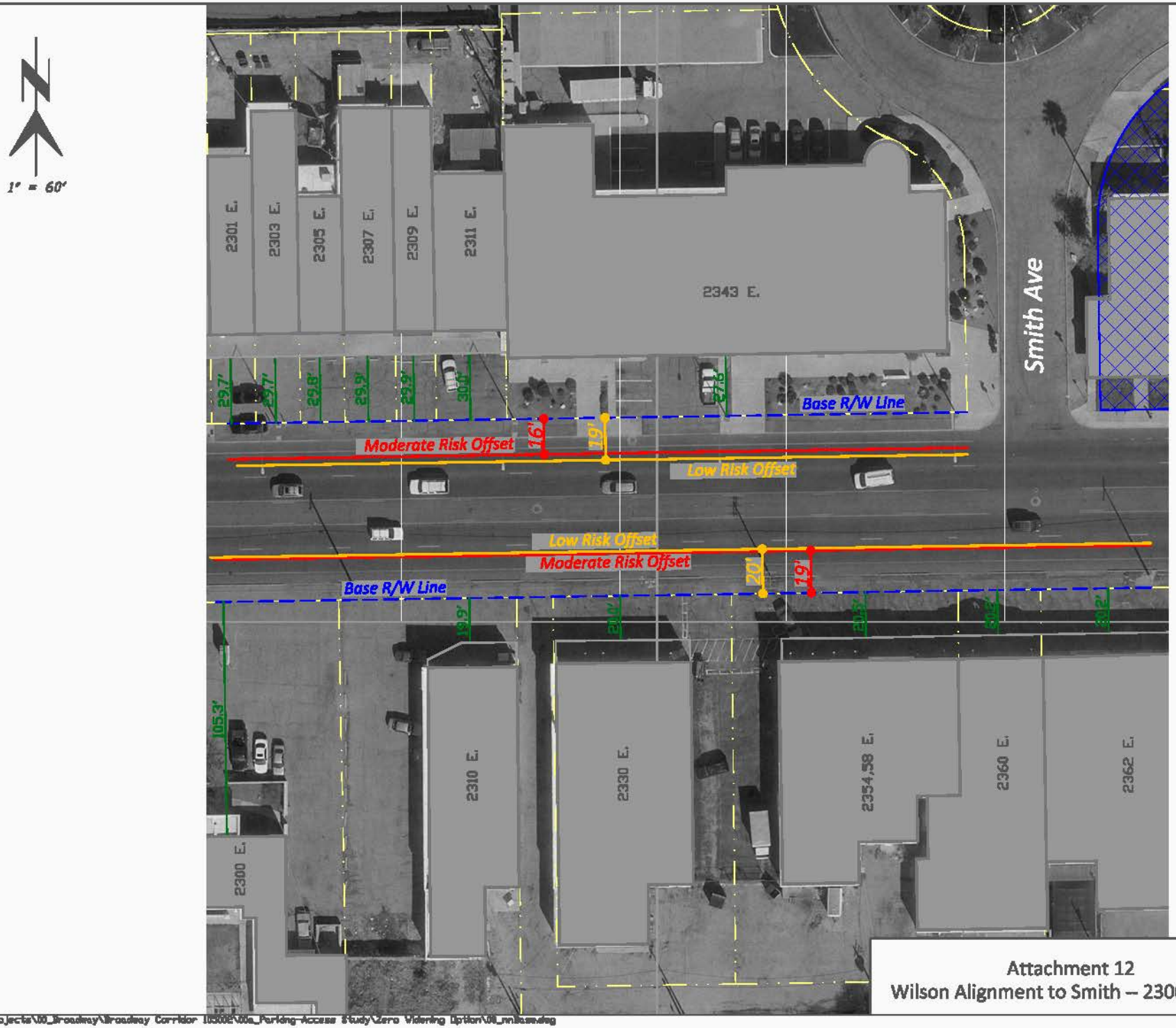
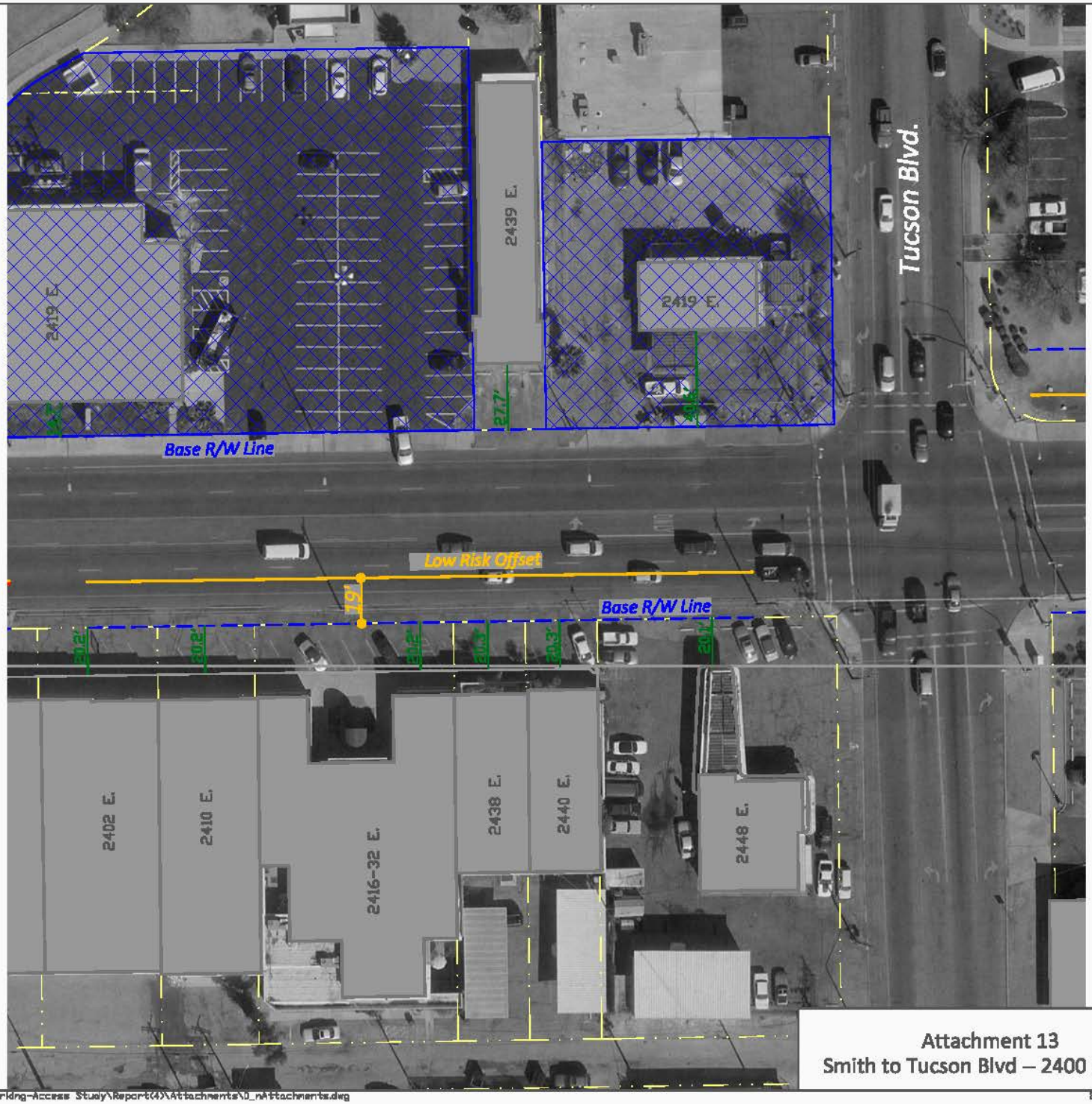


Attachment 12
Wilson Alignment to Smith -- 2300 E Block



Attachment 13
Smith to Tucson Blvd – 2400 E Block

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Attachment 14
Tucson Blvd to Forgeus -- 2500 E Block

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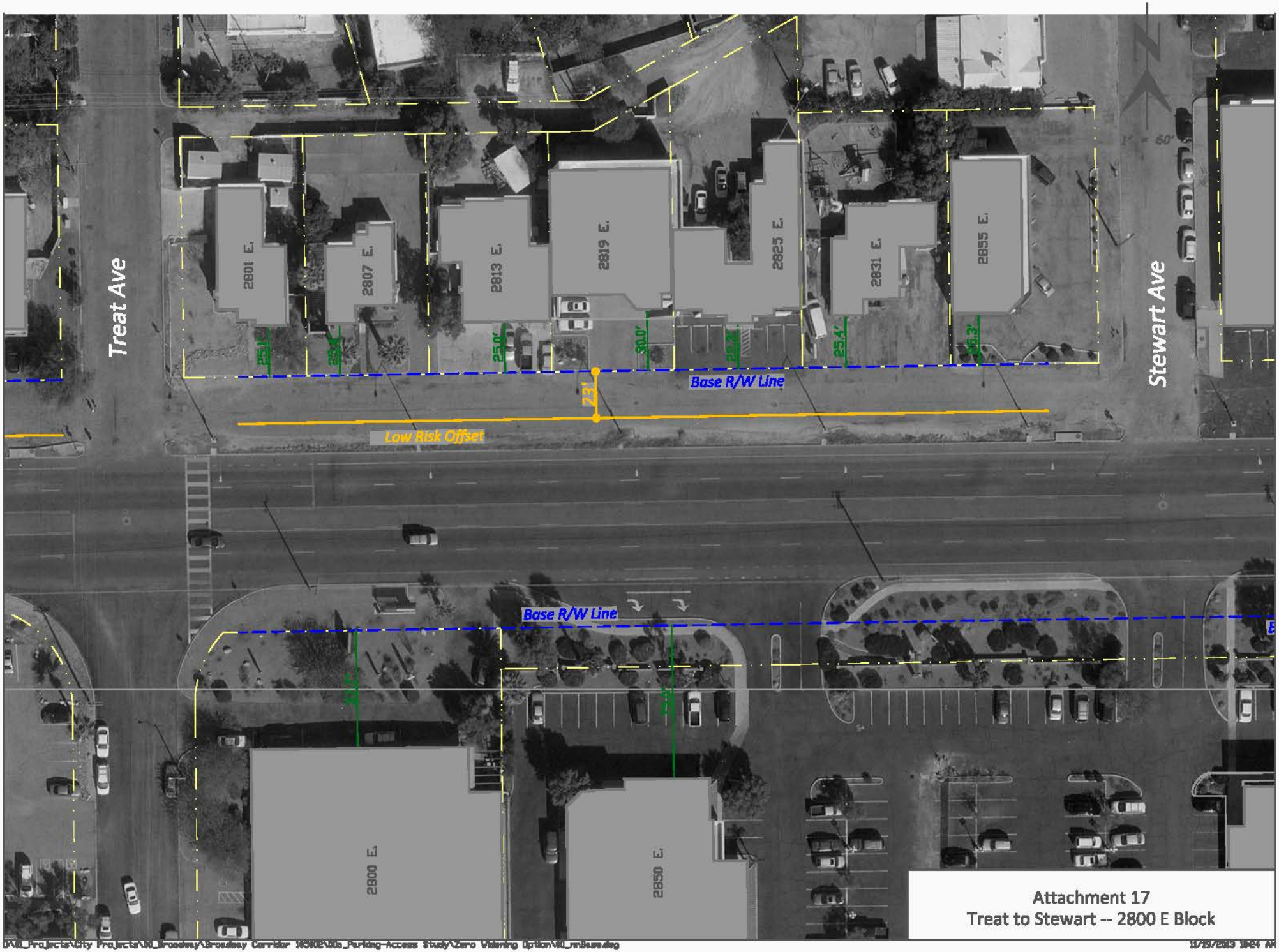
Attachment 15
Forgeus Alignment to Sawtelle Alignment -- 2600 E Block

Attachment 16
Sawtelle Alignment to Treat -- 2700 E Block



Attachment 17
Treat to Stewart -- 2800 E Block

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10/15/2013 10:24 AM

Attachment 18
Stewart to Eastbourne -- 2900 E Block

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