Roadway cross sections to be considered as the basis for roadway design options within this planning or study area

RIO GRANDE BOULEVARD
Complete Street Concept Plan

February 2017

CITY OF ALBUQUERQUE · NEW MEXICO · 1706

Kimley»Horn

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EXECUTIVE SUMMARY

Rio Grande Boulevard serves as the primary gateway to the major tourism and shopping district of Old Town Albuquerque. It also provides a connection to the regional highway network (I-40) and the regional bikeway network (the I-40 Trail). The corridor is lined with a diverse set of visitor-serving, commercial, historical, industrial, and residential uses. While it serves a diverse set of purposes for a wide cross-section of users, it was primarily designed as an auto-oriented thoroughfare. This Complete Street Concept Plan Report seeks to identify implementable infrastructure improvements to make the corridor safer, more accessible, and desirable for users of all modes of transportation.

A study area vicinity map is shown in **Figure ES-1**.

Corridor Description

Rio Grande Boulevard serves as an Urban Minor Arterial, extending approximately eight miles between Alhambra Avenue (south of Central Avenue) and Alameda Boulevard. The section of Rio Grande Boulevard included in this corridor study represents the southernmost section, approximately one mile between I-40 and Alhambra Avenue. This segment is a heavily utilized connection between I-40, Central Avenue, and Old Town Albuquerque.

Segments of Rio Grande Boulevard include designated bike lanes and provide a key bikeway connection between Mountain Road (a City-designated "Bike Boulevard") and the I-40 Trail. High levels of pedestrian activity are associated with the historic and retail uses along the corridor, as well as frequent transit service along both Rio Grande Boulevard and Central Avenue. Multimodal circulation demands on Rio Grande Boulevard are expected to grow with pending and approved development projects along the northern portion of the project study area. In addition, enhancing the functionality of Rio Grande Boulevard as the connecting gateway to Old Town will likely cause increases in both bicycle and pedestrian activity along the corridor.

Project Need

The study area serves more than 25,000 vehicles per day, resulting in congestion during the morning and afternoon peak periods. Rio Grande Boulevard serves as a major commuter access route to downtown from westside Albuquerque. As such, morning congestion is heaviest approaching Central Avenue, while evening congestion is heaviest near the I-40 interchange. Rio Grande Boulevard is used as a freeway access point for the local community as well as a cut-through route for traffic accessing or leaving Downtown Albuquerque via Central Avenue. Rio Grande Boulevard's collision rate exceeds the statewide average, with a number of collisions involving bicyclists and pedestrians. The heavy traffic volumes and high collision rate create an undesirable environment for all users of the roadway (bicyclists, pedestrians, and autos) and adjacent businesses and residents. Multimodal facility gaps and stressful conditions diminish access to the vibrant Old Town Albuquerque area.

Figure ES-1: Regional Study Area Map

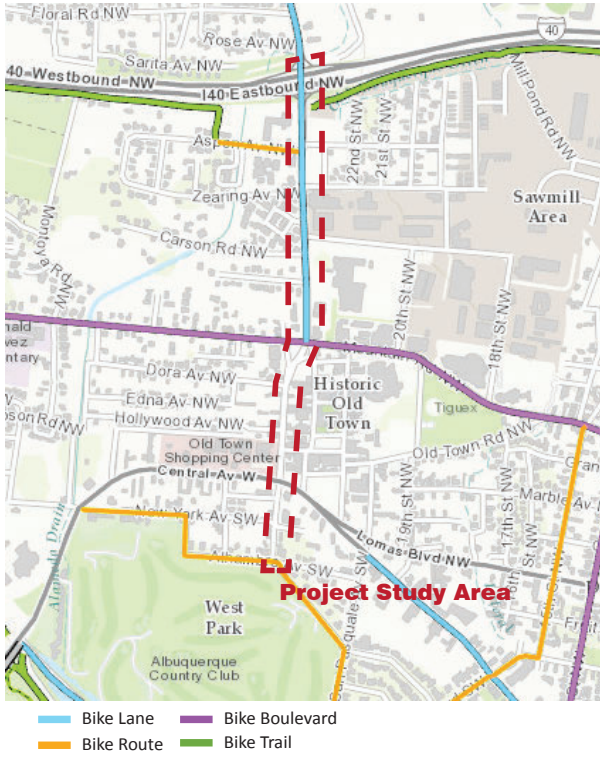
Local stakeholders and residents along the corridor are particularly concerned with pedestrian usability, citing unsafe walking conditions and a lack of pedestrian crossing opportunities along the corridor, which are particularly problematic given the commercial uses on both sides of Rio Grande Boulevard and the need for regional east-west bicycle and pedestrian connectivity. This is further exacerbated by the number of heavy vehicles accessing I-40 via Rio Grande Boulevard and the already-constrained curb-to-curb roadway width.

While much of the study area has bike lanes, there are two critical gaps in the bike network. The first is along the I-40 Trail that runs parallel to I-40; there is a gap to cross Rio Grande Boulevard as the trail ends on Aspen Avenue to the west and begins just south of the I-40 EB on-ramp. This gap is particularly problematic given that the trial's alignment is offset at Aspen Avenue (the trail connection is one block south of the

ramps, making crossing the corridor along the intended trail in either direction unsafe for pedestrians and bikers). The second gap exists to the south on Rio Grande Boulevard between Central Avenue and Mountain Road (a "Bike Boulevard"). There is also a need for enhanced crossing opportunities at the Mountain Road and Rio Grande Boulevard intersection to support safer and more continuous bike facilities. These bike facility gaps are illustrated in the City's bicycle map, excerpted in **Figure ES-2**.

The planned implementation of the Albuquerque Rapid Transit (ART) system along Central Avenue is anticipated to increase

Figure ES-2: Albuquerque Bicycle Facility Map



bicycle and pedestrian activity along Rio Grande Boulevard. In addition, modifications to Central Avenue as the result of that project may shift additional traffic to Rio Grande Boulevard south of Central Avenue. Improvements along Rio Grande Boulevard south of Central Avenue will ensure that a pedestrian and neighborhood friendly environment is maintained with those planned modifications.

Project Goals

The project seeks to identify implementable solutions that benefit all users. The study is focused on identifying solutions that:

- Promote safety and traffic calming along the corridor
- Improve walkability
- Improve bicycle circulation and connectivity
- Provide opportunities for placemaking

At the project's first community meeting (held in September 2015), attendees prioritized the needs of the corridor. The needs identified by the community are as follows:

- Improve sidewalks and the pedestrian environment
- Reduce traffic delays and congestion for drivers
- Reduce speeding and calm traffic

The most commonly expressed objective was the improvement of pedestrian facilities along the corridor.

Previous corridor studies dating back to 1989 have been conducted for Rio Grande Boulevard and were used as reference tools to help guide and develop the objectives and goals for this project. They were also used to provide a broader context on the land use changes that may occur along Rio Grande Boulevard in the future. Prior studies focused on developing a vision for the corridor to meet anticipated land use growth. In contrast, this study focuses on identifying feasible, implementable, and community-supported recommendations to improve multimodal safety and functionality of the roadway for all users–a complete street.

Baseline Conditions

The highest level of congestion in the corridor is currently experienced in the vicinity of the I-40 interchange ramp intersections and at Central Avenue. The I-40 eastbound ramp intersection currently operates at a deficient level of service E in both peak periods. In addition, the northbound left-turn lane to the I-40 westbound on-ramp is not long enough due to the close spacing of the two ramp intersections, resulting in queue spillback affecting movements on Rio Grande Boulevard. In the future (projected Year 2040 volumes), both ramp intersections as well as Central Avenue are projected to deteriorate to a deficient level of service in the future. Vehicles turning from Aspen Avenue to Rio Grande Boulevard experience congestion due to the intersection's proximity to the I-40 interchange ramps. Movements from both eastbound and westbound Aspen Avenue

to Rio Grande Boulevard are projected to be deficient in the future. This may present a future safety hazard as vehicles make turning movements without sufficient gaps in oncoming traffic.

The 85th percentile speed limit along Rio Grande Boulevard was observed to be 39 mph north of Bellamah Avenue. The posted speed limit along Rio Grande Boulevard north of Central Avenue is 35 miles per hour. Collision data was analyzed between 2009 and 2013 for the study corridor. There were a total of 222 collisions reported within that timeframe. Rear-end collisions were the most common collision type, accounting for approximately 37 percent of all collisions, with broadside and sideswipe collisions coming in second and third accounting for 20 percent and 11 percent, respectively. Rear-end collisions are generally associated with long vehicle queuing and speed issues. Broadside collisions are generally associated with unsafe turning movements. The most frequent locations for collisions reported along the corridor were at the Mountain Road and Central Avenue intersections with Rio Grande Boulevard, accounting for 24 percent and 21 percent of all collisions in the study area, respectively. Aspen Avenue and Bellamah came in third, accounting for approximately 12 percent of study area collisions each.

There were 11 collisions in the study area involving pedestrians or bicyclists, concentrated primarily at Bellamah Avenue, Central Avenue, and Aspen Avenue with four, three, and two collisions, respectively.

There are currently bike lanes along Rio Grande Boulevard from the I-40 ramps to Mountain Road. Mountain Road is currently designated a Bicycle Boulevard, providing enhanced corridor facilities for bike traffic. There are also future bike lanes proposed to be installed south of Mountain Road along Rio Grande Boulevard. The I-40 multi-use trail runs south and parallel to I-40 within the study area. There is currently a gap in the trail connection crossing Rio Grande Boulevard at Aspen Avenue that is considered in the assessments within the study. The existing bicycle network is shown back on **Figure ES-2**.

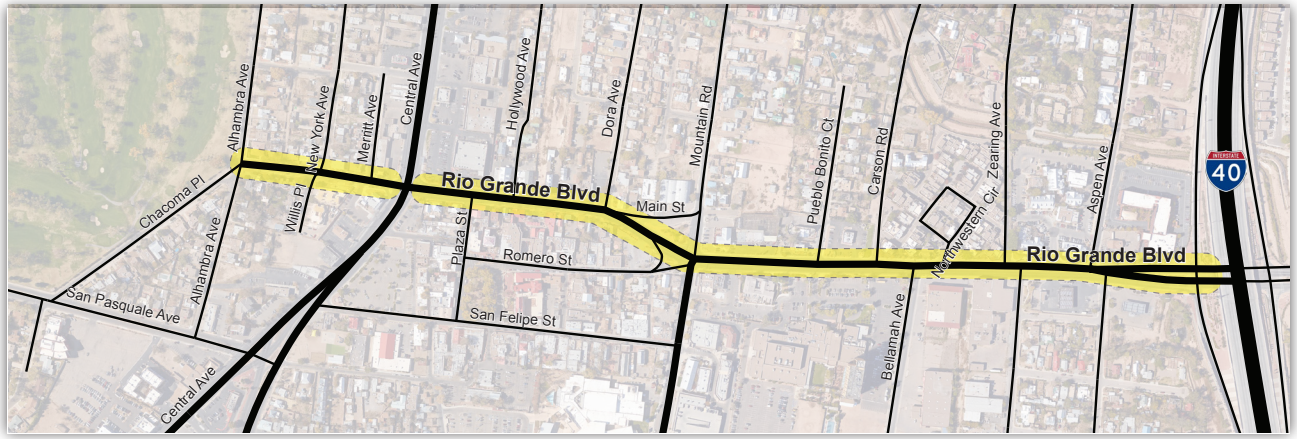
Rio Grande Boulevard contains sidewalks on both sides of the corridor for all extents of the roadway within the study area. Sidewalks in several segments of the corridor feel narrow due to the placement of utility poles, lights, and other obstructions within the walkway. The primary deficiency for pedestrian facilities are the lack of ample crossing opportunities along the corridor, resulting in many pedestrians crossing at unsafe mid-block locations. This is a particularly problematic issue for the areas of the corridor with more intensive residential and commercial development such as adjacent to the Old Town area near Central Avenue. The study area segment of Rio Grande Boulevard is designated as Moderate-High Regional Priority for regional pedestrian improvements by the Mid-Region Council of Governments (MRCOG).

The project study area is shown in **Figure ES-3**.

Improvement Alternatives

The Rio Grande Boulevard Complete Street Concept Plan project has identified a number of improvements along Rio Grande Boulevard and nearby streets to meet the goals and objectives of the community. These include improvements to enhance the

Figure ES-3: Project Study Area



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unique community context of Old Town, improve bikeability and walkability, calm traffic, and enhance connectivity.

The alignment of proposed improvements with project goals is identified below:

Promote safety and traffic calming along the corridor:

- Proposed cross-sections for Rio Grande Boulevard would narrow travel lanes, which has been shown to reduce vehicle speeds
- A roundabout at Mountain Road will serve to reduce vehicle speeds, lowering severe crash potential
- New channelization in the Aspen Avenue area will better direct vehicle traffic and reduce the potential for turn-related collisions
- New medians near Bellamah Avenue and Pueblo Bonito Court will serve to reduce the perceived width of the roadway, thereby reducing vehicle speeds
- New striping between Alhambra Avenue and Central Avenue and limited roadway narrowing may reduce vehicle speeds and calm traffic
- Reduction of the intersection skew and offset and provision all-way stop at Rio Grande Boulevard/Alhambra Avenue/Chacoma Place will reduce vehicle speeds and collision potential
- New speed humps on Alhambra Avenue to reduce vehicle speeds and cut-through traffic
- New channelization at the San Pasquale Avenue/Chacoma Place intersection will reduce vehicle speeds and the potential for turn-related collisions

Improve walkability:

- A well-signed crosswalk with a median refuge at Aspen Avenue will provide a new way to cross Rio Grande Boulevard
- A new crosswalk on the south leg of the Rio Grande Boulevard/Bellamah Avenue intersection with a median refuge will provide a new, safer way to cross Rio Grande Boulevard
- Proposed cross-sections for Rio Grande Boulevard between Mountain Road and I-40 include wider sidewalks with a landscape buffer for a better pedestrian environment
- Relocation of utilities out of the pedestrian way throughout the corridor will increase the effective width of sidewalks
- Bulbouts at Bellamah Avenue, Mountain Road, Hollywood Avenue, New York Avenue/Willis Place, and Alhambra Avenue will reduce pedestrian crossing distances and increase pedestrian visibility, improving safety
- A roundabout at Mountain Road will reduce vehicle speeds through the intersection and shorten pedestrian crossing distances
- A new pedestrian crossing at Hollywood Avenue, accompanied by enhanced pavement markings/pavers and a rapid rectangular flashing beacon will provide an additional opportunity to cross Rio Grande Boulevard and may reduce jaywalking
- New pedestrian facilities, including pedestrian ramps and walkways, on the south side of Alhambra Avenue at Rio Grande Boulevard will improve accessibility
- Improved pedestrian-scale lighting throughout the corridor will improve pedestrian comfort and safety
- A diverging diamond interchange or widening of the sidewalks beneath I-40 will enhance the pedestrian environment and improve safety

Improve bicycle circulation and connectivity:

- A new crossing of Rio Grande Boulevard, combined with a new one-way cycle track between Aspen Avenue and the I-40 Trail will close a critical gap in the regional bicycle network
- Dashed green paint in conflict areas will increase yielding to cyclists and reduce vehicle intrusion into bicycle lanes
- A buffered bike lane between Aspen Avenue and Mountain Road will improve bicycle comfort and reduce vehicle intrusion into the bicycle lanes
- Buffered bike lanes and a bike slot on Romero Street and San Felipe Street will provide a safer bicycle connection between the Mountain Road Bike Boulevard, bike lanes on Rio Grande Boulevard north of Mountain Road, and Old Town Albuquerque
- Modifications to the Main Street configuration at Mountain Road will reduce vehicular conflicts on both Mountain Road and Rio Grande Boulevard
- A roundabout at Mountain Road will reduce vehicle speeds through the intersection
- A diverging diamond interchange will provide wider bicycle facilities with fewer vehicle conflicts through the I-40 interchange
- Connectivity improvements across the I-40 interchange and gap closure between Aspen Avenue and the I-40 Trail will improve connections to the Alameda Drain trail project
- New shared use paths and a new bicycle crossing near the intersection of Central Avenue/San Pasquale Avenue will improve north-south bicycle connectivity across Central Avenue
- Designate Alhambra Avenue as a bicycle route between Rio Grande Boulevard and San Pasquale Avenue

Provide opportunities for placemaking:

- Proposed cross-sections for Rio Grande Boulevard between Mountain Road and Aspen Avenue provide new opportunities for landscaping along the corridor
- Replace pedestrian-scale lighting and extend it throughout the corridor, improving lighting and establishing a consistent feel throughout the corridor
- New landscaping throughout the corridor adjacent to sidewalks provides an opportunity to enhance the corridor aesthetic
- New wayfinding and signage locations throughout the corridor and upgrade existing signage where inconsistent, providing an opportunity to create a consistent theme and corridor feel
- New median islands at Bellamah Avenue and Pueblo Bonito Court provide an opportunity for entryway signage, landscaping, wayfinding, and extension of the Old Town community theme across Rio Grande Boulevard
- Modifications to the Main Street/Mountain Road/Rio Grande Boulevard configuration will include opportunities to enhance access to the Old Town Albuquerque statue and increase the functionality and desirability of the Old Town Founder and Gateway Park

Several locations had multiple improvements alternatives proposed. At some locations, a preferred alternative has been identified through technical analysis, community feedback, and stakeholder input. At other locations, further design development or stakeholder coordination will be required to identify a preferred alternative. **Table ES-1** summarizes the preferred alternatives or identifies locations where further work will be required to identify a preferred solution. Full-page graphics depicting the preferred improvements are included in **Appendix A**.

Table ES-1: Summary of Preferred Improvements

Location	Summary of Improvements	Cost	Notes for Implementation
I-40 Interchange	Diverging diamond interchange OR improvements to existing sidewalks. Further analysis required	TBD	Requires further traffic analysis, design development, analysis of existing interchange engineering, and coordination with New Mexico DOT
Aspen Avenue	Mid-block crossing, left-turn channelization, cycle-track, and sidewalk improvements (3 alternatives)	$1.05M - $1.29M	May require further coordination with businesses on driveway access. Will require utility coordination for pole relocation.
Cross-Section between Aspen Avenue and Mountain Road	Narrow travel lanes, buffered bike lanes, dashed green bike lanes at conflict areas, and landscape strip to buffer sidewalks, relocation of utilities to reduce obstructions, lighting, signage and wayfinding	Phase 1 - $90,000 Ultimate - $2.46M	Buffered bike lanes require striping modification only and can be implemented in a near-term phase. Landscape strip and other landscape improvements will require right-of-way from adjacent property owners and may be implemented in the longer term
Bellamah Avenue	Sidewalk improvements, median island, new crosswalk, bulbouts	$480,000	Will require coordination with adjacent property owners on landscaping improvements
Pueblo Bonito	Median island	$75,000	Will require coordination with adjacent property owners on landscaping improvements
Mountain Road	Roundabout with accompanying channelization and shared use paths, closure of Main Street and modification to property access Alternative: Maintain signal but provide bicycle and pedestrian striping improvements, bulbouts, and modification of Main Street configuration	$2.69M Alternative: $1.33M	Will require coordination with adjacent property owners and some right-of-way acquisition. No right-of-way required for signal alternative.
Cross-Section between Mountain Road and Hollywood Avenue	Narrow travel lanes, provide bike lanes with dashed green paint at conflict areas, shift curb location, modify landscaping and lighting, relocation of utilities to reduce obstructions, lighting, signage, and wayfinding	Phase 1 - $470,000 Ultimate - $1.75M	Modifications to the curb to provide bike lanes are likely to be a longer-term improvement. Relocation of utilities, improved lighting and wayfinding can proceed in the near-term. Near-term improvements require coordination with utility companies
Hollywood Avenue	New crosswalk, RRFB, and pavement improvements	$180,000	
Striping between Central Avenue and Alhambra Avenue	Removal of centerline stripe, addition of parking stripe, bulbouts, crosswalk improvements	$300,000	
Alhambra Avenue/Chacoma Place	Re-alignment of Chacoma Place, conversion to an all-way stop control, addition of bulbouts and pedestrian facilities (3 alternatives)	$120,000 - $580,000	May require right-of-way acquisition and coordination with adjacent property owner. Alternatives do not require right-of-way.
San Pasquale Avenue/ Chacoma Place	Median island enhancements, channelization, and bulbouts (2 alternatives)	$65,000 - $120,000	Coordination with nearby property owners on circulation and on-street parking modifications
North-South Bike Improvements	Buffered bike lanes on Romero Street and San Felipe Street AND/OR shared-use path and bike crossing improvements at Central Avenue/San Pasquale Avenue	Up to $360,000	Requires further coordination with the bicycle community and Old Town business owners to assess desirability of solutions

Costs are in current year dollars and include a 30% contingency

Outreach

Stakeholder and community input was a key factor in identifying and evaluating the improvements included in this project. Incorporating feedback from the users of the street, adjacent property owners, and nearby residents was fundamental to make sure the developed improvements met the project purpose.

The first stakeholder involvement opportunity was a stakeholder charrette. The stakeholder charrette was held on Wednesday, September 2, 2015 at 3:30 PM at the Hotel Albuquerque at Old Town. Invited parties included residents, business owners, and property owners along the Rio Grande Boulevard corridor. The purpose of the charrette was to introduce the project to the stakeholders, provide an idea of the type of improvements that will be considered as part of the project, and obtain stakeholder feedback on the corridor's greatest needs and specific areas for improvement. Approximately 20 stakeholders attended the meeting. Participants provided the following feedback on corridor priorities:

- **First priority:** Improve sidewalks and pedestrian environment
- **Second priority:** TIE: Reduce speeding and calm traffic AND Reduce traffic delays and congestion for drivers

Additional feedback was recorded for the project team's use. Common themes were concerns for:

- Lack of walkability of the corridor
- Safety of pedestrians at roadway crossings (particularly given the amount of truck traffic)
- General increases in traffic volume
- High speeds on the corridor
- Propensity of pedestrians to illegally cross the corridor at mid-block locations

The quality of corridor sidewalks and frontages were also noted as less than attractive for many users in terms of comfortability and aesthetic quality. Members also indicated the need for more and better signage and to beautify the corridor to create a gateway to Old Town.

Additional feedback was received after the meeting via emails to City staff. Emails expressed additional concerns about the Rio Grande Boulevard/Mountain Road intersection, the comfort of bicycle facilities along the roadway, and narrow sidewalks along the roadway.

The second formal stakeholder involvement element was a community meeting. The community meeting was an opportunity to present the initial improvement alternatives and obtain direct feedback on those alternatives from attendees. The second stakeholder meeting was held on Thursday, March 10, 2016 from 6:00 PM to 7:30 PM at the Albuquerque/ Bernalillo County Government Center Building in the City of Albuquerque. Approximately 22 people attended the meeting.

Attendees reviewed each of the proposed alternatives, which were displayed on boards at the back of the room. Project team members were available to answer questions about the improvements and the study in general. Written feedback provided at the meeting and in follow-up emails was documented and utilized to refine the alternatives and select a preferred alternative at locations where alternatives were provided.

City staff also met with business owners in the Aspen Avenue area to review the improvement alternatives and obtain feedback on the proposed changes to driveway access.

Next Steps

All improvements will require further design development and refinement. The improvements have thus far been developed to a conceptual-level only, based on aerial photography and field observations. Further design development, including topographical survey and utility investigation, will allow for refinement of the cost estimates and may result in modifications to the improvements. Additional stakeholder outreach is recommended for some alternatives to get further input on design details or to select between improvement alternatives.

Funding will need to be identified to continue design development and proceed to implementation for the identified improvements.

1. INTRODUCTION

Rio Grande Boulevard serves as the primary gateway to the major tourism and shopping district of Old Town Albuquerque. It also provides a connection to the regional highway network (I-40) and the regional bikeway network (Alameda Drain Trail and I-40 Trail). The corridor is lined with a diverse set of visitor-serving, commercial, historical, industrial, and residential uses. While it serves a diverse set of purposes for a wide cross-section of users, it was designed as a primarily auto-oriented thoroughfare. This project seeks to identify implementable infrastructure improvements that make the corridor safe, accessible, and desirable for users of all modes.

A study area vicinity map is shown in **Figure 1-1**.

Figure 1-1: Regional Study Area Map

1.1 Corridor Description

Rio Grande Boulevard serves as an Urban Minor Arterial, extending approximately eight miles between Alhambra Avenue (south of Central Avenue) and Alameda Boulevard. The section of Rio Grande Boulevard included in this corridor study represents the southernmost one mile section, between I-40 and Alhambra Avenue. This segment is a heavily utilized connection between I-40, Central Avenue, and Old Town Albuquerque.

Segments of Rio Grande Boulevard include designated bike lanes and provide a key bikeway connection between Mountain Road (a City-designated "Bike Boulevard") and the I-40 Trail. High levels of pedestrian activity are associated with the historic and retail uses along the corridor as well as frequent transit service along both Rio Grande Boulevard and Central Avenue. Multimodal circulation demands along Rio Grande Boulevard are expected to grow with pending and approved development projects along the northern portion of the project study area. In addition, enhancing the functionality of Rio Grande Boulevard as the connecting gateway to Old Town will likely cause increases in both bike and pedestrian activity along the corridor.

1.2 Project Need

The study area serves in excess of 25,000 vehicles per day, resulting in congestion during the morning and afternoon peak periods. Morning congestion is heaviest approaching Central Avenue, while evening congestion is heaviest near the I-40 interchange. Rio Grande Boulevard is utilized as a freeway access for the local community as well as a cut-through route for traffic entering or leaving Downtown Albuquerque via Central Avenue. The collision rate on Rio Grande Boulevard exceeds the statewide average, with a number of collisions involving bicyclists and pedestrians. The heavy traffic volumes and high collision rate creates an undesirable environment for bicyclists and pedestrians and diminishes multimodal access to the vibrant Old Town Albuquerque area.

Local stakeholders and residents along the corridor are particularly concerned with pedestrian usability, citing unsafe walking conditions and a lack of pedestrian crossing opportunities along the corridor, which are particularly problematic given the commercial uses on both sides of Rio Grande Boulevard and the need for regional east-west bicycle and pedestrian connectivity. This is further exacerbated by the number of heavy vehicles accessing I-40 via Rio Grande Boulevard and the already-constrained curb-to-curb roadway width.

While much of the study area has bike lanes, there are two critical gaps in the bike network. The first is along the I-40 Trail that runs parallel to I-40; there is a gap to cross Rio Grande Boulevard as the trail ends on Aspen Avenue to the west and begins just south of the I-40 EB on-ramp. This gap is particularly problematic given that the trail's alignment is off-set at Aspen Avenue (the trail connection is one block south of the ramps making crossing the corridor along the intended trail in either direction unsafe for pedestrians and bikers). The second gap exists to the south in connecting Old Town to Mountain Road ("Bike Boulevard") and Rio Grande Boulevard. There is a need for enhanced crossing opportunities at the Mountain Road and Rio Grande Boulevard intersection to support safer and more continuous bike facilities.

The planned implementation of the Albuquerque Rapid Transit (ART) system along Central Avenue is anticipated to increase bicycle and pedestrian activity along Rio Grande Boulevard. In addition, modifications to Central Avenue as the result of that

project may shift additional traffic to Rio Grande Boulevard south of Central Avenue. Improvements along Rio Grande Boulevard south of Central Avenue will ensure that a pedestrian- and neighborhood-friendly environment is maintained with those planned modifications.

1.3 Project Goals

The project seeks to identify implementable solutions that benefit all users. The study is focused on identifying solutions that:

- Promote safety and traffic calming along the corridor
- Improve walkability
- Improve bicycle circulation and connectivity
- Provide opportunities for placemaking

At the project's first community meeting (held in September 2015), attendees prioritized the needs of the corridor. The needs identified by the community are as follows:

- Improve sidewalks and the pedestrian environment
- Reduce traffic delays and congestion for drivers
- Reduce speeding and calm traffic

The most commonly expressed objective was the improvement of pedestrian facilities along the corridor.

1.4 Planning Context

Previous corridor studies dating back to 1989 have been conducted for Rio Grande Boulevard and were used as a reference tool to help guide and develop the objectives and goals for this current project. They were also used to provide a broader context on the land use changes that may occur along Rio Grande Boulevard in the future. Prior studies focused on developing a vision for the corridor to meet anticipated land use growth. In contrast, this study focuses on identifying feasible, implementable, and community-supported recommendations to improve multimodal safety and functionality of the roadway for all users–a complete street.

The following plans were reviewed as part of this study:

- ***Rio Grande Corridor Study***, prepared by the City of Albuquerque, February 1989.
- ***Rio Grande Corridor Master Plan***, prepared for the City of Albuquerque, Dover, Kohl & Partners, Hall Planning & Engineering, Wilson & Company, October 8, 2010.
- ***Rio Grande Boulevard Corridor Plan: Transportation Amendments***, prepared by the City of Albuquerque, January 2013.
- ***Sawmill/Wells Park Sector Development Plan: Transportation and Design Amendments***, prepared for the City of Albuquerque, Council Services Department, August 31, 2011.

The City of Albuquerque has also adopted several policies within the Albuquerque/Bernalillo County Comprehensive Plan that were referenced in this study for consistency and guidance for the type and quality of facilities recommended. The following policy implementation techniques were particularly relevant in the development of recommendations from this study:

Policy A, Technique 1: Provide adequate right-of-way and street capacity to meet mobility and access roads

Policy A, Technique 2: Balance the street system by encouraging bicycling, walking, and use of mass transit in between the Activity Centers

Policy G, Technique 2: Conduct pedestrian studies in areas of heavy pedestrian activity to identify improvements needed for safety, efficiency, capacity, and amenities

Policy H, Technique 6: Provide separation for bikeways and pedestrian ways where feasible

Policy I, Technique 2: Certify project consistency with trail plans

Policy K, Technique 1: Improve signalization and median control; consolidate and/or limit access; improve pavement quality, intersection capacity, striping, and channelization of existing arterials; and other Transportation System Management (TSM) programs determined effective

Policy Q, Technique 1: Provide adequate street capacity and right-of-way to meet mobility and access need

Policy Q, Technique 2: Improve the effectiveness of the existing street system by encouraging bicycling, walking, and use of mass transit in between the Activity Centers

This study provides context to potential improvements, particularly for bicyclists and pedestrians, which will enhance the vibrancy and intended multimodal character of the area.

2. PROJECT METHODOLOGY

2.1 Project Process

This project was conducted following the general process shown in **Figure 2-1**. Technical analysis and community input were used to identify the greatest needs and then identify a recommended solution.

2.2 Study Area

The entire portion of the study area is located within the City of Albuquerque. New Mexico DOT operates the interchange ramp terminal intersections at I-40.

The study area was broken into two focus areas. The North Area contained the stretch of Rio Grande Boulevard from the I-40 ramps to Central Avenue. The South Area contained the remaining segment of Rio Grande Boulevard to the south from Central Avenue to Alhambra Avenue. In conjunction with this segment of Rio Grande Boulevard, potential circulation impacts were also considered at the triangle area consisting of the following intersections:

- Alhambra Avenue and Rio Grande Boulevard
- Chacoma Place and Alhambra Avenue
- San Pasquale Avenue and Chacoma Place
- Alhambra Avenue and San Pasquale Avenue

The study area is shown in **Figure 2-2**.

2.3 Data Collection

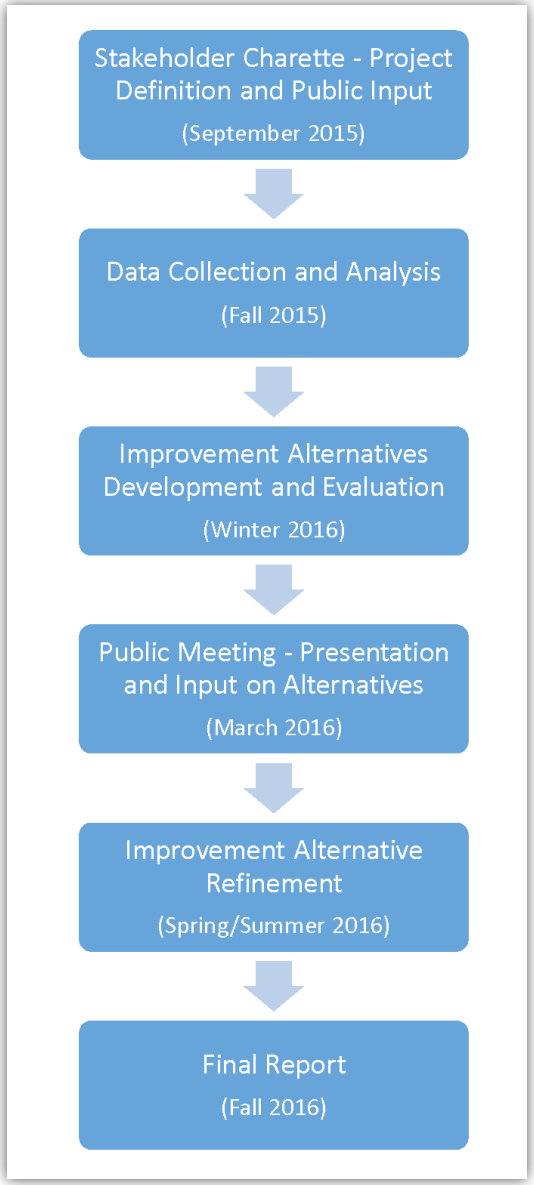
Auto, bike, and pedestrian counts for the corridor and study intersections along Rio Grande Boulevard were collected in November and December of 2015. Additional traffic data was collected in May of 2016 to expand the study area to fully include the triangle area at the southern extent and the I-40 interchange ramps at the northern extent. Speed survey data was collected along Rio Grande Boulevard north of Bellamah Avenue in December 2015. Raw intersection turning movement counts and speed survey data can be found in **Appendix B**.

Signal timing parameters were obtained from the City for incorporation within the analysis models.

Future traffic volumes were projected by using recent runs of the MRCOG Travel Forecast Model and provided by MRCOG staff. Model plots of the Base Year (2012) and Long Term Year (2040) were utilized.

Kimley-Horn performed site visits to observe corridor conditions and document existing intersection and roadway geometrics in both September 2015 and March 2016.

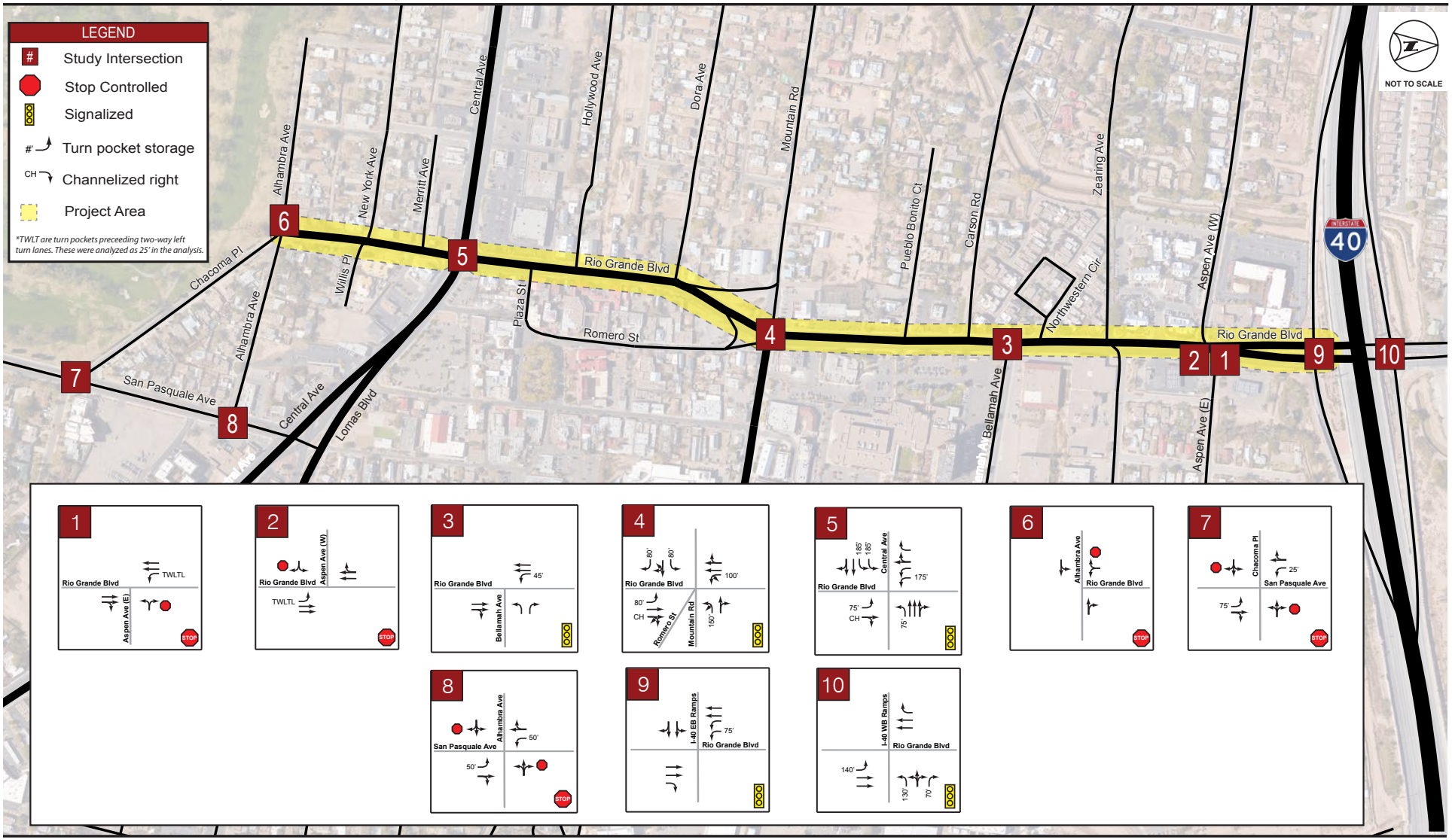
Figure 2-1: Project Process



RIO GRANDE BOULEVARD Complete Street

Concept Plan

Figure 2-2: Project Study Area



3. BASELINE CONDITIONS

Baseline conditions represents conditions without any project improvements. It is important to establish baseline conditions for the existing scenario and future scenarios to provide context on the efficiency or general effects of the proposed improvement alternatives. For this study, two baseline scenarios were considered: Existing Baseline Conditions using existing traffic volumes, and Future Baseline Conditions using projected traffic growth volumes.

Existing hourly traffic patterns can be seen in **Figure 3-1.** The existing and projected long-term traffic volumes can be seen in **Figure 3-2**.

3.1 Traffic Congestion

Using SYNCHRO software, existing and future intersection delay and level of service (LOS), corridor travel times, and anticipated queuing at intersections were analyzed for the AM and PM peak hours. Intersection delay and level of service results can be seen in **Table 3-1** and **Figure 3-5**.

Table Notes:

- Intersections operating at level of service E or F are highlighted in bold

- SSSC = Side-street stop-controlled intersection, AWSC = All-way stop-controlled intersection, Signal = Signalized intersection

- Intersection delay and LOS calculated with Highway Capacity Manual (HCM) 2010 methodology using SYNCHRO software.

- For side-street stop-controlled (SSSC) intersections the worst approach delay and LOS is reported. For all other intersections, the average delay is reported.

Figure 3-1: Hourly Traffic Volumes on Rio Grande Boulevard

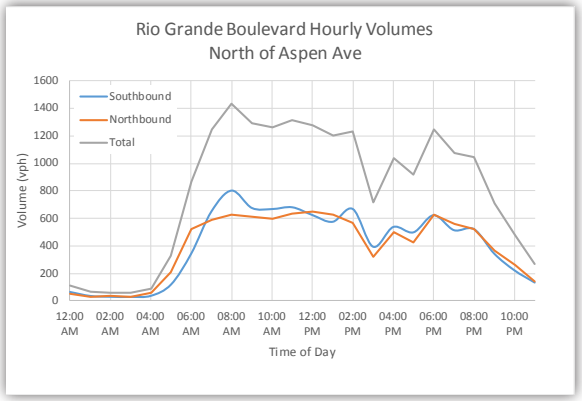


Figure 3-2: Hourly Traffic Volumes on Rio Grande Boulevard

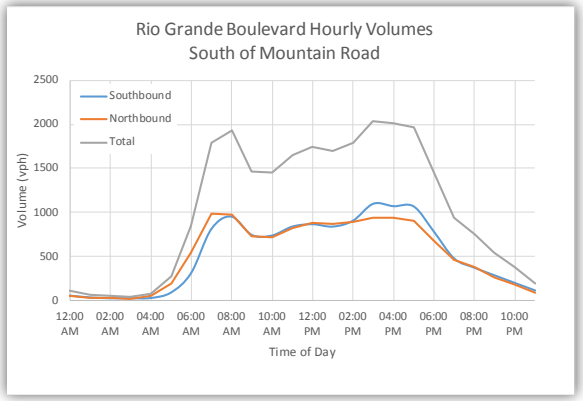


Table 3-1: Baseline Intersection Delay and Level of Service

Int #	Intersection	Control	Existing Baseline				Long-Term Baseline			
			AM Peak		PM Peak		AM Peak		PM Peak	
			LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)
1	Aspen Ave (E) / Rio Grande Blvd	SSSC	C	18.7	D	26.1	C	20.3	**E**	**38.8**
2	Aspen Ave (W) / Rio Grande Blvd	SSSC	D	31.8	D	25.0	F	56.4	D	31.2
3	Bellamah Ave / Rio Grande Blvd	Signal	C	26.7	B	18.4	C	32.0	C	22.0
4	Mountain Rd / Rio Grande Blvd	Signal	C	25.7	C	22.3	C	30.8	C	32.5
5	Central Ave / Rio Grande Blvd	Signal	C	33.6	C	30.7	C	32.4	**E**	**70.9**
6	Alhambra Ave / Rio Grande Blvd	SSSC	B	10.0	A	9.4	B	10.0	A	9.1
7	San Pasquale Ave / Chacoma Pl	AWSC	A	7.7	A	8.1	A	7.7	A	8.4
8	San Pasquale Ave / Alhambra Ave	SSSC	A	9.6	B	10.9	A	9.3	B	11.0
9	I-40 EB Ramps / Rio Grande Blvd	Signal	**E**	**58.5**	**E**	**58.9**	**F**	**81.4**	**F**	**156.0**
10	I-40 WB Ramps / Rio Grande Blvd	Signal	C	24.7	D	41.1	**E**	**59.2**	D	38.2

As shown in the table, the greatest delay is experienced in the vicinity of the I-40 interchange ramp intersections and at Central Avenue.

Spot speed data was also collected along the corridor for a 24-hour period to assess vehicle speeds relative to the posted speed limit. The 85th percentile speed is typically used in speed analyses when determining adjustments to the legal posted speed limit. The 85th percentile speed limit along Rio Grande Boulevard was observed to be 39 mph north of Bellamah Avenue. The posted speed limit along Rio Grande Boulevard north of Central Avenue is 35 miles per hour. The aggregated data can be seen in **Figure 3-3.**

3.1.1 Albuquerque Little Theater Effects – San Pasquale Avenue and Central Avenue Modifications

The Albuquerque Little Theater is located east of San Pasquale Avenue and south of Central Avenue on the edge of the southern extent of the study area. The theater currently has one primary driveway and one shared driveway along San Pasquale Avenue. The theater was considered within this study given its proximity to the study area and the changes to vehicle circulation that could result after the planned modifications at the San Pasquale Avenue and Central Avenue intersection are constructed. In conjunction with the ART project, the northbound left-turn movement at the intersection would be precluded, which would result in traffic being diverted to Rio Grande Boulevard via either Alhambra Avenue or Chacoma Place. The modified intersection is shown in **Figure 3-4**.

The theater currently has the following operational characteristics:

- Theater capacity of 500 seats
- Seven major productions per year that run for 3-4 weeks per production
- Typically shows range from 350-400 attendees and start at 7:30 PM with running times of 2-3 hours
- Attendees come from all over the City of Albuquerque

The theater does not currently have a current traffic management plan but does employ a guard to help direct traffic into and out of shows to San Pasquale Avenue. There is also no tentative plan in place for when the modifications are made at Central Avenue.

Given the theater's characteristics, it is not anticipated that the theater will have any measurable effects to the project study area during peak hours after the diversion. This is justified as the theater operates outside of the typical AM and PM peak hours where traffic volumes along the corridor are the highest. The traffic generated from typical theater show is less than the traffic volumes of the analyzed peak hours.

Figure 3-3: Corridor Spot Speed Data

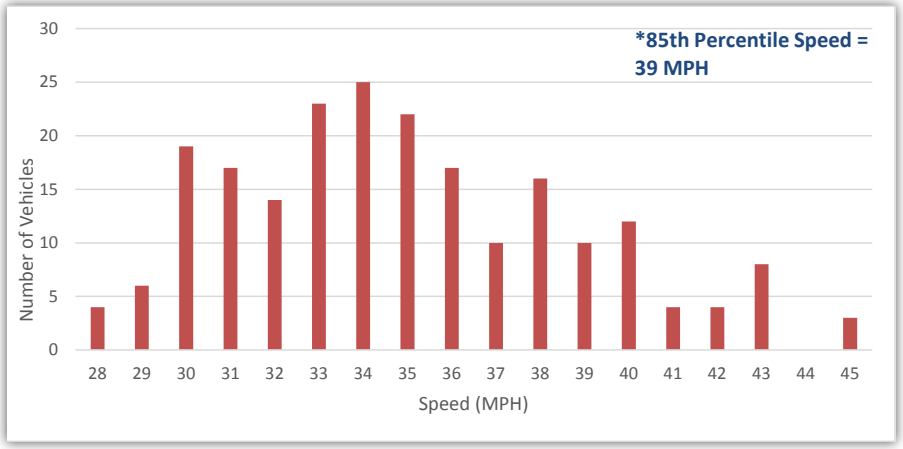


Figure 3-4: Planned San Pasquale Ave / Central Ave Intersection Improvements

Source: ABQRide Construction Plans, 7/18/16 (HDR)

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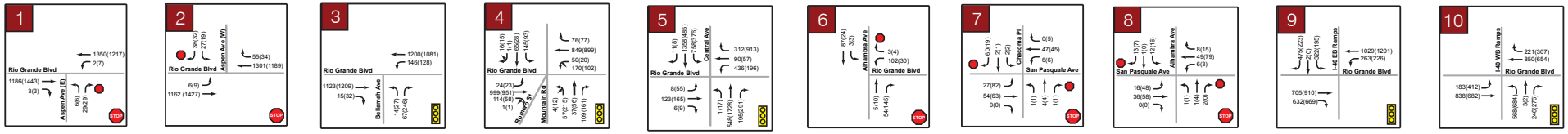
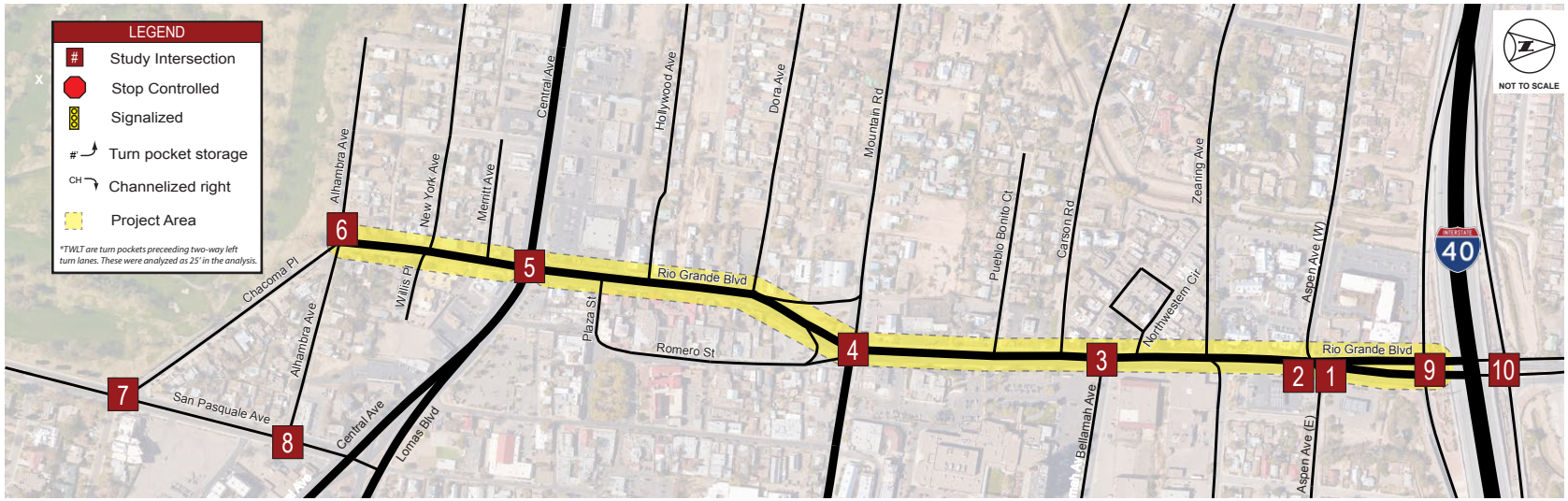
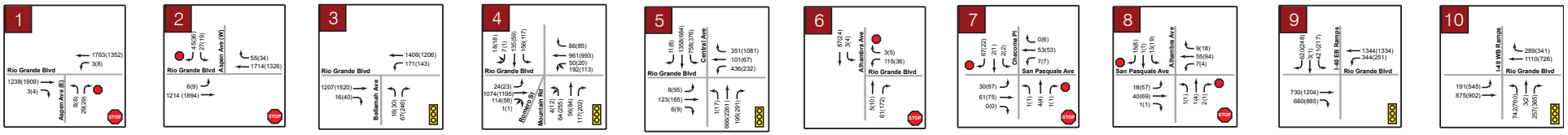
Figure 3-5: Existing and Future Year 2040 Intersection Turning Movement Volumes

Existing Turning Movement Volumes





Future Year 2040 Turning Movement Volumes



3.2 Collision History

The City of Albuquerque tracks collisions along its roadways. For this study, collision data was analyzed between 2009 and 2013 for the study corridor. There were a total of 222 collisions reported within that timeframe. It was found that rear-end collisions were the most common collision type, accounting for approximately 37 percent of all collisions, with broadside and sideswipe collisions coming in second and third accounting for 20 percent and 11 percent, respectively. Rear-end collisions are generally associated with long vehicle queuing and speed issues. Broadside collisions are generally associated with unsafe turning movements. The most frequent location for collisions reported along the corridor were at the Mountain Road and Central Avenue intersections with Rio Grande Boulevard, accounting for 24 percent and 21 percent of all collisions in the study area, respectively. Aspen Avenue and Bellamah came in third, accounting for approximately 12 percent of study area collisions each.

There were 11 collisions in the study area involving pedestrians or bicyclists, concentrated primarily at Bellamah Avenue, Central Avenue, and Aspen Avenue with four, three, and two collisions, respectively.

A map of the collision history of the study corridor can be seen in **Figure 3-6**.

3.3 Bicycle and Pedestrian Circulation

There are currently bike lanes along Rio Grande Boulevard from the I-40 ramps to Mountain Road. Mountain Road is currently designated a Bicycle Boulevard providing enhanced corridor facilities for bike traffic. There are also future bike lanes proposed to be installed south of Mountain Road along Rio Grande Boulevard. The I-40 multi-use trail runs south and parallel to I-40 within the study area. There is currently a gap in the trail connection crossing Rio Grande Boulevard at Aspen Avenue that is considered by study assessments.

Current bicycle activity patterns in the study area is depicted in **Figure 3-7** and the City's bicycle network in this area is shown in **Figure 3-8**.

Rio Grande Boulevard contains sidewalks on both sides of the corridor for all extents of the roadway within the study area. Sidewalks in several segments of the corridor feel narrow due to the placement of utility poles, lights, and other obstructions within the walkway. The primary deficiency for pedestrian facilities are the lack of ample crossing opportunities along the corridor, resulting in many pedestrians crossing at unsafe mid-block locations. This is a particularly problematic issue for the areas of the corridor with more intensive residential and commercial development such as adjacent to the Old Town area near Central Avenue. The study area segment of Rio Grande Boulevard is designated as Moderate-High Regional Priority for regional pedestrian improvements by MRCOG.

City of Albuquerque Transit Route 66

3.4 Transit

Frequent mid-block crossing activity between Central Avenue and Hollywood Avenue

The City of Albuquerque Transit Department operates ABQ Ride bus transit service through the project study area. Route 36: 12th Street/ Rio Grande operates along Rio Grande Boulevard between Central Avenue and north of I-40, providing service in a big loop along Rio Grande Boulevard into Downtown Albuquerque. The route forms a loop, running in the southbound direction only within the corridor at approximately 60-minute headways during the weekdays and on Saturday. The route operates from 6:56 AM to 6:48 PM during the week and 8:22 AM to 6:05 PM on Saturday.

Rapid Ride Blue Line (Route 790) operates in both directions along Rio Grande Boulevard between I-40 and Central Avenue, providing service between the Northwest Transit Center Park-and-Ride and University of New Mexico. It operates at roughly 10-20 minute headways during the weekday peak periods, with service between 5:19 AM and 9:46 PM during the week and 6:53 AM and 8:31 PM on Saturday. Rapid Ride routes have fewer stops, utilize specially branded articulated buses, and have branded upgraded stops. Additional features include onboard WiFi, additional bike racks, and real-time arrival information. There are no Rapid Ride stops along Rio Grande Boulevard; however, a stop is located on Central Avenue at the Rio Grande Boulevard intersection (shown at left).

Figure 3-6: Corridor Collision History (2009-2013)

Figure 3-7: Current Bicycle Activity Levels in Project Corridor

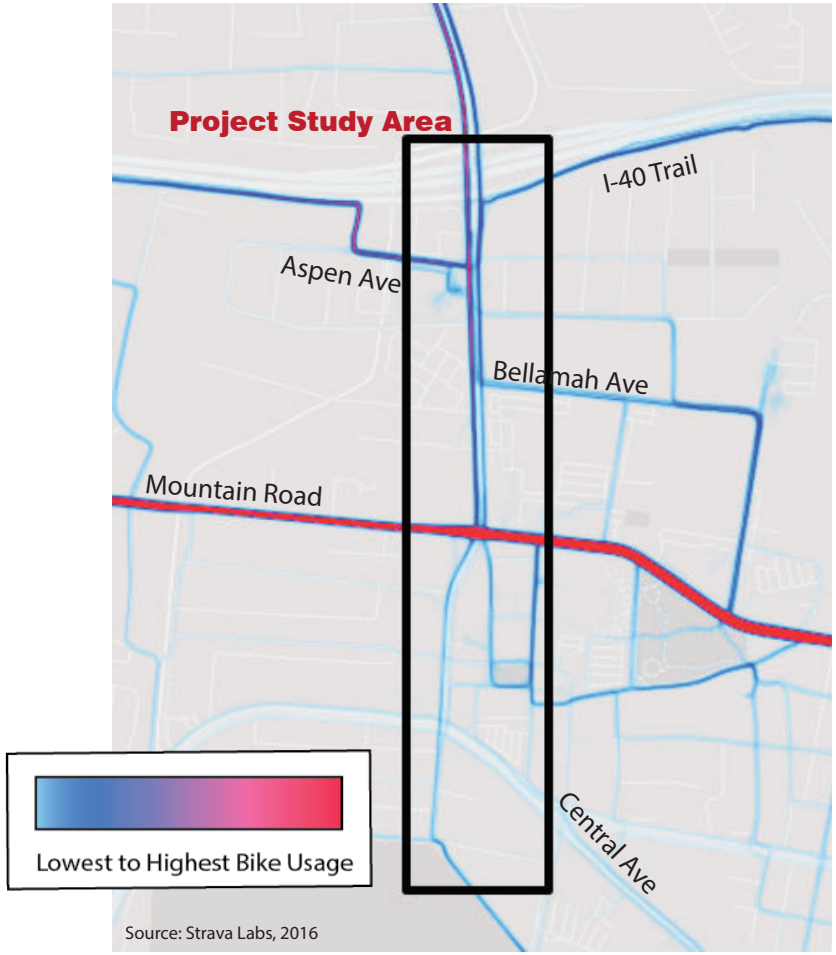
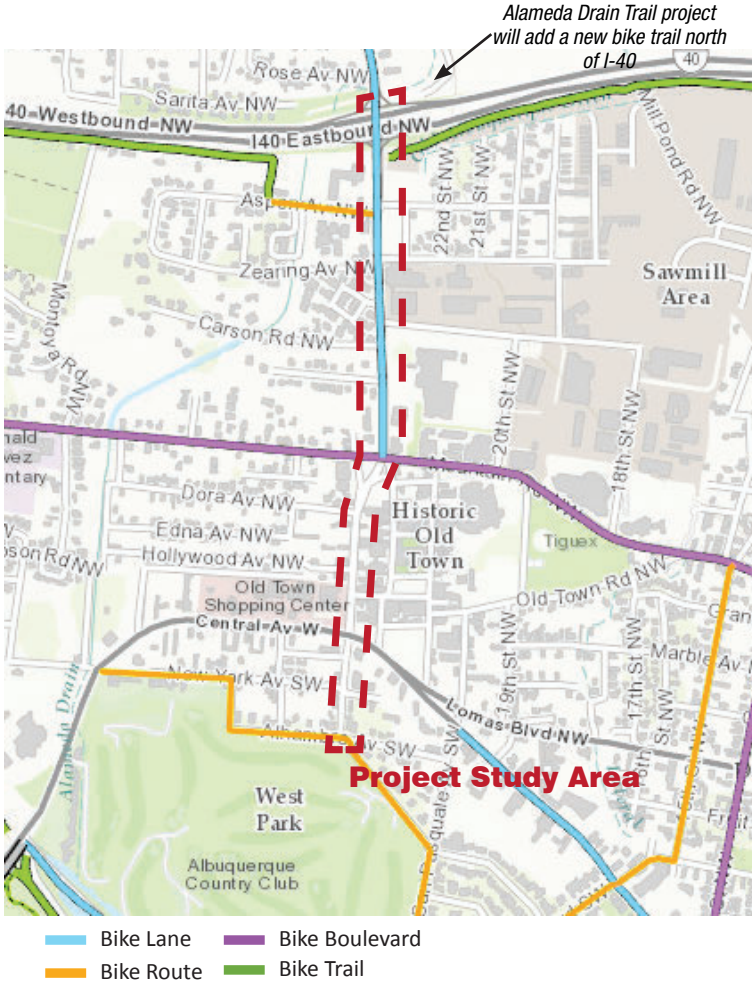


Figure 3-8: Albuquerque Bicycle Facility Map



Transit routes 66 and 766 operate along Central Avenue. Route 66 operates along Central Avenue between Wenonah Ave and the Unser Boulevard Park-and-Ride facilities. The route operates bi-directionally from 5:57 AM to 12:22 AM around the Rio Grande Boulevard area with approximately 15-minute headways during the weekdays.

Rapid Ride Red Line (Route 766) operates between the Unser Boulevard and Uptown Park-and-Ride facilities through Downtown Albuquerque along Central Expressway and Louisiana Boulevard. The route operates bi-directionally from 5:45 AM to 9:15 PM around the Rio Grande Boulevard area with approximately 20-minute headways. The Rapid Ride Red Line alignment forms the basis of the planned Bus Rapid Transit (BRT) service (ART). Implementation of ART will include dedicated transit lanes on portions of Central Avenue, including in the vicinity of Rio Grande Boulevard.

The I-40 Trail west of Rio Grande Boulevard

3.5 Wayfinding, Signage, and Lighting

There is currently a wide variety of wayfinding, signage, and lighting in the corridor. Segments have pedestrian-scale lighting, but it is not continuous throughout the corridor, particularly between Mountain Road and I-40. A variety of wayfinding is provided along the corridor, pointing towards Old Town, museums along Mountain Road, and various uses along the corridor. Roadway streetlights are provided along the full length of the roadway north of Central Avenue. Signage and lighting poles are often placed in the middle of the sidewalk, limiting the clear width of the walkway. Benches are provided in a couple of select locations near Old Town.

3.6 Land Uses

Rio Grande Boulevard contains a variety of land uses along the extents of the study area. The area between the I-40 ramps and Mountain Road is primarily retail with residential uses accessed via local and collector roadways that intersect Rio Grande Boulevard. The retail uses generally have direct driveway access onto Rio Grande Boulevard. Within the Aspen Avenue area, a new retail center, including a Starbucks and Burger King, was constructed while this project was ongoing. Across the street from the new retail center is a Best Western Hotel and an auto repair shop. Also located in this area is the Hotel Albuquerque at Old Town, which includes 188 hotel rooms and a conference center. A new hotel, Hotel Chaco, is being constructed along Bellamah east of Rio Grande Boulevard.

The Old Town Albuquerque area is located southeast of the Rio Grande Boulevard and Mountain Road intersection along Romero Street and San Felipe Street. This area contains dense retail and restaurant uses with adjacent residential uses. The Old Town area generates a significant amount of pedestrian and bicycle activity along Rio Grande Boulevard.

South of Central Avenue, Rio Grande Boulevard transitions into a residential character, fronted by single family residential units and vacation units with driveway access directly onto Rio Grande Boulevard. The roadway speed limit is reduced to 25 mph in this section and on-street parking is permissible along the corridor.

Hotel Albuquerque is accessed directly from Rio Grande Boulevard

RIO GRANDE BOULEVARD Complete Street

Concept Plan

Examples of various wayfinding and lighting treatments currently along the Rio Grande Boulevard corridor

4. IMPROVEMENT ALTERNATIVES

Improvement alternatives were developed to address the priorities of this study, as communicated by project stakeholders. Alternatives focused on enhancing the safety and functionality of pedestrian and bicycle facilities and to a lesser extent on minimizing congestion impacts associated with future vehicular volumes growth. Feasibility of implementation was considered throughout the alternatives development and analysis process. Improvement alternatives were only considered if they did not impact existing businesses or residents, did not require significant right-of-way acquisition, and were feasible to implement. Improvements were developed for specific intersections or constraint points and for segments of the corridor. For certain locations, multiple improvement alternatives were developed for the same location. The alternatives provide additional means to address the objectives of the corridor study.

Improvement alternatives are presented here by location, proceeding from the northern end of the corridor to the southern end.

The I-40 interchange, looking north on Rio Grande Boulevard

4.1 I-40 Interchange Improvements

The I-40 ramps currently experience heavy congestion during the AM and PM peak hours and traversing through the signalized ramp intersections accounts for nearly 30 percent of the total travel time along the study corridor. The two ramp intersections are closely spaced, with limited vehicle queuing storage between them. The I-40 bridge support columns limit the opportunity to widen the roadway to provide additional vehicular capacity. The eastbound ramps are also in close proximity to the Aspen Avenue intersections with the Best Western Hotel to the west and the recent additions of Starbucks and Burger King in the shopping center east of the corridor.

There are currently no bicycle facilities through the interchange, although narrow striped shoulders are provided on both sides of the street. There are 10-to-13- foot-wide pedestrian walkways on either side of the roadway beneath the bridge, although the walkways are bisected by a row of pedestrian scale lighting. Feedback provided by the community indicates that the walkways are dark and feel unsafe. Crosswalks across Rio Grande Boulevard are quite long (over 130 feet from ramp to ramp at the eastbound ramp intersection) and the frequency of vehicle turning movements is heavy.

Two solutions are proposed for the I-40 interchange to improve traffic and pedestrian flow, discussed below.

4.1.1 Diverging Diamond Interchange

A diverging diamond interchange is a recently developed interchange design configuration that has quickly gained acceptance with state departments of transportation around the country. In such a configuration, traffic flow is flipped (drive on left-side of opposing traffic) between the interchange ramps. This allows for all ramp movements to consist of much more efficient right turns instead of conflicting left turns. Pedestrian facilities are provided in the roadway median. Pedestrian crossings to the median are at signalized intersections. The first diverging diamond interchange in the state was recently constructed by the New Mexico Department of Transportation along I-25 at Cerrillos Road in Santa Fe.

A diverging diamond interchange would provide the following benefits along Rio Grande Boulevard:

- Provide a more efficient traffic operation, reducing delays and congestion
- Would not require any widening or modification of the I-40 bridge structure
- Provide controlled pedestrian crossings for all movements, limiting right-turn conflicts with vehicles

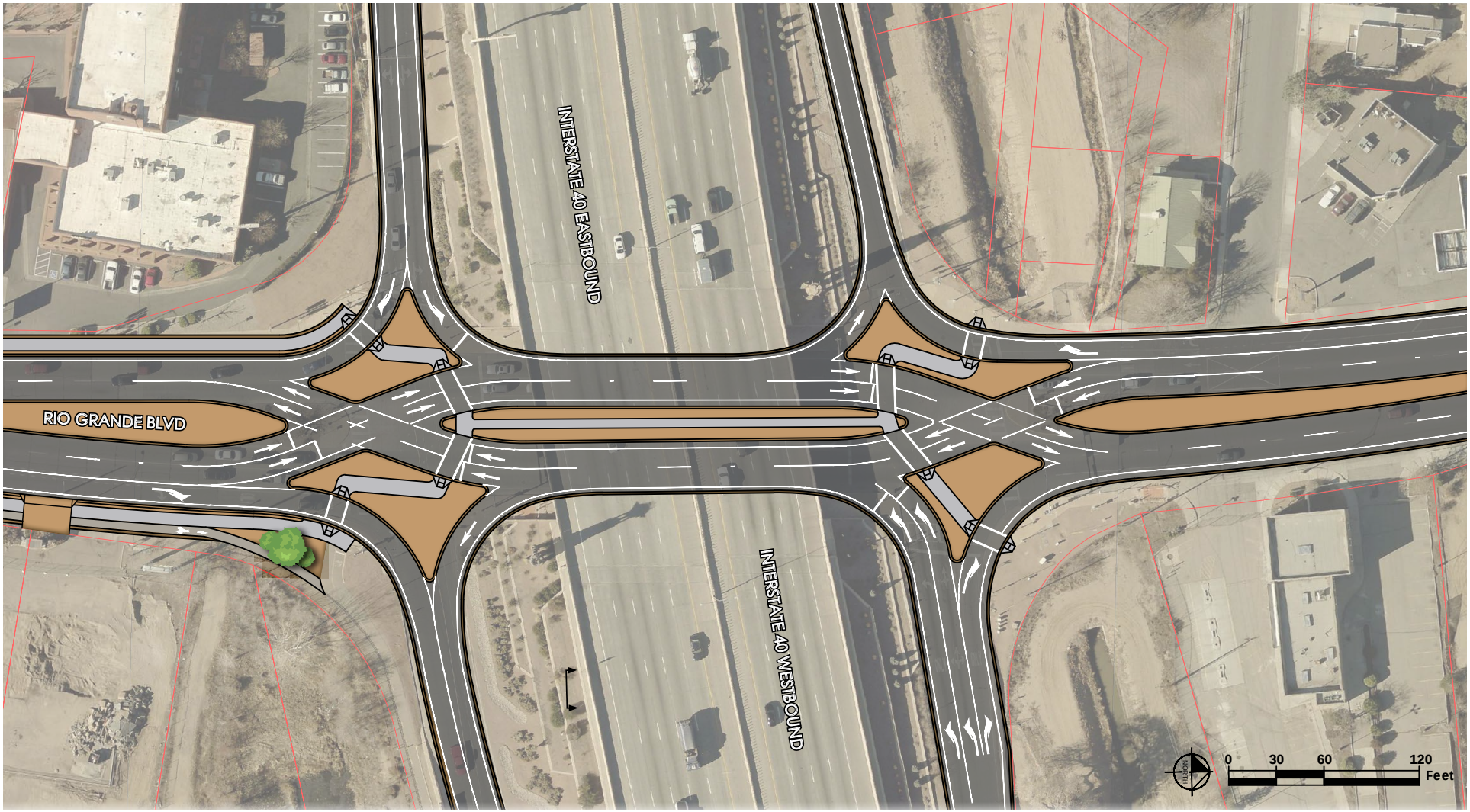
Diverging diamond interchanges do have a few drawbacks. They generally require more right-of-way and can be confusing to drivers to navigate. In the case of Rio Grande Boulevard, it appears that a diverging diamond interchange could be placed within existing right-of-way. Wayfinding and driver education are critical elements of a diverging diamond interchange implementation. More detailed engineering analysis will be required to further assess the feasibility of a diverging diamond interchange at this location.

A potential configuration of a diverging diamond interchange at the I-40 and Rio Grande Boulevard interchange is shown in **Figure 4-1**.

Costs

Opinions of probable costs were developed for the diverging diamond alternative. This design requires no right-of-way acquisition. The total estimated cost of this alternative is **$4,410,000**. Further design development will be required to refine the estimate, including assessing grading, utilities, ramp modifications, and drainage.

Figure 4-1: Diverging Diamond Interchange



4.1.2 Widening of Pedestrian and Bicycle Facilities

The location of the columns supporting the I-40 bridge preclude the widening of the roadway to improve on-street bicycle facilities; however, it may be feasible to widen the existing pedestrian space to provide a wide shared bicycle-pedestrian pathway beneath the I-40 bridge. In order to do so, the existing slope walls retaining the I-40 bridge would need to be modified and pulled back to be vertical walls instead of the existing slope. It would be desirable to pull back those slope walls to provide a minimum 18-foot clear space between the columns and the wall, providing for a 14-foot shared-use path with 2-foot shoulders on each side. In such a configuration, the pathway would be signed to allow for both pedestrian and bicycle movements. This would be an ideal solution, particularly on the east side of Rio Grande Boulevard, to provide a high-quality connection between the I-40 Trail south of I-40 and the planned Alameda Drain Trail. A detailed structural review of the as-built drawings for the I-40 interchange would be required to assess the feasibility and cost implications of such an improvement. Since bicycle and pedestrian facilities are provided in the median of a diverging diamond interchange, this improvement would be an alternative to the diverging diamond interchange solution.

Looking south at the pedestrian walkway beneath the I-40 overpass

No cost estimates were prepared for this alternative due to the uncertain impact on the structural foundations of the freeway overpass.

4.2 Aspen Avenue Improvements

The main objective for improvements in the vicinity of Aspen Avenue is to address an existing gap in the I-40 Trail. The current trail terminates at Aspen Avenue approximately 760 feet west of Rio Grande Boulevard. Aspen Avenue is a low-volume, low-speed undivided roadway. Thus, it provides a low-stress connection from the bike trail to Rio Grande Boulevard; however, there is not a low-stress way to get from the Aspen Avenue & Rio Grande Boulevard intersection to the continuation of the I-40 Trail east of Rio Grande Boulevard. The sidewalk on the west side of Rio Grande Boulevard between Aspen Avenue and the I-40 eastbound ramps is narrow and the nearest crossing to the south is at Bellamah Avenue, over 750 feet away. The collision data for this location illustrates some of the hazards experienced by all users in this area. Each improvement for the Aspen Avenue area includes elements to address the gap in the trail network.

Congestion associated with the I-40 interchange backs up on northbound Rio Grande Boulevard and affects turning movements at the Aspen Avenue intersection and nearby driveways. Backups are caused by heavy volumes accessing and egressing both the eastbound and westbound I-40 ramps. Therefore, a secondary element of improvements at this location is to better define vehicle movements and allow for clearly delineated vehicle queuing locations for turning movements.

Looking west towards across Rio Grande Boulevard Aspen Avenue. There is currently no bicycle connection in this area for eastbound cyclists on the I-40 Trail.

Three alternative options were considered for the Aspen Avenue intersections. The primary considerations for this location are as follows:

- Preserving the existing access points along Rio Grande Boulevard for the Best Western Hotel and Old Town Tire and Automotive store, and accommodating the desired access points for the Starbucks/Burger King joint development
- Closing the current gap across Rio Grande Boulevard that exists for the I-40 paved bicycle trail
- Providing pedestrian crossing facilities across Rio Grande Boulevard and improving pedestrian facilities adjacent to the corridor

All alternatives include a median refuge with a rapid rectangular flashing beacon (RRFB, also known as an Active Warning Beacon) to provide a bicycle and pedestrian crossing facility across Rio Grande Boulevard. RRFBs are ideal for environments where there is a major bicycle and/or pedestrian crossing of a roadway. The RRFB has been shown to be particularly effective in achieving vehicle yielding in part because it is activated by a pedestrian as opposed to continuously flashing. Several studies have found that RRFBs increased vehicle yielding from less than 5 percent to over 80 percent, with a yielding rate of over 90 percent at night when the flashers are most visible. RRFBs are noted as a safety enhancement device by the United States Federal Highway Administration (FHWA). The bike connection across Rio Grande Boulevard is facilitated at this mid-block RRFB crossing at Aspen Avenue, which can be utilized by both pedestrians and cyclists.

Looking south towards Aspen Avenue along Rio Grande Boulevard

All alternatives also improve the frontages along both sides of the roadway to provide wider sidewalks with landscape strips. Landscape strips provide a buffer between the higher-speed vehicle traffic in the roadway and pedestrians, increasing the level of comfort. Providing this landscaping strip also provides an area to locate utility poles, lighting, and signs along the corridor, allowing them to be removed from the sidewalk and increasing the effective width of the sidewalk.

All alternatives provide a one-way northbound bicycle path on the east side of the roadway that serves to close the eastbound connection gap within the I-40 Trail. Eastbound movements would cross Rio Grande Boulevard at Aspen Avenue, then proceed up the bike path on the east side of Rio Grande Boulevard to the I-40 Trail. Westbound bicycle movements would cross Rio Grande Boulevard at the signalized crossing at the I-40 eastbound ramp intersection, then utilize the southbound bike lanes on Rio Grande Boulevard to access Aspen Avenue. To further benefit bicycle movements, all alternatives include green striping within vehicle/bicycle conflict zones to increase the visibility of the bicycle facility and awareness of those conflicts for turning vehicles. Green bike lanes have been demonstrated to be very successful in reducing vehicle/bicycle collisions by numerous studies around the country and are included in the National Association of City Transportation Officials (NACTO) Urban Bikeway Design Guide (March 2014).

Shared lane markings or "sharrows" are also recommended along the western leg of Aspen Avenue to better enhance the bicycle route connection to the off-street portion of the I-40 Trail.

The three alternatives vary in how they maintain or preclude access between Aspen Avenue, driveways along Rio Grande Boulevard, and Rio Grande Boulevard itself. To provide a safe crossing of Rio Grande Boulevard, a median refuge is required, which inherently modifies some access. How that access is modified is handled differently in each alternative.

Based on input from the public and project stakeholders, Alternative 3 was identified as the preferred improvement alternative.

4.2.1 Aspen Avenue Improvement Alternative 1 - Two-Way-Left-Turn Median with Bicycle Refuge

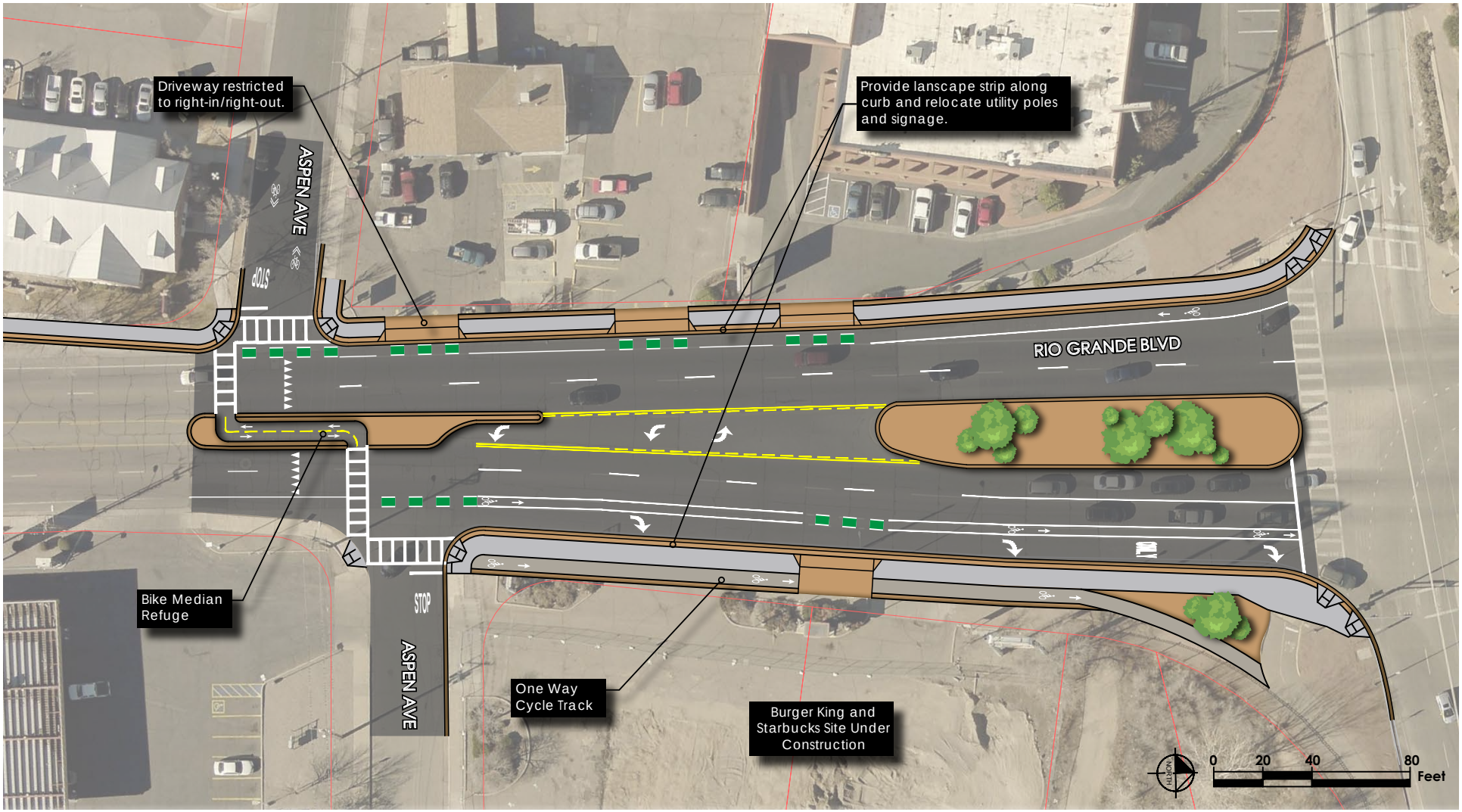
Alternative 1 preserves all movements into and out of three of the four mid-block driveways (the Best Western Hotel driveway, one of the two Old Town Auto driveways, and the Starbucks/Burger King driveway). With a median refuge, both approaches of Aspen Avenue are limited to right-in/right-out access only except for preserving southbound left turn to Aspen Avenue from Rio Grande Boulevard. All other traffic is anticipated to be shifted to Zearing Avenue. Aspen Avenue Improvement Alternative 1 is shown in **Figure 4-2**.

Traffic and Multimodal Circulation

This alternative would redirect 39 and 33 vehicles during the AM and PM peak hours, respectively, at the Aspen Avenue & Rio Grande Boulevard due to the turn limitations. These vehicles would likely shift to Zearing Avenue (which is accessible from both legs of Aspen Avenue) or make a right turn to Rio Grande Boulevard followed by a U-turn. Both shifts would likely require some out-of-direction travel for those vehicles. Included in the noted impacted traffic volumes are left-turn movements from eastbound Aspen Avenue to northbound Rio Grande Boulevard coming from the Best Western Hotel driveway located on Aspen Avenue.

Both bicycle and pedestrian facilities are improved in this alternative as described above. In this alternative, the pedestrian crosswalk connecting the two legs of Aspen Avenue contains a large shared bike/pedestrian median refuge with the installation of RRFB as described previously. The offset nature of the median refuge promotes a two-stage crossing of Rio Grande Boulevard where cyclists and pedestrians would ensure a gap in oncoming traffic for one direction of Rio Grande Boulevard at a time.

Figure 4-2: Aspen Avenue Alternative 1



Design and Implementation Challenges

This alternative includes the following design and implementation challenges:

- Requires out-of-direction travel for some vehicles currently using Aspen Avenue
- Requires relocation of existing wayfinding, lighting, and utility poles located within the sidewalk

Costs

Opinions of probable costs were developed for the alternative. This design requires no right-of-way acquisition. The total estimated cost of this alternative is **$1,050,000**.

4.2.2 Aspen Avenue Improvement Alternative 2 – Left-Turn Pocket Median Treatment with Bicycle Refuge

Aspen Avenue Improvement Alternative 2 is shown in **Figure 4-3**. Alternative 2 has many similarities to Alternative 1, but further channelizes turning movements along Rio Grande Boulevard between Aspen Avenue and the I-40 eastbound ramp intersection. The large number of driveways at this location, combined with congestion from the interchange, results in unpredictable vehicle movements and is likely partially responsible for the large number of collisions in this area. This Alternative further channelizes left-turn movements, providing left-turn bays for some movements and restricting others. The existing two-way left-turn median treatment is replaced with exclusive left-turn pockets for facilitating turning movements from Rio Grande Boulevard to the Best Western driveway and to eastbound Aspen Avenue. Both driveways for the Old Town Auto store are restricted to right-in/right-out only, as is the Starbucks/Burger King driveway. All redirected traffic is anticipated to be shifted to Zearing Avenue or Aspen Avenue. To better facilitate turning movements into the Starbucks/Burger King center, the existing landscaped median along Rio Grande Boulevard will be reduced to provide a dedicated left-turn lane.

Traffic and Multimodal Circulation

The effects on circulation would be similar to Alternative 1, albeit with additional driveway traffic limited to right-in/right-out movements only. This may increase u-turn propensity along Rio Grande Boulevard and somewhat increase traffic at Zearing Avenue.

Design Constraints

This alternative includes the following design and implementation challenges:

- Requires out-of-direction travel for some vehicles currently using Aspen Avenue
- Requires relocation of existing wayfinding, lighting, and utility poles located within the sidewalk
- Requires modification to the existing landscaped median along Rio Grande Boulevard

Costs

Opinions of probable costs were developed for the alternative. This design requires no right-of-way acquisition. The total estimated cost of this alternative is **$1,250,000**.

4.2.3 Aspen Avenue Improvement Alternative 3 – Left-Turn Pocket Median Treatment with Bicycle Crossing (Preferred)

Alternative 3 further defines the median area between Aspen Avenue and the I-40 eastbound ramps, while also modifying the movements allowed between Aspen Avenue and Rio Grande Boulevard. The existing two-way center-turn median treatment is replaced with protected left-turn pockets for movements from Rio Grande Boulevard to the Best Western and Starbucks/Burger King driveways. The median may be modified to allow for a left-turn movement from Rio Grande Boulevard to the northern Old Town Auto driveway. All driveways would have left-turn movements precluded. Left turns would be allowed from eastbound Aspen Avenue to northbound Rio Grande Boulevard, but all other movements to/from Aspen Avenue would be limited to right-turn only. All redirected traffic is anticipated to be shifted to Zearing Avenue. With this configuration, the offset bicycle/pedestrian median would be modified to a more traditional refuge island with a crosswalk extending across the full width of Rio Grande Boulevard at the southern leg of the Aspen Avenue intersection. An RRFB is still proposed.

Aspen Avenue Improvement Alternative 3 is shown in **Figure 4-4**.

Traffic and Multimodal Circulation

The turn restrictions proposed in this alternative at the Aspen Avenue and Rio Grande Boulevard intersection would impact 14 and 22 vehicles in the AM and PM peak hours, respectively. This represents a smaller number of impacted vehicles than both Alternatives 1 and 2. Additional vehicles that currently make left turns from the Best Western, Old Town Auto, and Starbucks/Burger King driveways would be shifted to Aspen Avenue or Zearing Avenue. In particular, vehicles currently exiting the Starbucks/Burger King and heading south on Rio Grande Boulevard would likely shift to Zearing Avenue. However, the removal of the two-way center-turn lane treatment and significantly improved delineation of allowable movements will likely reduce the number of collisions by reducing the number of potential conflict points in this area.

Figure 4-3: Aspen Avenue Alternative 2

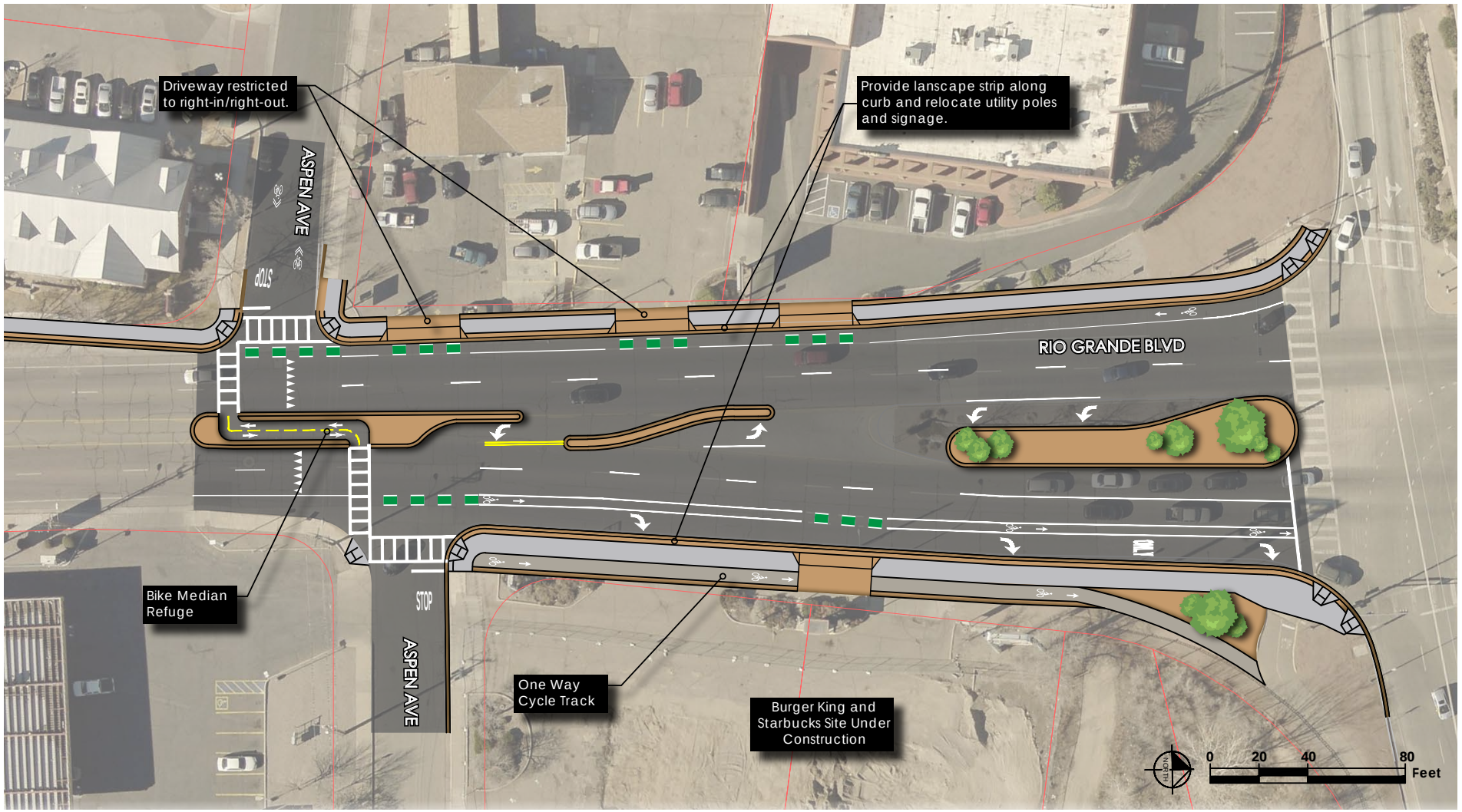
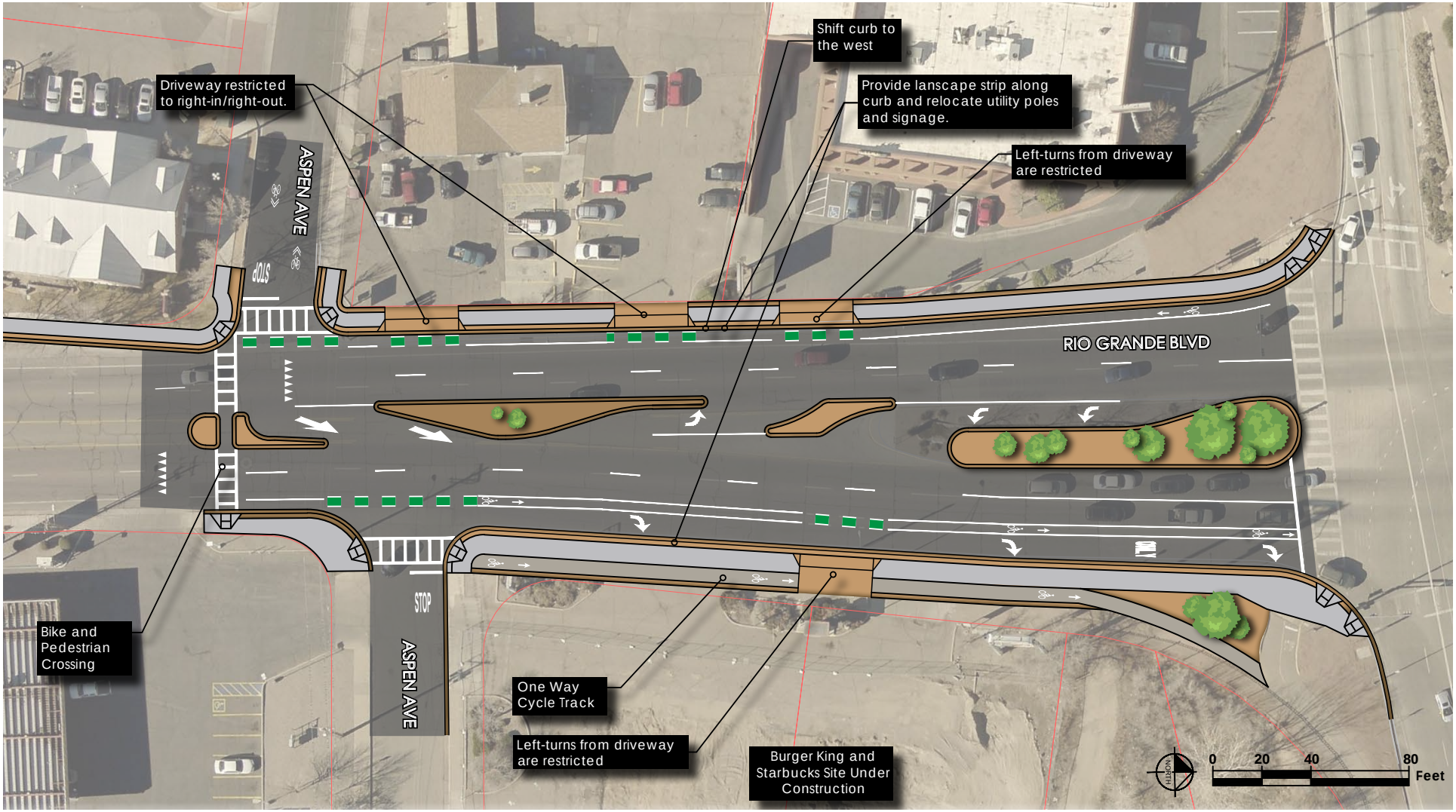


Figure 4-4: Aspen Avenue Alternative 3 (Preferred)



While the median refuge in this alternative is less expansive than in the previous alternatives it would still achieve the objectives of the median refuge and the enhanced pedestrian/bicycle crossing.

Design Constraints

This alternative includes the following design and implementation challenges:

- Requires out-of-direction travel for some vehicles currently using Aspen Avenue and adjacent driveways
- Requires relocation of existing wayfinding, lighting, and utility poles located within the sidewalk
- Requires modification to the existing landscaped median along Rio Grande Boulevard

Costs

Opinions of probable costs were developed for the alternative. This design requires no right-of-way acquisition. The total estimated cost of this alternative is **$1,290,000**.

4.2.4 Closure of Aspen Avenue East of Starbucks/ Burger King Driveway

Members of the community have proposed the closure of Aspen Avenue east of Rio Grande Boulevard between the Starbucks/Burger King Driveway and 22nd Street Northwest. This closure would be intended to address neighborhood cut-through concerns. The closure would redirect traffic from the neighborhood east of 22nd Street Northwest to Zearing Avenue. The closure is not evaluated as part of this study. It is noted that the closure would not be precluded or would not inhibit any of the proposed alternatives. The closure would potentially be more feasible and less impactful with the implementation of Alternative 3, as that alternative limits the east leg of the Aspen Avenue & Rio Grande Boulevard intersection to right-in/right-out only, which would reduce the demand on that segment of Aspen Avenue.

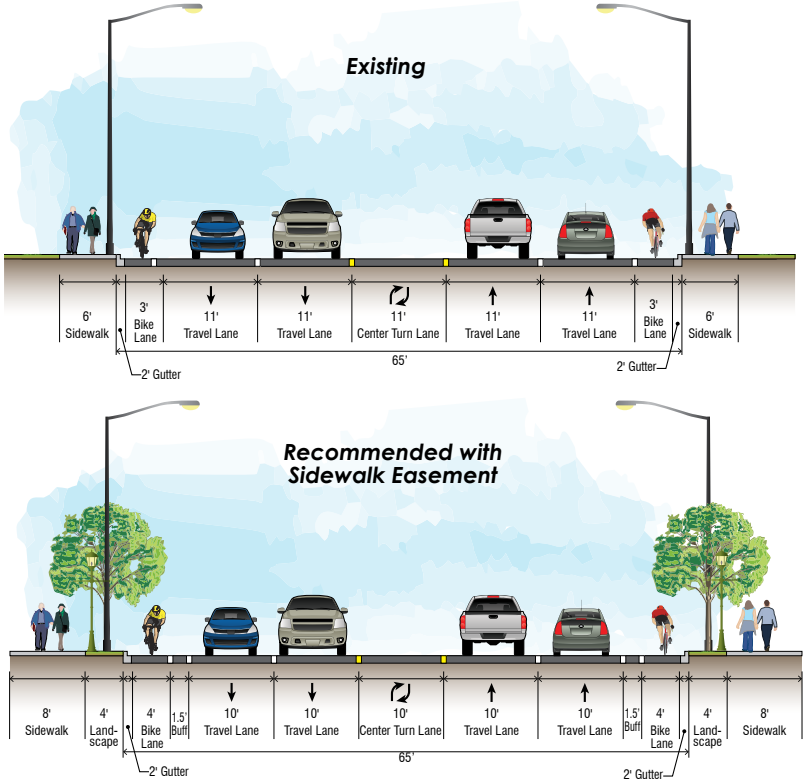
4.3 Roadway Cross-Section: Aspen Avenue to Mountain Road

Rio Grande Boulevard between Aspen Avenue and Mountain Road is four lanes with a two-way center turn lane and bike lanes. It has sidewalks of varying widths (generally between 4 and 8 feet) on both sides of the roadway. In order to enhance the pedestrian environment and bicycle comfort, it is recommended to make modifications to the cross-section to improve those facilities. The proposed cross-section is shown in **Figure 4-5**.

Modifications include:

- Widen the bike lane from 3 feet to 4 feet (meeting minimum standards) plus a 1.5-foot striped buffer to further separate bicycle and auto traffic
- Narrow travel lanes to 10 feet
- Provide a landscape strip to further buffer pedestrian facilities from auto traffic and provide an area outside of the walkway to locate utilities, lighting, and landscaping
- Widen sidewalks to a consistent 8 feet
- Dashed green striping for the bike lane in conflict zones
- Upgrade wayfinding with a consistent theme and style
- Provide pedestrian-scale lighting
- Acquisition of easements or right-of-way from adjacent land owners to provide identified improvements
- Add a Rapid Ride Blue Line bus stop in both directions just south of Bellamah Avenue

Figure 4-5: Rio Grande Boulevard (Aspen Avenue to Mountain Road) Cross Section



RIO GRANDE BOULEVARD Complete Street

Concept Plan

Narrowing travel lanes has been shown to reduce vehicle speeds, which is one of the community's priorities for this project.[1] Providing dashed green striping through conflict zones increases motorist and bicyclist awareness of the conflict area and has been shown to increase vehicle yielding.[2] Segments of Rio Grande Boulevard have pedestrian-scale lighting. As part of this improvement, the lighting spacing will be standardized to increase the number of lights and new lighting fixtures will be installed. A new irrigation system will be installed to maintain new landscaping.

Opportunities to install raised medians were evaluated for this segment of Rio Grande Boulevard. The segment currently has a two-way center-turn lane, which provides access to fronting commercial properties. Due to the large number of driveways along this segment, removal of the center-turn lane is not recommended; however, median islands can be placed in certain locations without impacting driveway access. Median islands can lower average vehicle speeds by reducing the perceived width of the roadway. They also provide a location for landscaping and signage to beautify the corridor, establish a theme/consistent feel for the community, and implementing gateway signage or wayfinding. Two locations for median islands for this segment of Rio Grande Boulevard would avoid driveway or roadway access impacts. These locations are at Bellamah Avenue (discussed further in the Bellamah Avenue Improvements section) and just south of Pueblo Bonito Court, as shown in **Figure 4-6**.

Design Constraints

While bicycle facilities can be improved through re-striping, in order to improve pedestrian facilities, additional right-of-way and/or easements would be required. The amount of additional right-of-way needed varies throughout this segment. Therefore, it is recommended that the pedestrian component of this improvement be implemented as additional right-of-way is made available and funding is identified. Sidewalk and utility improvements can be implemented parcel-by-parcel based on right-of-way availability.

Narrowing of travel lanes to 10-feet will require coordination and concurrence with the Albuquerque Transit Department.

Rio Grande Boulevard near Bellamah Avenue

Example Gateway Signage

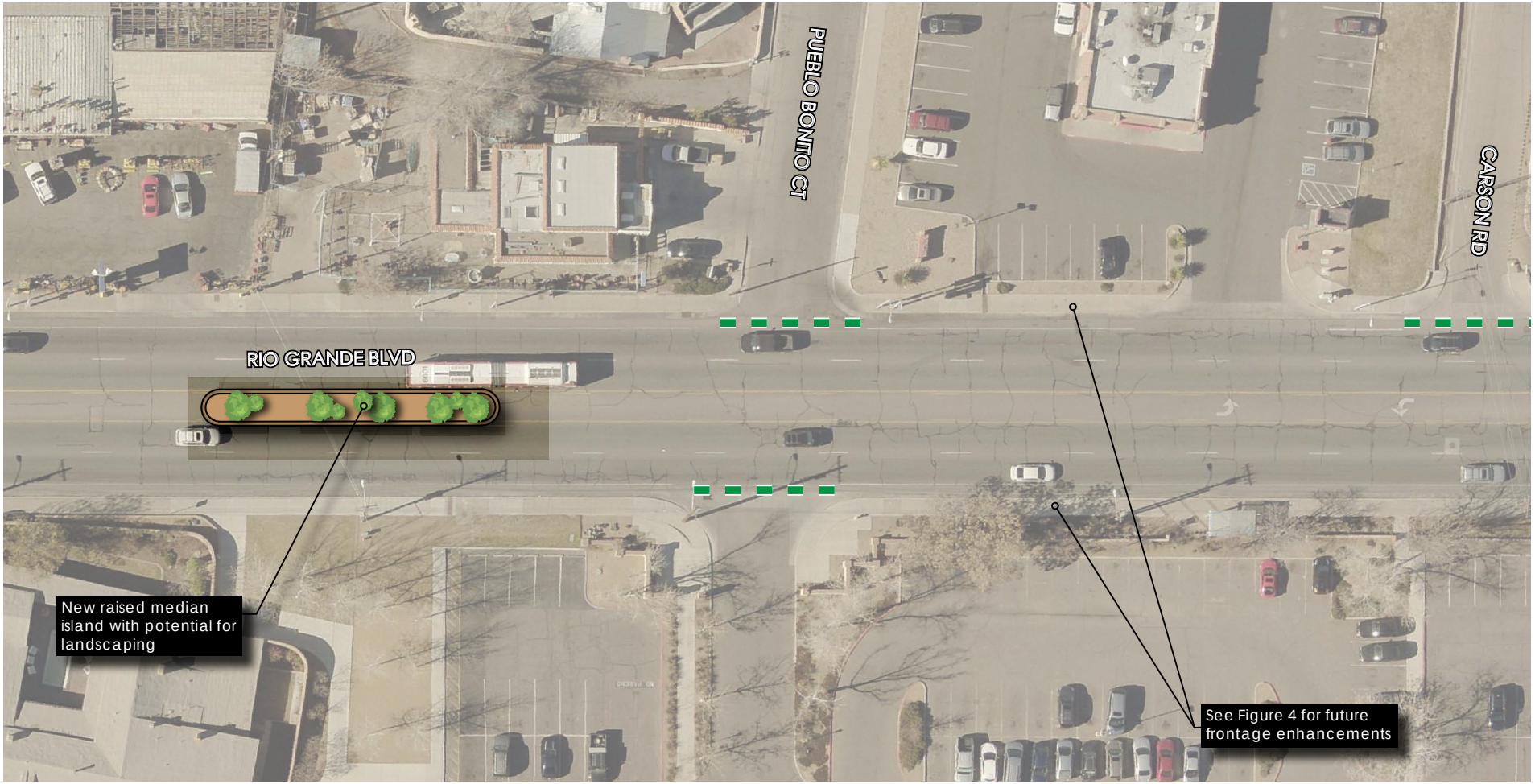
Costs

The total estimated cost of improving Rio Grande Boulevard to the depicted cross-section is **$2,460,000**. The cost estimate does not include the cost for right-of-way acquisition, assuming that the required strip of right-of-way will be dedicated to the city as fronting property redevelops. However, the cost does include all improvements that would be provided within the ultimate right-of-way. Implementing the striping improvements only, without any sidewalk or landscaping improvements is estimated to cost **$90,000**. The total cost for the new median island at Pueblo Bonito would be an additional **$75,000**.

[1] Fitzpatrick, Kay et al, "Design Factors That Affect Driver Speed on Suburban Arterials," Research Report 1769-3, Texas Transportation Institute, June 2000.

[2] Center for Transportation Research, The University of Texas at Austin, "Effects of Colored Lane Markings on Bicyclist and Motorist Behavior at Conflict Areas, August 2010.

Figure 4-6: Rio Grande Boulevard Median Island (Pueblo Bonito Court)



4.4 Bellamah Avenue Improvements

Bellamah Avenue currently contains tightly constrained pedestrian facilities. The improvements proposed include sidewalk and crosswalk enhancements on both sides of Rio Grande Boulevard. The Bellamah Avenue improvements can be seen in **Figure 4-7**.

Proposed improvements include:

- Relocate signal equipment, widen sidewalk, and reconstruct curb ramps along the west side of Rio Grande Boulevard at the Bellamah Avenue intersection
- Construct a raised median in Rio Grande Boulevard south of Bellamah Avenue as a location to place an Old Town entry monument, potentially including landscaping. Extend the median to provide a pedestrian refuge for a new crosswalk across Rio Grande Boulevard on the south leg of the intersection
- Provide a bulbout in the northeast corner of the intersection to shorten the pedestrian crossing distance and improve pedestrian visibility
- Reconstruct curb ramps and relocate utility poles to bring pedestrian facilities up to current standards
- Provide landscaping opportunities that would extend across Bellamah Avenue (landscaping maintenance by others)

As noted in the previous improvement section, green striping would be provided in the bike lane at vehicular conflict points.

Costs

Opinions of probable costs were developed for the Bellamah Avenue improvements. The total estimated cost of this alternative is **$480,000**. Ongoing maintenance costs associated with the additional landscaping are assumed to be borne by others.

4.5 Mountain Road Improvements

The Mountain Road and Rio Grande Boulevard intersection is a 5-legged intersection that serves as the primary entry point to Old Town Albuquerque from Rio Grande Boulevard. The intersection also serves as a critical connection in the City's bicycle network as Mountain Road is designated as a "Bike Boulevard." As noted in Chapter 3, this location has the highest number of collisions in the study corridor. As such, the primary considerations for this location are as follows:

- Preserving the existing access points to Old Town by accommodating the current 5-legged intersection configuration and still improving vehicular capacity to accommodate future growth
- Improving safety by reducing the number and complexity of vehicle conflict points
- Improving bicycle connections through the intersection and between Rio Grande Boulevard and Mountain Road
- Improving pedestrian facilities to connect users across Rio Grande Boulevard and Mountain Road for access to Old Town and the Old Town monument located at the intersection

Two alternative geometries were considered for Mountain Road. Both alternatives address the considerations above, one with enhancements to the existing signalized intersection and a second with a roundabout.

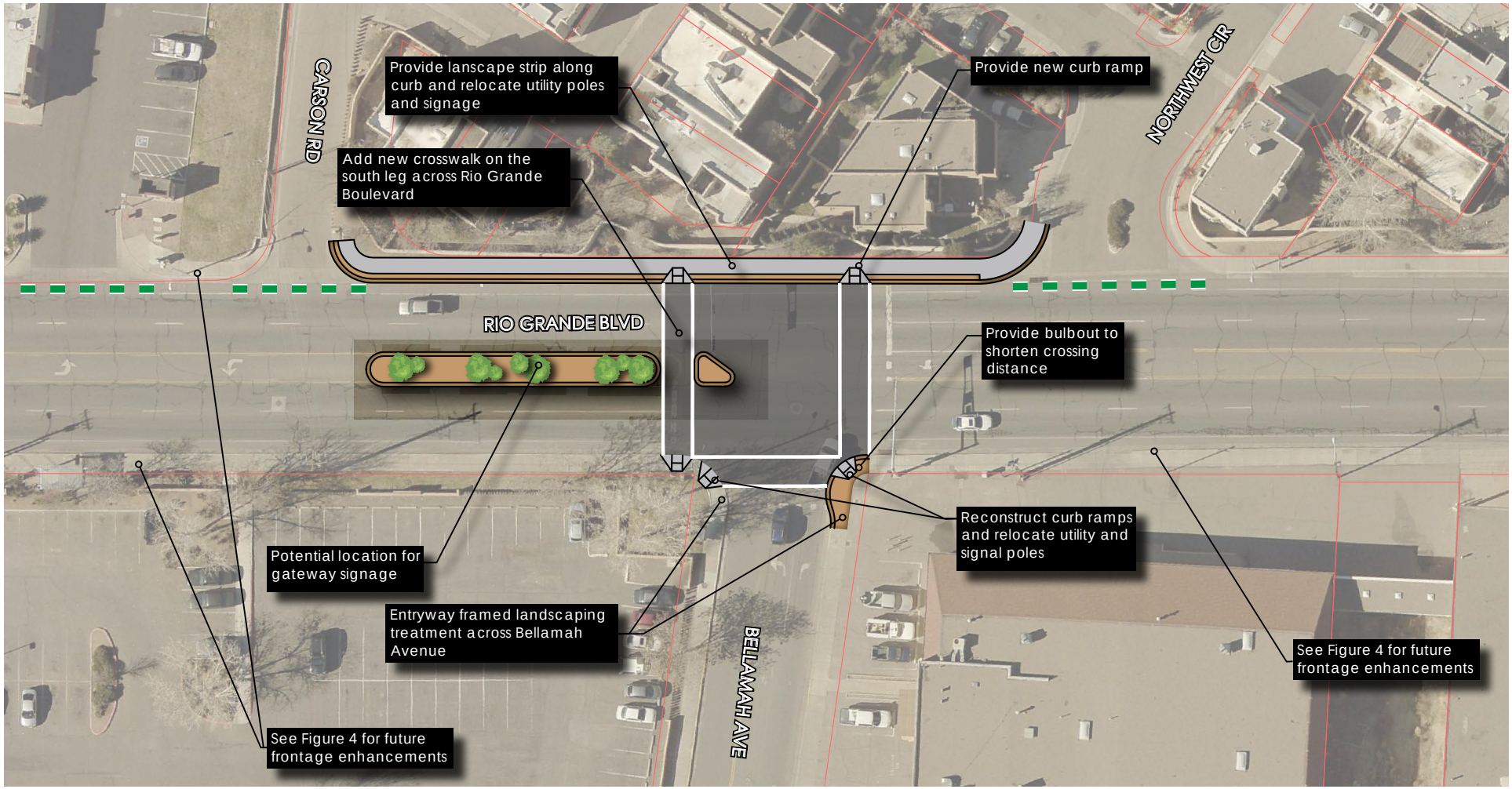
Both alternatives close the Main Street connection between Mountain Road and Rio Grande Boulevard at the southwest corner of the intersection. This connection is undesirable for bicycle and pedestrian circulation as it creates another conflict point with vehicles. Removal of the connection also provides additional space for the Old Town Founder and Gateway Park. The two alternatives have different approaches to preserving access to parcels currently fronting Main Street.

Looking south at the Mountain Road/Rio Grande Boulevard intersection

Westbound cyclists on Mountain Road Bike Boulevard

The roundabout alternative is preferred due to its relatively greater safety benefits. However, the alternative that maintains signalization remains a viable option if right-of-way accumulation or other design challenges associated with the roundabout alternative cannot be overcome.

Figure 4-7: Bellamah Avenue Improvements



4.5.1 Mountain Road Improvement Alternative 1 – Signalized Intersection

Alternative 1 preserves the existing signalization of the Mountain Road and Rio Grande Boulevard intersection. It includes a number of bicycle and pedestrian improvements to improve the safety and comfort of the intersection. Key elements of the concept include:

- Removal of the free right turn from northbound Rio Grande Boulevard to southbound Romero Street (the southeastern departure leg of the intersection leading to Old Town). This movement is maintained for autos as a signal-controlled movement
- Provision of bike boxes, bike slots, and two-stage left-turn boxes to delineate queuing space for bicycles and prioritize bicycle movements
- Bulbouts in all corners of the intersection to shorten pedestrian crossings and improve visibility of pedestrians
- Provision of directional pedestrian ramps to shorten pedestrian crossings
- Ladder-style crosswalks to better delineate the pedestrian space and reduce vehicle encroachment
- Closure of Main Street at Rio Grande Boulevard and modification of a private driveway to maintain access
- Enlargement of the Old Town Founder and Gateway Park

These features all serve to enhance bicycle and pedestrian circulation through the intersection. The two significant public spaces adjacent to this intersection would be enlarged and made more accessible by shortening crossings and reducing adjacent vehicle movements.

Mountain Road Improvement Alternative 1 is depicted in **Figure 4-8**.

Traffic and Multimodal Circulation

This alternative will have no measurable effect on vehicular delay from Baseline conditions. Traffic counts performed in November 2015 indicated that 2 and 11 vehicles made the sharp right-turn from northbound Rio Grande Boulevard to southbound to Romero Street in the AM and PM peak hours, respectively. Autos can still make this movement at the Mountain Road and Rio Grande Boulevard intersection. Trucks would not be able to make this movement and would need to access Old Town via other access points off Central Avenue or Mountain Road. With the enhancements for bicyclists and pedestrians proposed, the intersection will have safer facilities for those users and better multimodal connectivity. The southbound bus stop along Rio Grande Boulevard on the far side of the intersection will remain in its current location.

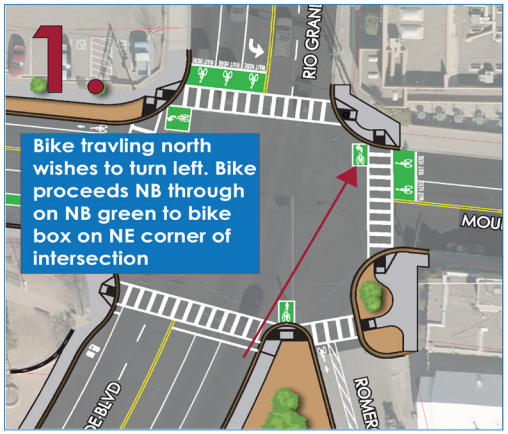
Design Constraints

This alternative will require coordination with property owners fronting Main Street to make the proposed Main Street modification. It will also require coordination with the property owner at the southeast corner of the intersection implement the proposed bulbout. Some modifications may be required to Old Town Founder and Gateway Park to tie in the proposed improvements.

Costs

Opinions of probable costs were developed for the alternative. While this design requires no right-of-way acquisition, there is construction anticipated with the sidewalk improvements as well as the appropriate striping and landscaping improvements proposed. The total estimated costs of this alternative is **$1,330,000**.

Two-Stage Bike Box Explained



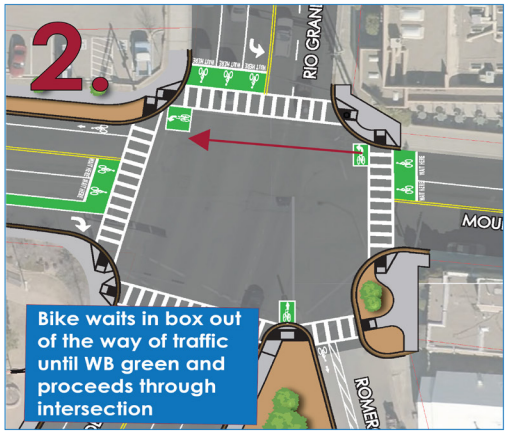
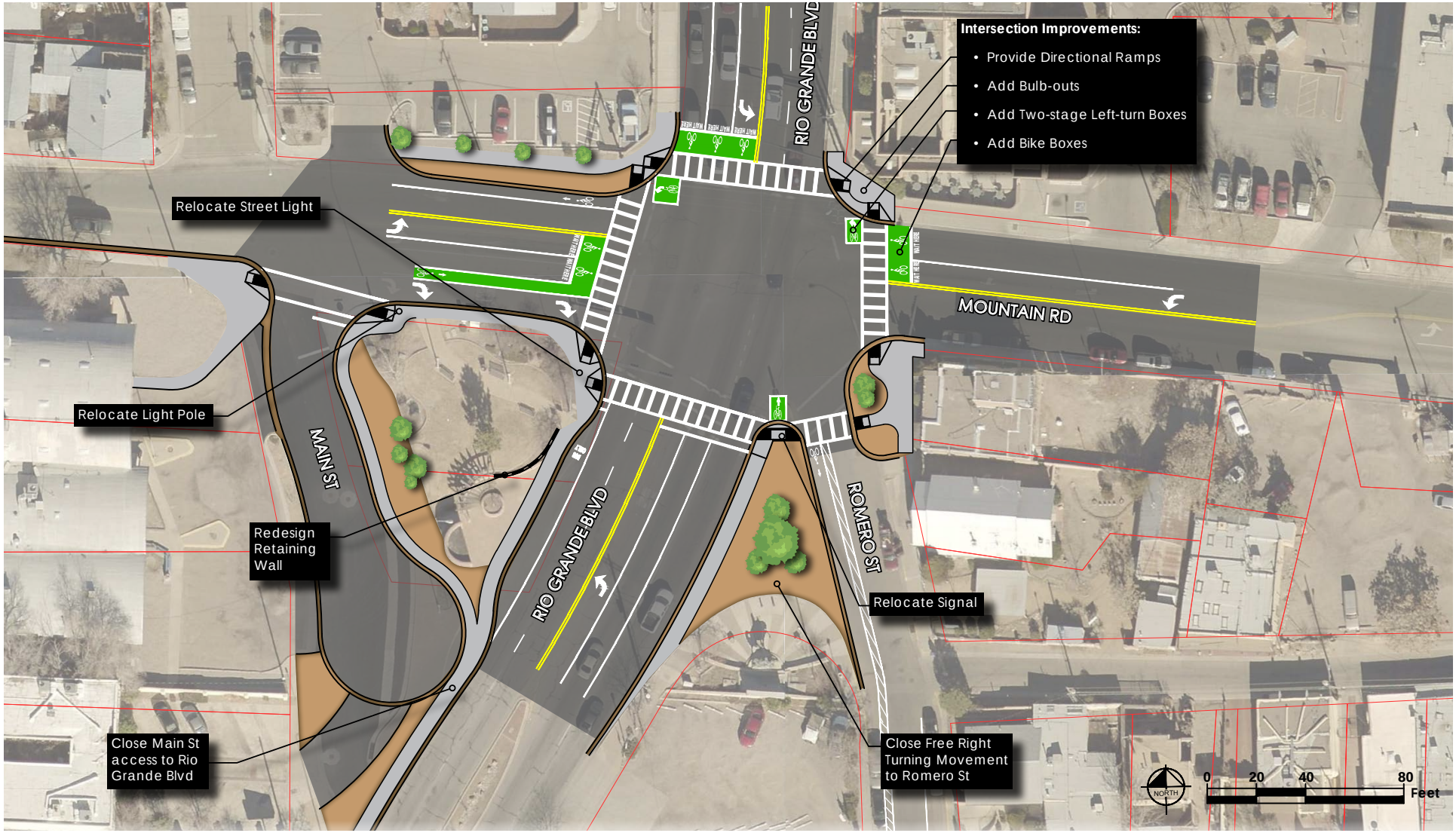


Figure 4-8: Mountain Road Alternative 1 - Signalized Intersection



4.5.2 Mountain Road Improvement Alternative 2 - Roundabout (Preferred)

Alternative 2 proposes replacement of the existing signalized intersection with a roundabout. Installing a roundabout at this location may provide the following benefits:

- Reduced vehicular speeds
- Reduced vehicular conflict points, corresponding to reduced collision frequency and severity
- Reduced vehicular, bicycle, and pedestrian delays
- Prominent location for monument/gateway features
- Shortened pedestrian crossings

Mountain Road Improvement Alternative 2 is shown in **Figure 4-9**.

A roundabout requires larger space than a signalized intersection associated with the need for circulating traffic lanes. Therefore, this improvement requires a small amount of right-of-way from a private property owner in the northwest corner of the intersection. It also requires significant modifications to Old Town Founder and Gateway Park. The park would be shifted west, replacing what is now Main Street. The total size of the park would increase, although all existing features and architectural elements would need to be relocated. Existing parcel access currently located on Main Street would need to relocate to driveways directly on Rio Grande Boulevard or Mountain Road. Additional space would be available for landscaping or other public space between Romero Street and Mountain Road and along Rio Grande Boulevard near the Old Town Albuquerque statue.

Traffic and Multimodal Circulation

The Alternative 2 roundabout was analyzed using existing and projected Year 2040 volumes at this location. The roundabout intersection delay and associated LOS for the projected future volumes (Year 2040) are 12.4 seconds/vehicle (LOS B) and 11.1 seconds/vehicle (LOS B) for the AM and PM peak hours, respectively. In the morning, it is expected that the westbound approach will experience the highest delay at 21.7 seconds/vehicle while the southbound approach will have the highest capacity constraints with a volume-to-capacity (v/c) ratio of 0.87. In the evening, it is expected the eastbound approach will experience the highest delays and capacity constraints with 16.5 seconds/vehicle delay and a v/c ratio of 0.82. This represents a net reduction in vehicular delay compared to the current signalized intersection (and Alternative 1). The roundabout's circulating lane widths are designed to accommodate a WB-67 truck along Rio Grande Boulevard.

Pedestrians would cross the roundabout legs at the designated island splitters on each approach, which results in a much shorter crossing distance than at the current intersection. Bicyclists would have the option of traveling through the roundabout like a vehicle, taking the travel lane, or like a pedestrian, using the marked crosswalks. A 10-foot shared use path with a 5-foot landscaped buffer is provided on all sides of the roundabout to facilitate bicycle and pedestrian movements between legs.

The southbound bus stop along Rio Grande Boulevard on the far side of the intersection will be shifted slightly south of its current location to accommodate the shared use path and the roundabout spacing required.

Design Constraints

The roundabout will require approximately 300 square feet of right-of-way acquisition in the northwest corner of the intersection possibly impacting two private parking spaces.

Construction of the roundabout would require numerous traffic handling phases and a long construction period in order to maintain traffic flow. The capacity and movements through the intersection may be significantly limited during construction.

Costs

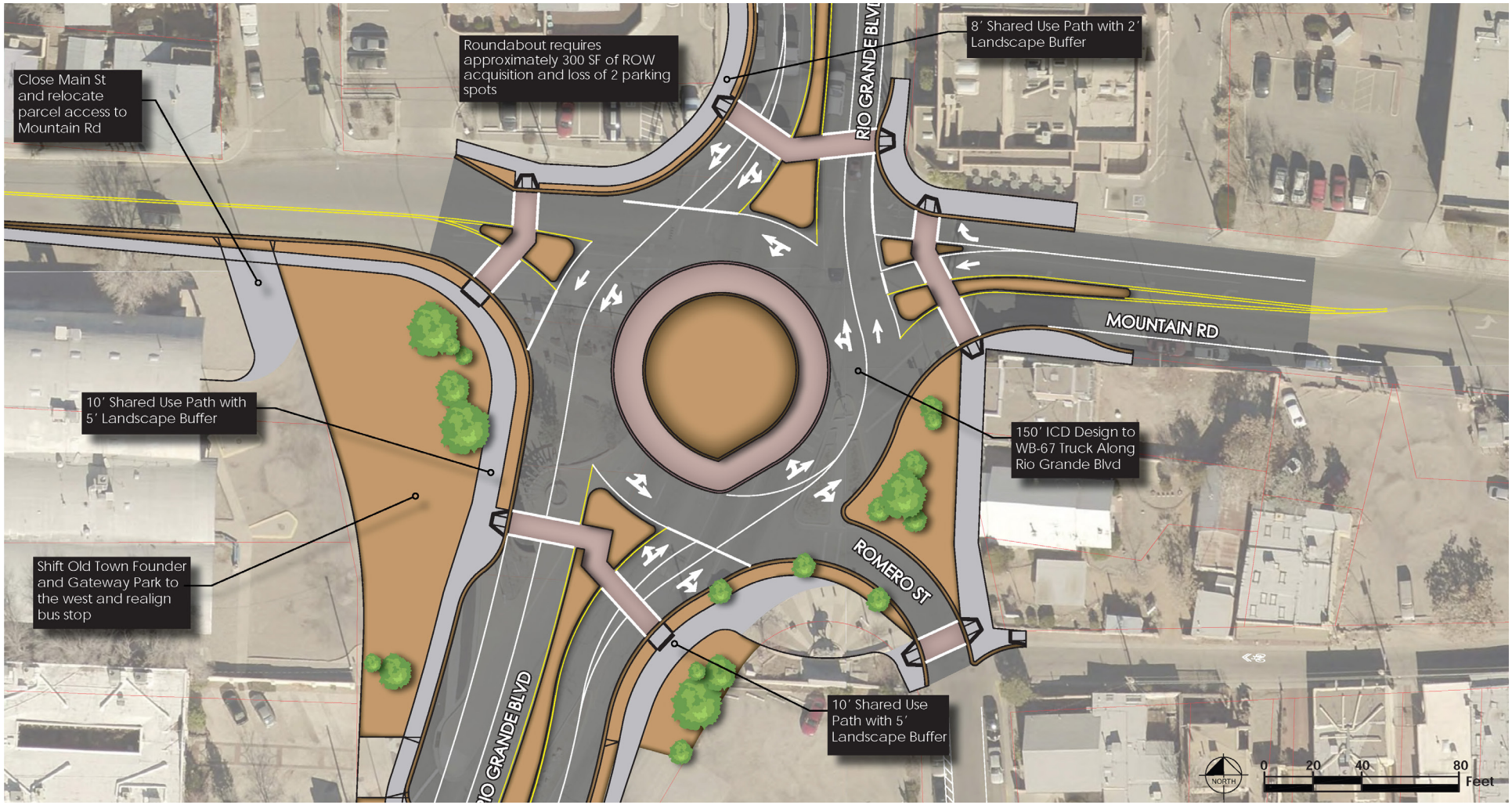
Opinions of probable costs were developed for the alternative. Due to the right-of-way acquisition and construction associated with a roundabout, the costs are substantially higher than Alternative 1. The total estimated costs of this alternative is **$2,690,000**.

4.6 Roadway Cross-Section: Mountain Road to Hollywood Avenue and North-South Bike Connectivity

One of the most critical gaps in the bicycle network in this area is along Rio Grande Boulevard south of Mountain Road. The roadway width narrows in this section, precluding the provision of bike lanes without the loss of a travel lane or modifications to the curb. Both Rio Grande Boulevard/Chacoma Place and San Pasquale Avenue serve as well-utilized north-south bikeways

Rio Grande Boulevard, looking north towards Mountain Road

Figure 4-9: Mountain Road Alternative 2 - Roundabout (Preferred)



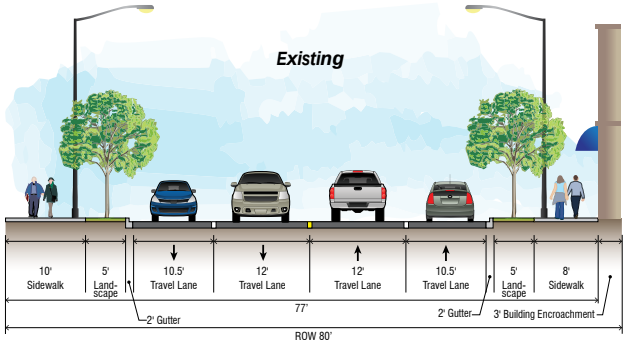
between the Paseo del Bosque Trail (Rio Grande River), Old Town Albuquerque, the I-40 Trail, and points north along the Rio Grande Boulevard corridor. However, Central Avenue and Lomas Boulevard serve as barriers for that bicycle connection, as does the lack of bicycle facilities on Rio Grande Boulevard between Central Avenue and Mountain Road.

Three improvements are proposed to improve that north-south bike connection. One of the improvements would enhance Rio Grande Boulevard itself, although a gap would remain just north of Central Avenue. A second improvement provides an alternative connection to Mountain Road via Old Town Albuquerque, while the third provides an alternative connection across Central Avenue to the east of Rio Grande Boulevard. The three improvements can be implemented together, or as independent alternatives to enhance north-south bicycle connectivity.

4.6.1 Rio Grande Boulevard Cross-Section Improvements (Mountain Road to Hollywood Avenue)

A desired cross-section for Rio Grande Boulevard between Mountain Road and Hollywood Avenue is proposed in **Figure 4-10** to address the bicycle lane gap. The following features are included in the recommended cross-section:

- Narrowing of vehicle lanes to 10 feet (an additional foot is provided for the yellow centerline stripe)
- Reduction in the sidewalk and landscaping space on the west side of the roadway from approximately 15 feet to 12 feet
- Reduction in the sidewalk and landscaping space on the east side of the roadway from approximately 13 feet to 12 feet



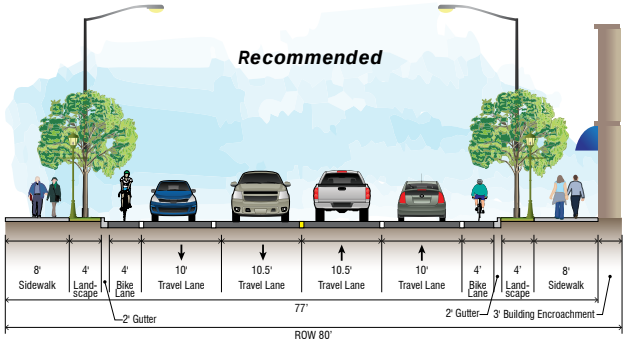


Figure 4-10: Rio Grande Boulevard (Mountain Road to Hollywood Avenue) Cross Section

Notes:
- Existing actual dimensions vary. Typical dimensions are shown. Right-of-way varies from 80' to 85'. Roadway curb-to-curb width varies from 48' to 49'.
- Bike lanes will have dashed green paint at conflict zones.
- Existing functional width of sidewalks is much lower due to obstructions such as power poles and lighting. Obstructions will be relocated to landscape strip with proposed improvement.

- Provision of 4-foot bike lanes in both directions
- Installation/upgrade of pedestrian-scale lighting
- Dashed green striping for the bike lane in conflict zones
- Upgrade wayfinding with a consistent theme and style

The bike lanes cannot be extended to Central Avenue due to the provision of turn lanes to Central Avenue. In addition, the provision of a shared through-right turn lane and a dedicated right-turn lane on southbound Rio Grande Boulevard prevents the placement of a bike slot or extension of the bike lane to the intersection. Traffic analysis was performed to identify the feasibility of reducing the number of turn lanes on Rio Grande Boulevard or modifying lane assignments to eliminate the shared lane. However, that analysis found that any lane reductions or modifications would significantly increase traffic congestion and queuing at the intersection and along Rio Grande Boulevard. As an alternative to the depicted cross-section, a bike lane could be provided in one direction only, limiting the sidewalk/landscape impact. Further engineering design development, including a topographic survey, would be required to further assess the feasibility of the recommended cross-section or any variations at constraint points and in transition zones.

The recommended cross-section can be implemented without significantly affecting vehicular capacity. As noted earlier,

Rio Grande Boulevard, looking north towards Mountain Road

narrower lanes have been shown to reduce vehicle speeds. This may slightly reduce roadway capacity, but with the benefit of enhancing roadway safety.

The recommended cross-section does narrow the pedestrian realm on both sides of the street (3 feet on the west side and 1 foot on the east side); however, the effective width of pedestrian facilities may be increased by relocating utilities, lighting, and other obstructions into the landscape strip. This will be particularly beneficial on the east side of the street where a number of obstructions currently limit the desirability of the pedestrian facility. As part of this implementation, and consistent with the proposed improvements north of Mountain Road, upgrades would be made to the pedestrian-scale lighting, wayfinding, and landscaping to create a consistent feel and theme to Rio Grande Boulevard and the Old Town area.

Design Constraints

The Rio Grande Boulevard cross-section improvement would shift the roadway centerline to the west. This would likely require reconstruction of the full width of the roadway between Mountain Road and Hollywood Avenue. Further engineering analysis would be required to assess the impacts on utilities, the roadway cross-slope, and driveways along this segment. Survey would be required to confirm curb-to-curb widths, building locations, and resulting dimensions. The project would require coordination with utility companies to relocate utilities out of the pedestrian way.

Romero Street, looking south towards Old Town Plaza

Costs

Opinions of probable costs were developed for the proposed cross-section. The costs were split into two phases. The first phase, which could proceed prior to the roadway modification, would include lighting, wayfinding, and landscaping improvements. The estimate total cost for those improvements is **$470,000**. Those improvements would include the pedestrian environment but would not improve bicycle connectivity. The total cost to implement all improvements, including the roadway geometric modifications would be **$1,750,000**.

4.6.2 Old Town to Mountain Road Bicycle Improvements

Other alternatives were explored for closing the gap in the bicycle network between Mountain Road and Central Avenue besides just along Rio Grande Boulevard due to the constraints along that roadway. In additional to the need for regional connectivity, demand for a strong bicycle connection is generated by Old Town Albuquerque. The alternatives presented could be in addition to the recommended cross-section on Rio Grande Boulevard, or as an alternative means of providing a bicycle gap closure.

One bicycle gap closure alternative would be to provide striped and buffered bicycle lanes along Romero Street and San Felipe Street. Those two roadways form a vehicle couplet between Old Town and Mountain Road. Each street is a one-lane road with parking on one or both sides. The proposed configuration of the bicycle facilities is shown in **Figure 4-11**. To accommodate the buffered bike lanes, approximately 18 on-street parking spaces would need to be removed. These spaces are located along Romero Street north of Church Street and along San Felipe Street just south of Mountain Road. In addition to the buffers, green paint to denote conflict zones would be implemented as part of this alternative. Along San Felipe Street at the Mountain Road intersection, a bike box would also be provided to facilitate bike movements to the Mountain Road Bike Boulevard. The benefit of the parking removal and provision of buffered bike lanes would be to avoid conflicts between parking maneuvers and cyclists. Alternatively, the roads could be marked and signed as a bicycle route without any marked bike lanes. This would avoid any parking loss, but would not provide a similar level of benefit to the cyclists.

Design Considerations

The Romero Street/San Felipe Street striping improvements would result in the loss of approximately 18 parking spaces along those streets. No replacement parking has been identified as part of this project, although it is presumed to be shifted to nearby surface lots.

Costs

Opinions of probable costs were developed for the proposed improvements. The improvements consist exclusively of striping and signage and are of thus a comparatively lower cost. The estimated cost for the Romero Street and San Felipe Street bike lane improvements is **$80,000**.

4.6.3 San Pasquale Avenue to Old Town Bicycle Improvements

A third improvement option for connecting Mountain Road, Old Town, and Central Avenue is depicted in **Figure 4-12**. This improvement could be completed in conjunction with, or as an alternative to, the other identified bicycle improvements. This improvement would enhance bicycle connectivity across Central Avenue/Lomas Boulevard. The identified improvement would enhance the connection across Central Avenue through

Figure 4-11: Old Town Bike Couplet Improvements

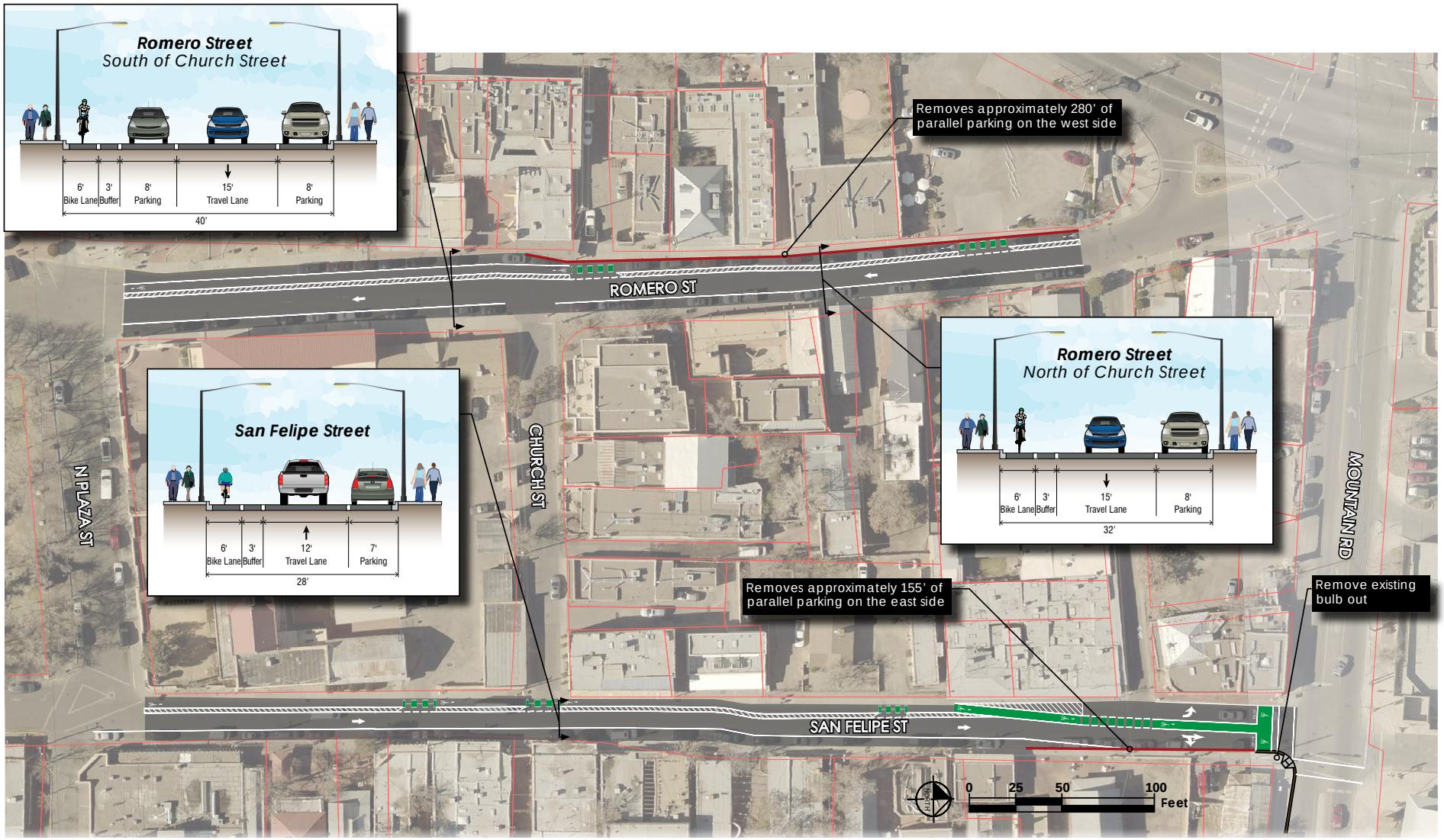
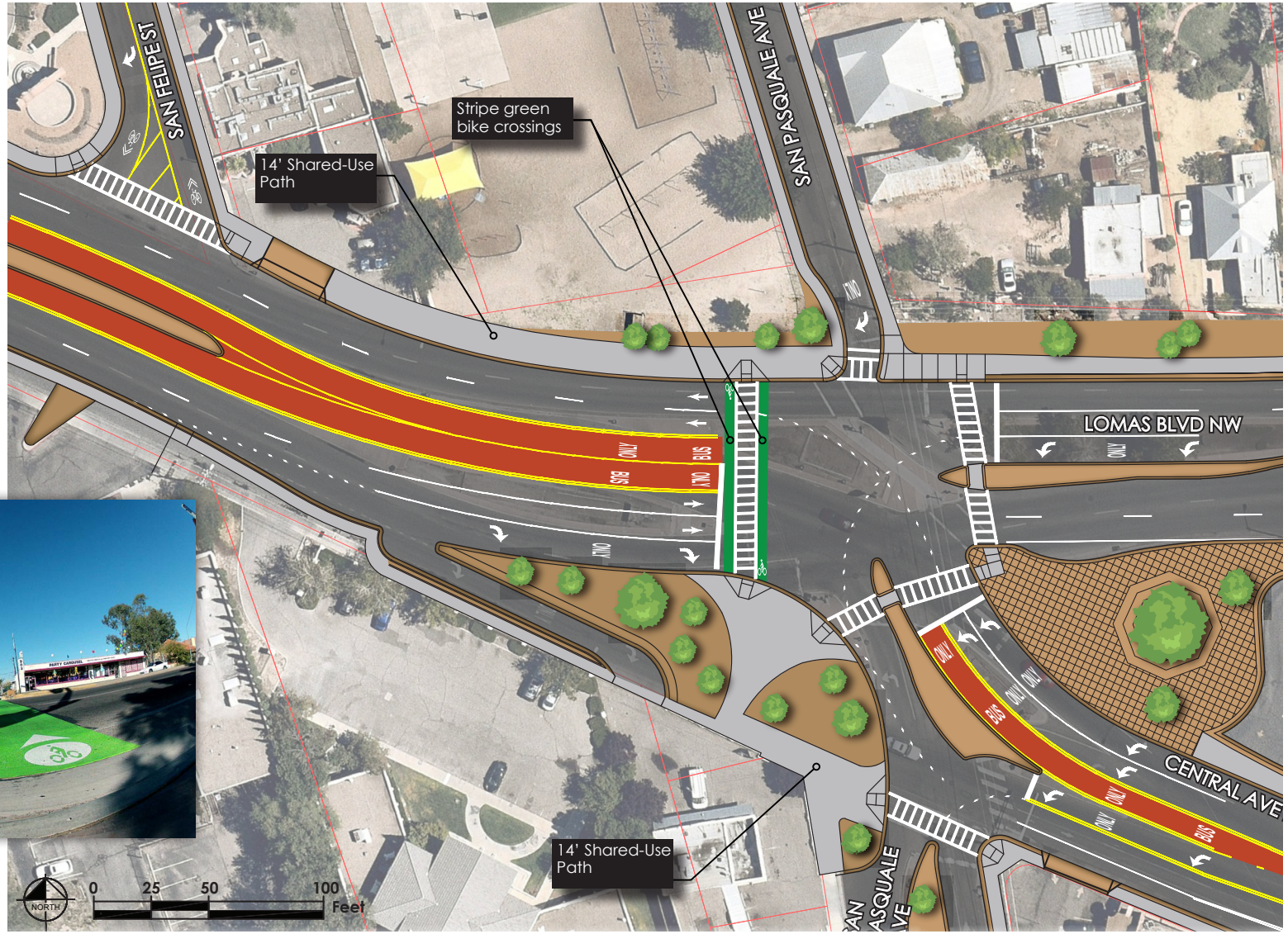


Figure 4-12: Central Avenue Crossing Improvement



Example of an enhanced bicycle crosswalk, from Tuscon, AZ

Image source: www.bicycletuscon.com

the provision of a bicycle crossing at the intersection and new shared-use paths. A shared-use path would connect San Pasquale Avenue to the Lomas Boulevard/Central Avenue intersection. This represents a slight modification to the proposed intersection reconfiguration concept included with the ART project. The shared-use path would connect to an enhanced crosswalk across Central Avenue that would allow cyclists in either direction to ride across the intersection. The enhanced crosswalk would connect to a new shared-use path that would run along Central Avenue to the west to San Felipe Street (approximately 250 feet in length). San Felipe Street, a two-way roadway, would include sharrows for improved bicycle safety to connect into Old Town and to Mountain Road. This improvement could work in conjunction with the buffered bicycle lane improvements identified for San Felipe Street and Romero Street.

In addition, the shared-use path along Central Avenue would also benefit cyclists on Cental Avenue wishing to access Old Town. Those cyclists would stay along the curb on westbound Central Avenue, turn left with vehicles at the Lomas Avenue signal, and then access the shared-use path in the northwest corner of that intersection, which then provides access to San Felipe Street.

Design Considerations

Providing a shared-use path will require a sliver of right-of-way along the north side of Central Avenue. The existing retail center at the corner of San Felipe Street and Central Avenue would lose one parking stall and the ability to access a second stall may be affected. A small amount of right-of-way (estimated at less than 10 square feet) may also be needed from the San Felipe de Neri School. The existing fence line of the school playground does not appear to match the parcel boundary, as it appears to extend into public right-of-way. Therefore, the school fence may need to shift by 6 feet, even in locations where right-of-way may not be required. A detailed survey will be required to assess property impacts from the proposed improvement. The improvements would need to be coordinated with the overall intersection improvements to ensure consistency and minimize additional costs.

Costs

The total estimated costs for the shared-use path and the enhanced crosswalk at this location is **$280,000**. This does not include the costs for the intersection improvements that will be constructed as part of the ART project. Some cost savings may be achievable by integrating this project in with the overall intersection improvements.

4.6.3 Central Avenue to San Pasquale Avenue/Rio Grande Boulevard Connection

The large intersection of Lomas Boulevard/Central Avenue/San Pasquale Avenue creates challenges for bicycle circulation. The improvements identified in **Figure 4-12** will improve connectivity across Central Avenue from San Pasquale Avenue and provide a safer alternative to connect between westbound Lomas Boulevard, westbound Central Avenue, and San Pasquale Avenue. To further enhance the connection from Central Avenue to bike facilities to the south, the following additional recommendations are provided:

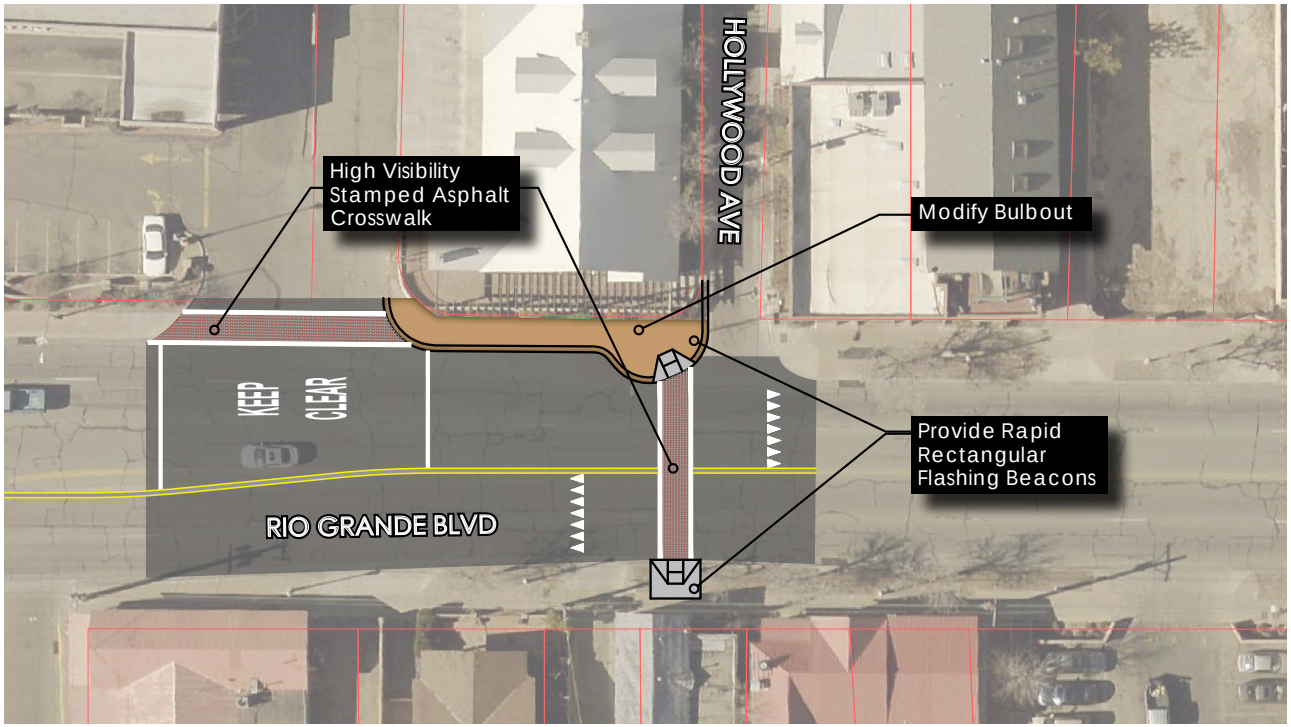
- Designate Alhambra Avenue as a bike route between Rio Grande Boulevard and San Pasquale Avenue.
- Designate San Pasquale Avenue as a bike route between Chacoma Place and Central Avenue. Additionally, explore the feasibility of designating bike lanes on San Pasquale Avenue between Laguna Boulevard and Central Avenue.
- Designate a bike box on westbound Central Avenue in advance of the westbound left-turn lane from Central Avenue to San Pasquale Avenue. Note that this still requires cyclists to merge across auto traffic and the bus lane to access the bike box. Cyclists could alternatively use upstream (Laguna Boulevard) or downstream facilities (the designated bike crossing across the west leg of the intersection) to complete this movement.

4.7 Hollywood Avenue Crossing Improvements

Old Town on the east side of Rio Grande Boulevard and retail uses on the west side of Rio Grande Boulevard generate pedestrian demand for crossing Rio Grande Boulevard. Jaywalking was observed to be a common occurrence between the Walgreens driveway and South Plaza Street. Currently there are no marked pedestrian crossings of Rio Grande Boulevard between Central Avenue and Mountain Road, a distance of approximately 1,200 feet. One of the project objectives was to improve the opportunities and comfort of crossing Rio Grande Boulevard. Hollywood Avenue was identified as the best location for a mid-block crossing location given its proximity to the Old Town Plaza on the east, Walgreens to the west, and that it is located on a tangent section of roadway (benefiting sight distance). It is also located just north of where the southbound turn lanes to Central Avenue begin, allowing for a shorter crossing of Rio Grande Boulevard than points south.

The proposed improvement at this location is shown in **Figure 4-13**. Improvements include a RRFB along with high visibility stamped asphalt crosswalks and pedestrian ramps with bulbouts. High visibility crosswalks are also recommended across the wide driveway to the Walgreens just south of Hollywood Avenue to make the pedestrian crossing more visible. The other improvement included in this area is a "Keep Clear" zone marking on southbound Rio Grande Boulevard to facilitate vehicular movements out of the Walgreens driveway. Extensive queuing is experienced in the peak hours along southbound Rio Grande Boulevard in this location, extending back from the Central Avenue intersection.

Figure 4-13: Hollywood Avenue Crossing Improvements



Looking south on Rio Grande Boulevard at Hollywood Avenue

Costs

The opinion of probable costs estimate for this improvement is **$180,000**.

4.8 South of Central Avenue Improvements

The segment of Rio Grande Boulevard south of Central Avenue is predominantly residential and has a different characteristic than the corridor north of Central Avenue. Rio Grande Boulevard south of Central Avenue is designated as a local street with a speed limit of 25 mph. On-street parking is also allowed on both sides of the roadway and there are multiple single-family dwelling unit driveways directly on the corridor. San Pasquale Avenue is a parallel roadway east of Rio Grande Boulevard. It provides access to the Albuquerque Little Theater and intersects both Chacoma Place and Alhambra Avenue. Improvements to both Rio Grande Boulevard and San Pasquale Avenue are considered to enhance bicycle connectivity, improve safety, and maintain vehicle connectivity with the planned modifications to the Central Avenue/Lomas Avenue/San Pasquale Avenue intersection.

4.8.1 Rio Grande Boulevard between Central Avenue and Alhambra Avenue

Improvements are proposed along Rio Grande Boulevard south of Central Avenue to reduce vehicle speeds and improve the pedestrian environment. These improvements consist of:

- Removing the double yellow centerline stripe to make the roadway striping more consistent with a residential street
- Striping a parking lane to reduce the perceived width of the roadway
- Adding bulbouts at the Willis Place and New York Avenue intersections to reduce the pedestrian crossing distance, improve crosswalk visibility, and further calm traffic
- Reducing the roadway width just north of Alhambra Avenue by extending the curb to create a straight curb line.

The proposed improvement at this location is shown in **Figure 4-14**.

Costs

An opinion of probable costs for the identified improvements was prepared. This indicates a projected cost of **$300,000**. A significant portion of the cost estimate is associated with re-paving of the roadway.

Looking north on Rio Grande Boulevard from Alhambra Avenue

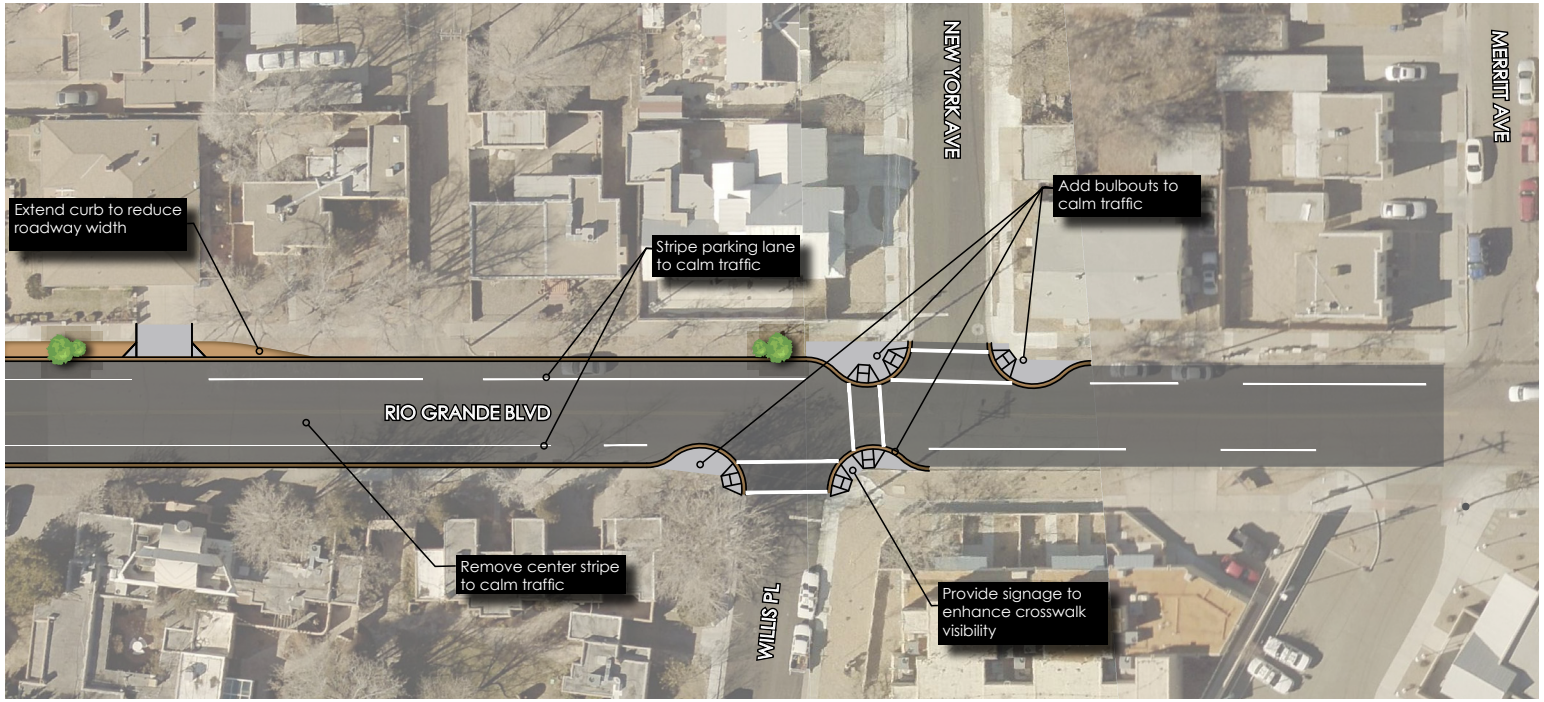


Figure 4-14: Rio Grande Boulevard between Central Avenue and Alhambra Avenue Improvements

4.9 Rio Grande Boulevard/Alhambra Avenue/ Chacoma Place Intersection Improvements

The intersection of Rio Grande Boulevard/Alhambra Avenue/ Chacoma Place is currently an offset intersection with movements along Rio Grande Boulevard and Chacoma Place controlled by stop signs and movements along Alhambra Avenue uncontrolled. This configuration creates driver confusion, as there is uncertainty on yielding behavior. In addition, the uncontrolled movements on Alhambra Avenue create some speeding concerns. The intersection lacks marked crosswalks and pedestrian ramps are only provided at the northwest and northeast corners of the intersection. Pedestrian ramp improvements were recently constructed at the northwest and northeast corners of the intersection.

Traffic volumes through this intersection are anticipated to moderately increase with the planned modifications to the San Pasquale/Central Avenue intersection. A designated bike route passes through the intersection along Alhambra Avenue (west of Chacoma Place) and Chacoma Place. Peak-hour counts only indicated one bicycle traveling through the intersection in each of the morning and evening peak periods, although field observations identified additional cycling activity.

Three alternative configurations are proposed for this intersection. All of the alternatives include the following improvements:

- Construct bulbouts at the northeast and northwest intersection corners and provide new directional ramps to cross Alhambra Avenue.
- Convert intersection to all-way stop-controlled
- Provide pedestrian ramps and sidewalk connections at both the southwest and southeast corners of the intersection

Looking north towards Alhambra Avenue along Chacoma Place

Looking northwest along Alhambra Avenue

These improvements would serve to benefit pedestrians by narrowing the roadway width, providing new pedestrian ramps, adding new sidewalks, and stopping currently uncontrolled traffic on Alhambra Avenue. All improvements also improve vehicular safety by shifting the Chacoma Place approach to better align with Rio Grande Boulevard and converting the intersection to an all-way stop control, reducing driver confusion. The conversion to an all-way stop may also benefit cyclists on Chacoma Place and Rio Grande Boulevard.

As a separate improvement to calm traffic on Alhambra Avenue, speed humps are proposed to be implemented between Rio Grande Boulevard and San Pasquale Avenue.

Alternative 1 is the preferred concept at this location as it is most effective at eliminating the offset. The other alternatives would provide fall-back options if the right-of-way needed for Alternative 1 cannot be acquired.

Looking southeast from Rio Grande Blvd to Chacoma Pl

4.9.1 Alhambra Avenue/Chacoma Place Improvement Alternative 1 – Re-Align Chacoma Place (Preferred)

Alhambra Avenue/Chacoma Place Improvement Alternative 1 is depicted in **Figure 4-15.** As shown in the figure, in addition to the improvements noted above, this alternative would shift the alignment of Chacoma Place to the west via a horizontal curve beginning approximately 220 feet south of Alhambra Avenue. This would eliminate or significantly reduce the existing intersection offset and skew. The existing concrete/dirt island currently west of Chacoma Place would be removed and replaced by a larger curb extension east of Chacoma Place. The new curb area would include sidewalks, pedestrian ramps, and potentially some landscaping. Right-of-way on the west side of Chacoma Place would be required for the shift of Chacoma Place.

Traffic and Multimodal Circulation

A traffic analysis was performed to evaluate the conversion of the intersection to all-way stop-controlled operation. The worst movement of the existing intersection is the southbound approach on Rio Grande Boulevard, which operates with 10.0 seconds of delay in the AM and 9.1 seconds of delay in the PM in future baseline conditions. With conversion of the intersection to all-way stop control, it will operate with an average delay (all movements) of 8.0 seconds in the AM and 7.4 seconds in the PM. Thus, the conversion to all-way stop control is not anticipated to create a significant traffic impact.

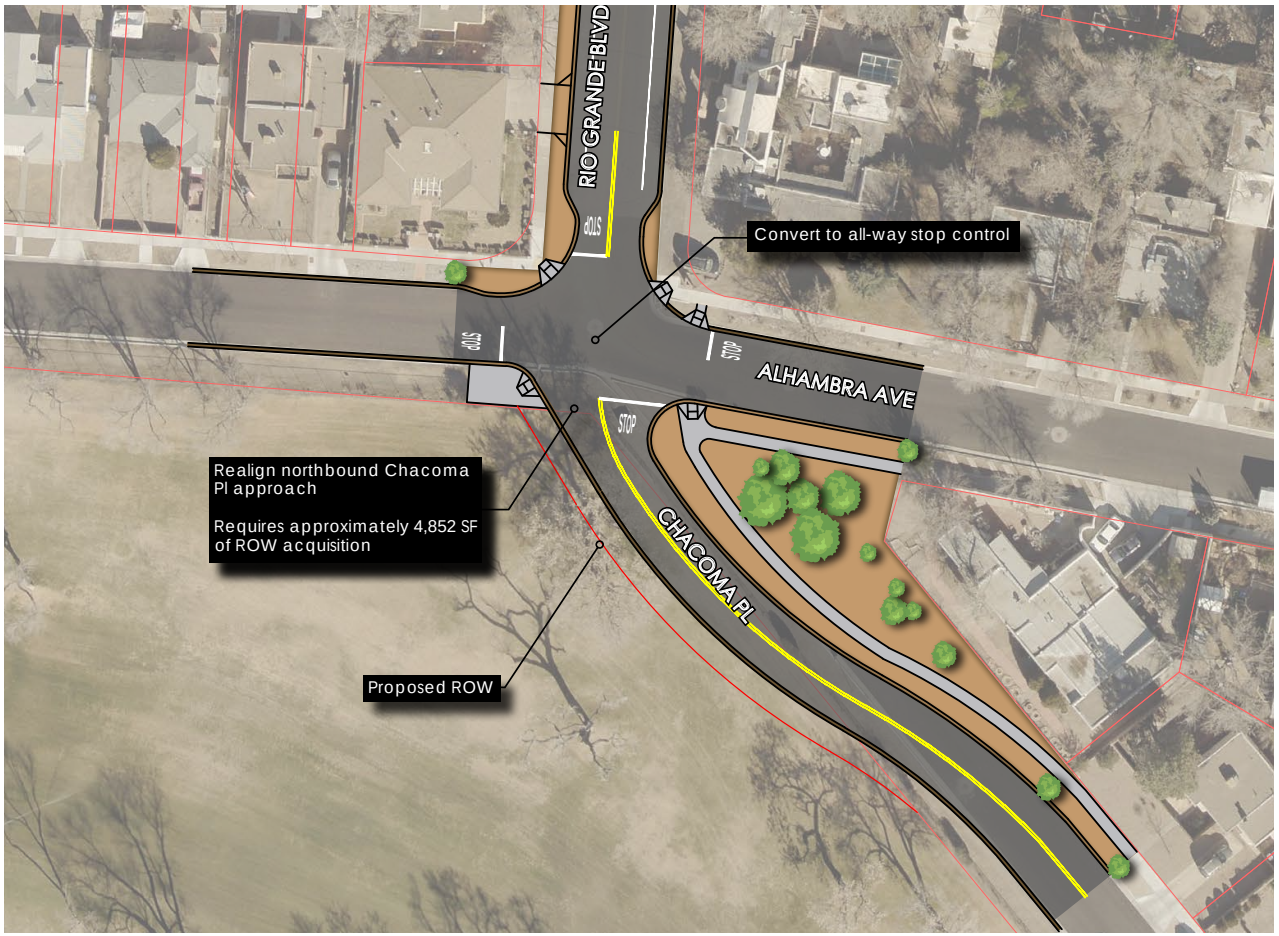
Design Considerations

This improvement requires approximately 4,850 square feet of right-of-way from the Albuquerque Country Club in order to re-align Chacoma Place. The right-of-way appears to be outside the main playing area of the golf course. It would require relocating the existing chain-link boundary fence of the golf course. Further design development is required to identify if a nearby tree would be affected.

Costs

The opinion of probable costs estimate for the Alternative 1 improvement is **$580,000**.

Figure 4-15: Alhambra Avenue/Chacoma Place Improvement Alternative 1 (Preferred)



4.9.2 Alhambra Avenue/Chacoma Place Improvement Alternative 2 – Minor Intersection Modifications

Alhambra Avenue/Chacoma Place Improvement Alternative 2 is depicted in **Figure 4-16.** As shown in the figure, in addition to the improvements noted above, this alternative would re-align Chacoma Place to intersection Alhambra Avenue closer to the Rio Grande Boulevard intersection. This would allow the intersection to be converted to an all-way stop control. The re-alignment of the roadway would only extend roughly 150 feet south of Alhambra Avenue and no right-of-way would be required. However, unlike Alternative 1, this alternative would create a major skew at the intersection where Chacoma Place would not intersect Alhambra Avenue at a 90-degree angle and would result in a sizable offset through the intersection for movements between Rio Grande Boulevard and Chacoma Place. In addition, it would create a pork-chop to separate the northbound right-turn movement from Chacoma Place to Alhambra Avenue from the northbound left-turn and through movement. This is needed due to the skew in the Chacoma Place approach. All movements would be stop-controlled. The existing concrete/dirt island currently west of Chacoma Place would be removed, although, unlike Alternative 1, there would no major modification to the existing east curb along Chacoma Place.

Traffic and Multimodal Circulation

The operation of this intersection in terms of traffic delay is anticipated to be virtually identical to Alternative 1. There is no significant traffic impact associated with this alternative.

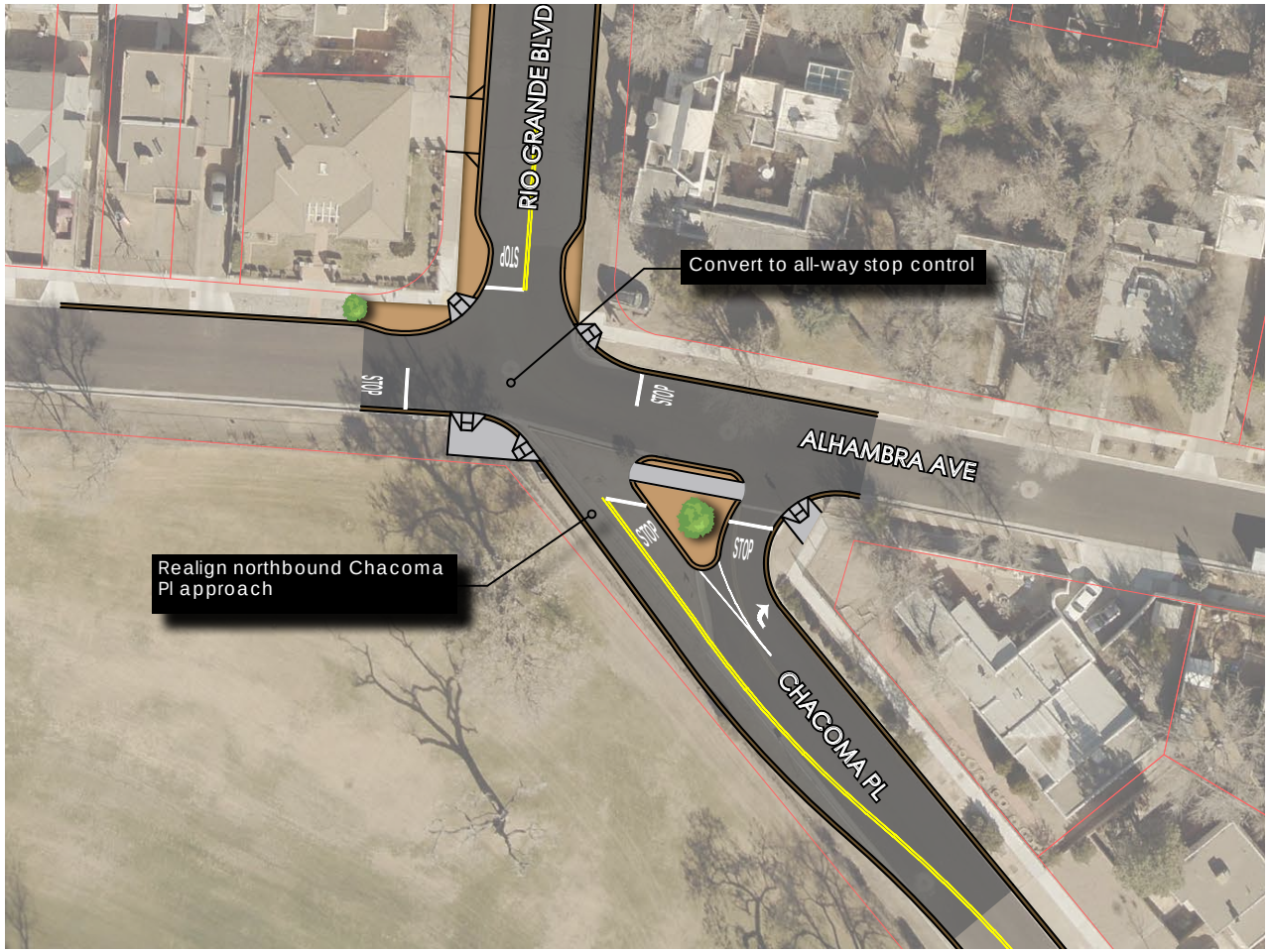
Design Considerations

This improvement does not require any right-of-way from the golf course; however, it does not provide safety benefits to the level of Alternative 1. It is not anticipated to require relocating the existing chain-link boundary fence or any tree removal. Further design development is necessary to fully identify potential roadway drainage ramifications with this concept.

Costs

The opinion of probable costs estimate for the Alternative 2 improvement is **$360,000**.

Figure 4-16: Alhambra Avenue/Chacoma Place Improvement Alternative 2



4.9.3 Alhambra Avenue/Chacoma Place Improvement Alternative 3 – One-Way Circulation

Alhambra Avenue/Chacoma Place Improvement Alternative 3 is depicted in **Figure 4-17.** As shown in the figure, in addition to the improvements noted above, this alternative would preclude southbound access to Chacoma Place from Rio Grande Boulevard and Alhambra Avenue. Southbound movements on Chacoma Place would be allowed beginning at the first driveway south of Alhambra Avenue. Northbound movements from Chacoma Place to Alhambra Avenue and Rio Grande Boulevard would be preserved.

The elimination of southbound movements to Chacoma Place from Rio Grande Boulevard and Alhambra Avenue allows for the re-alignment of Chacoma Place to eliminate the intersection offset as in Alternative 1, but without any right-of-way acquisition required. However, as in Alternative 2, there would still be a substantial skew for the Chacoma Place intersection leg. Similar to Alternative 2, this alternative includes a pork-chop island that allows for northbound right-turn movements from Chacoma Place to Alhambra Avenue.

Two-way bicycle travel would be maintained along the full extent of Chacoma Place, with a designated southbound bicycle lane extending from the Alhambra Avenue intersection, transitioning to sharrows where the roadway becomes two-way again.

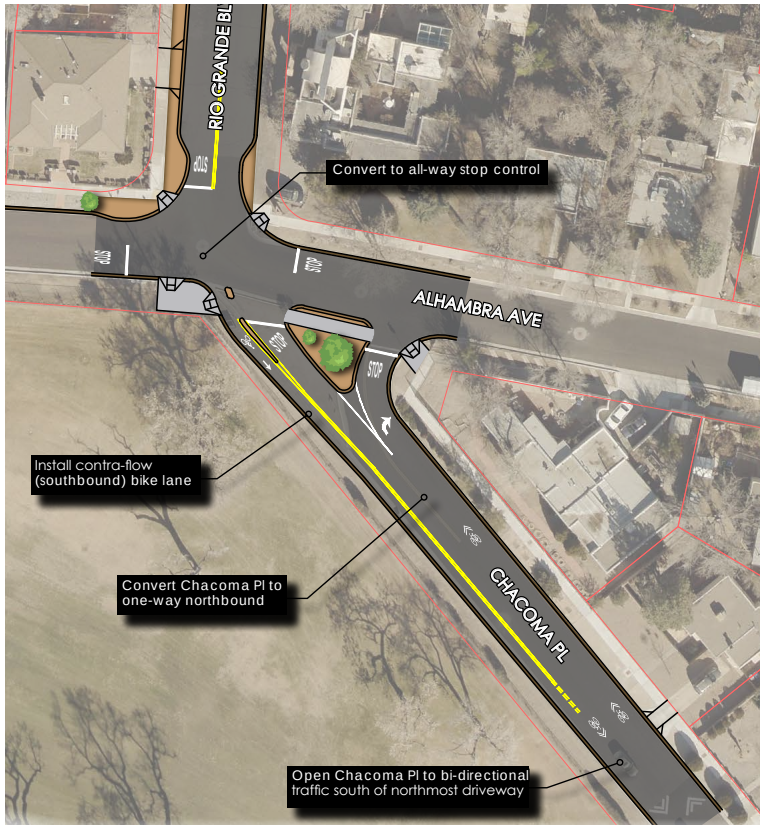
This would allow the intersection to be converted to an all-way stop control. No re-alignment of Chacoma Place would be required other than removal of the existing concrete/dirt area at the intersection.

Traffic & Multimodal Circulation

This alternative would be similar to the other two alternatives, except without any vehicular movements to Chacoma Place from Alhambra Avenue and Rio Grande Boulevard. Currently, approximately 160 vehicles make the southbound movement to Chacoma Place in the AM peak hour and 30 vehicles make that movement in the PM peak hour. These vehicles would be re-routed along Alhambra Avenue to the San Pasquale Avenue and Alhambra Avenue intersection, where they would then use San Pasquale Avenue to access Chacoma Place (for local Chacoma Place residents) or continue on San Pasquale Avenue. It would essentially preclude the existing cut-through pattern of traffic from eastbound Alhambra Avenue and southbound Rio Grande Boulevard using Chacoma Place to access southbound San Pasquale Avenue. This would serve to significantly reduce traffic volumes on Chacoma Place, making it a more desirable bicycle route. It would increase traffic volumes on Alhambra Avenue between Chacoma Place and San Pasquale Avenue.

The San Pasquale Avenue and Alhambra Avenue intersection is forecast to operate with a side-street delay of 9.3 seconds in the AM and 11.0 seconds in the PM in the future baseline condition. With this modification, the intersection delay is forecast to increase to 9.9 seconds in the AM and remain at 11.0 seconds in the PM. Thus, there is not anticipated to be a significant impact to San Pasquale Avenue and Alhambra Avenue intersection delay.

Figure 4-17: Alhambra Ave/Chacoma Place Improvement Alternative 3



Design Considerations

This improvement does not require any right-of-way from the golf course nor would it require relocating the existing chain-link boundary fence or any tree removal. Further coordination with property owners along Chacoma Place, Alhambra Avenue, and San Pasquale Avenue would be required due to changes in traffic patterns along those streets that would result.

Costs

The opinion of probable costs estimate for the Alternative 3 improvement is **$120,000**.

4.10 San Pasquale Avenue/Chacoma Place Intersection Improvements

San Pasquale Avenue is a parallel facility east of Rio Grande Boulevard. It is included in this corridor study because traffic patterns may change at the San Pasquale Avenue and Alhambra Avenue intersection when future improvements are implemented at the San Pasquale Avenue/Central Expressway intersection. Consideration was also given to the presence of the Albuquerque Little Theater which has parking lot driveways on San Pasquale Avenue between Alhambra Avenue and Chacoma Place.

This assessment determined that the diversion generated by the improvements along Central Expressway would not significantly affect this intersection. Only the northbound through and left-turn movements will be impacted with the proposed configuration at the Central Avenue and San Pasquale Avenue intersection and those volumes are currently and are projected to remain low. The Albuquerque Little Theater primarily operates during off-peak hours and on the weekends when adjacent street traffic is much lower than during the AM and PM peak hours.

The San Pasquale Avenue/Chacoma Place intersection, looking south on San Pasquale Avenue

However, this study did consider improvements to this intersection to enhance auto, bicycle, and pedestrian safety. The intersection currently has a wide expanse of unmarked pavement. San Pasquale Avenue is 60 feet wide even though it only provides one travel lane in each direction. The wide roadway expanse encourages speeding. In addition, the two Chacoma Place legs of the intersection are offset from each other, with the western leg entering the intersection at a skew. The intersection is currently an all-way stop-controlled intersection. But, driver behavior is not always predictable due to the offset and skew at the intersection. These geometric challenges create a potential hazard for pedestrians crossing San Pasquale Avenue and for vehicles turning between San Pasquale Avenue and Chacoma Place. Pedestrian ramp improvements were recently constructed at the northwest and southwest corners of the intersection.

Two alternatives were developed for this intersection. They reflect different configurations of raised medians and channelization. The goal of both improvements is to better define the travel way to reduce vehicular conflicts. They also include bulbouts and median refuges to shorten pedestrian crossing distances and provide protection for pedestrians crossing the street.

Alternative 2 is preferred is it achieves similar safety benefits with less impact to existing circulation patterns than Alternative 1.

4.10.1 San Pasquale Avenue/Chacoma Place Improvement Alternative 1 – Conversion to Two-Way Stop Control

San Pasquale Avenue/Chacoma Place Improvement Alternative 1 is depicted in **Figure 4-18.** This alternative includes a number of median strips and median enlargements to channelize several movements at the intersection. In addition, the intersection would be converted to a side-street stop-controlled intersection (stop control on Chacoma Place only). Through movements on San Pasquale Avenue would not be required to stop. The provision of new medians would limit eastbound Chacoma Place (west leg of the intersection) to right-turn only to southbound San Pasquale Avenue. The left-turn and through movements only had a combined four vehicles in the AM peak hour and three vehicles in the PM peak hour. These vehicles would likely shift to using Alhambra Avenue to access San Pasquale Avenue, which would require limited out-of-direction travel. All other movements would still be preserved.

The raised medians would reduce the perceived width of the roadway, potentially reducing vehicle speeds and providing potential opportunities for additional landscaping.

A bulbout would be provided to extend the curb on the south side of Chacoma Place to reduce the skew of Chacoma Place and to reduce the pedestrian crossing distance. An acceleration lane would be provided to allow westbound Chacoma Place vehicles to make their turn to San Pasquale Avenue in two stages, first waiting for a gap in northbound traffic, followed by accelerating to merge with southbound traffic. This would improve safety for left-turn movements from westbound Chacoma Place. Left-turn movements from San Pasquale Avenue to Chacoma Place would be channelized to allow left-turn movements in opposite directions to occur simultaneously.

Traffic and Multimodal Circulation

Traffic analysis was performed on the configuration proposed in Alternative 1, which includes the conversion to a two-way stop-controlled intersection. The intersection in its current configuration is projected to operate with 7.7 seconds of delay in the AM peak hour and 8.4 seconds of delay in the PM peak hour with future baseline conditions. With the two-way stop-controlled operation, the intersection is forecast to operate with 7.4 seconds of delay in the AM peak hour and 11.6 seconds of delay in the PM peak hour with future conditions. The delays for the two-way stop-controlled operation are for westbound Chacoma Place traffic only. Traffic on San Pasquale Avenue would not stop and delay for eastbound Chacoma Place traffic would be less. Therefore, this improvement would not cause a significant traffic impact at this intersection.

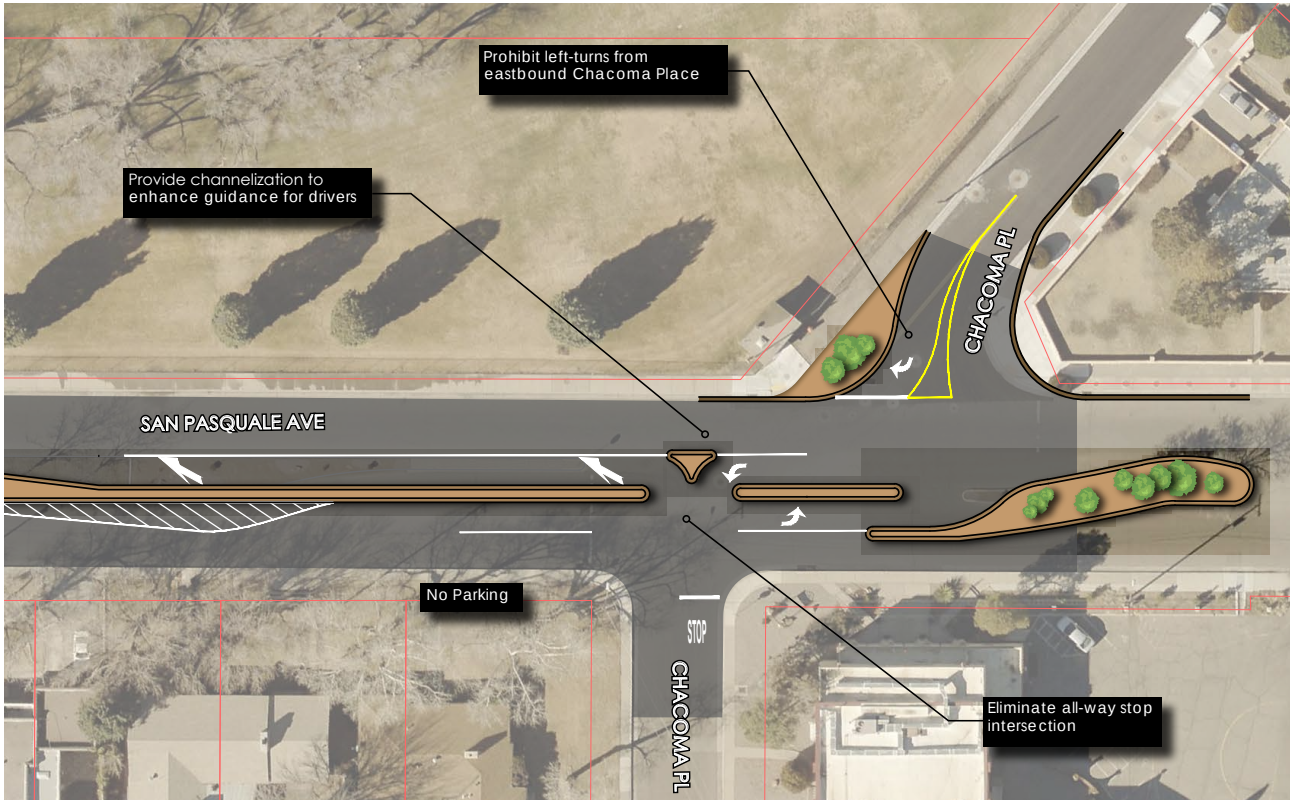
Design Considerations

This alternative could affect two trees currently in the San Pasquale Avenue median south of Chacoma Place. Additional location for median street trees is provided with this alternative. Further design development will be required to develop drainage solutions with the bulb-out and additional medians. The improvement would require the loss of approximately five parking spaces along the east side of San Pasquale Avenue just south of Chacoma Place.

Costs

The opinion of probable costs estimate for the Alternative 1 improvement is **$120,000**.

Figure 4-18: San Pasquale Avenue/Chacoma Place Improvement Alternative 1



4.10.2 San Pasquale Avenue/Chacoma Place Improvement Alternative 2 – Preservation of All-Way Stop Control (Preferred)

San Pasquale Avenue/Chacoma Place Improvement Alternative 2 is depicted in **Figure 4-19.** This alternative includes enlargement of the existing medians. The intersection would be maintained as all-way stop-control; however, the stop bar on northbound San Pasquale Avenue would be shifted north to the west leg of Chacoma Place. Left-turn movements from westbound Chacoma Place to southbound San Pasquale Avenue would be precluded. This movement was used by one vehicle in each of the AM and PM peak hours. These vehicles would be able to access points south by heading east on Chacoma Place to Laguna Boulevard, which intersects San Pasquale Avenue less than 1/4 mile south of Chacoma Place. All other movements would be preserved, including movements across San Pasquale Avenue along Chacoma Place.

A bulbout would be provided to extend the curb on the south side of Chacoma Place to eliminate the skew of Chacoma Place and to reduce the pedestrian crossing distance.

The improvements would eliminate issues generated by the existing offset intersection and would reduce the size of the all-way stop intersection. The enlarged raised medians would reduce the perceived width of the roadway, potentially reducing vehicle speeds and providing potential opportunities for additional landscaping.

These improvements would not generate any significant changes to traffic delay at this intersection.

Design Considerations

The improvement would require the loss of approximately five parking spaces along the east side of San Pasquale Avenue just south of Chacoma Place.

Costs

The opinion of probable costs estimate for the Alternative 2 improvement is **$65,000**.

Figure 4-19: San Pasquale Avenue/Chacoma Place Improvement Alternative 2 (Preferred)

5. STAKEHOLDER MEETINGS

Stakeholder and community input was a key factor in identifying and evaluating the improvements included in this project. The project seeks to make Rio Grande Boulevard a Complete Street by improving its functionality and safety for all users. The roadway also provided an opportunity to create a community entry point, creating a sense of arrival and place in the Old Town Albuquerque area. Incorporating feedback from the users of the street, adjacent property owners, and nearby residents was therefore fundamental in ensuring that the improvements developed met the project purpose.

The first stakeholder involvement element of the project was a stakeholder charrette. This charrette was valuable in obtaining feedback from stakeholders on the greatest needs of the corridor and potential types of improvements that may be effective. The second stakeholder involvement element was a community meeting. The community meeting was an opportunity to present the initial improvement alternatives and obtain direct feedback on those alternatives from attendees. Additional community outreach was performed by the City in the form of individual meetings with adjacent business owners, residents, and other corridor advocates.

5.1 Stakeholder Charrette

The stakeholder charrette was held on Wednesday, September 2, 2015 at 3:30 PM at the Hotel Albuquerque at Old Town, which is located within the project study area. Invited parties included residents, business owners, and property owners along the Rio Grande Boulevard corridor. The purpose of the charrette was to introduce the project to the stakeholders, provide an idea of the type of improvements that will be considered as part of the project, and obtain stakeholder feedback on the corridor's greatest needs and specific areas for improvement. Approximately 20 stakeholders attended the meeting.

The meeting began with a presentation from the project team explaining the planning context of the project, including the relationship to previous studies conducted for Rio Grande Boulevard. The concept of "complete streets" was explained during the presentation to orient the audience on the intended nature and goals of the project. Specific complete streets infrastructure examples were presented, including enhanced bicycle facilities, wider sidewalks with landscaped buffers, median treatments, and enhanced pedestrian crossings. Current deficiencies along Rio Grande Boulevard identified by the project team were discussed with the audience along with preliminary ideas of possible solutions. The PowerPoint presentation used at the charrette is included in **Appendix C**.

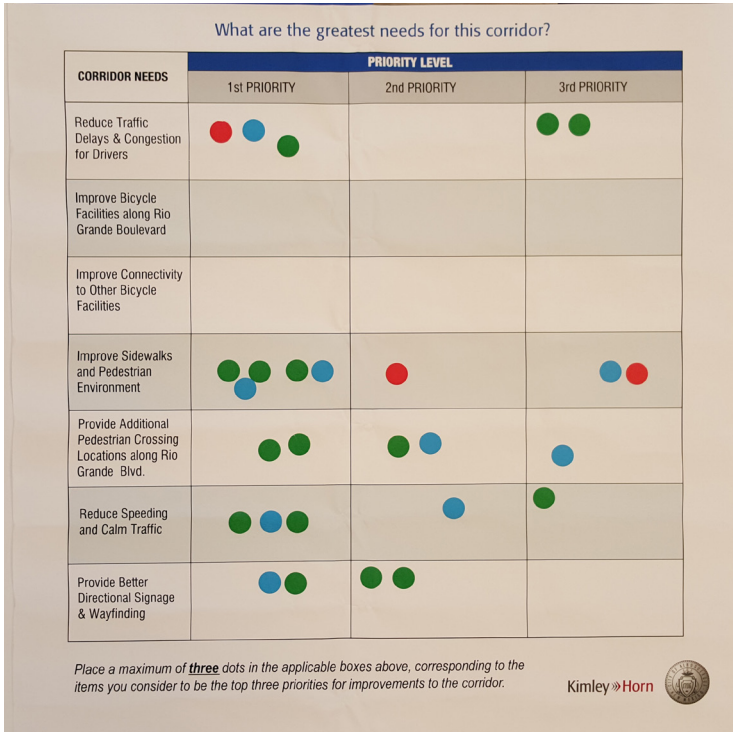
Following the presentation, an interactive open house was conducted for attendees to provide feedback on the project and corridor needs. The intent was for the project team to understand the needs of corridor users. Participants provided direct feedback on corridor priorities by placing a dot indicator on a board provided (see **Figure 5-1** at right). The following priorities were indicated:

- **First Priority:** Improve sidewalks and pedestrian environment
- **Second Priority:** TIE: Reduce speeding and calm traffic AND Reduce traffic delays and congestion for drivers

Additional feedback obtained outside of the interactive board survey was recorded for the project team's use. Common themes were concerns about:

- Lack of walkability of the corridor
- Safety of pedestrians at roadway crossings (particularly given the amount of truck traffic)
- General traffic volume increases
- High speeds on the corridor
- Propensity of pedestrians to illegally cross the corridor at mid-block locations

Figure 5-1: Stakeholder Charette Prioritization Feedback



The quality of the corridor sidewalks and frontages were also noted as less than attractive for many users in terms of comfortability and aesthetic quality. Members also indicated the need for more and better signage and to beautify the corridor to create a gateway to Old Town.

Additional feedback was received after the meeting via emails to City staff. Emails expressed additional concerns about the Rio Grande Boulevard/Mountain Road intersection, the comfort of bicycle facilities along the roadway, and narrow sidewalks along the roadway.

5.2 Community Meeting

The second stakeholder meeting was held on Thursday, March 10, 2016 from 6:00 PM to 7:30 PM at the Albuquerque/Bernalillo County Government Center Building in the City of Albuquerque. The purpose of the meeting was to present the proposed corridor alternatives developed by the project team and elicit feedback from the community. Approximately 22 people attended the meeting.

The meeting began with a presentation from the project team that included a summary of feedback received at the stakeholder charrette, discussion of goals and objectives of the study, a summary of existing corridor conditions, and a brief explanation of the improvements proposed. Actual traffic volumes, speed survey data, and collision history were explained to the public in addition to the bicycle circulation and usage in and around the corridor. The PowerPoint presentation used at the community meeting is included in **Appendix D**.

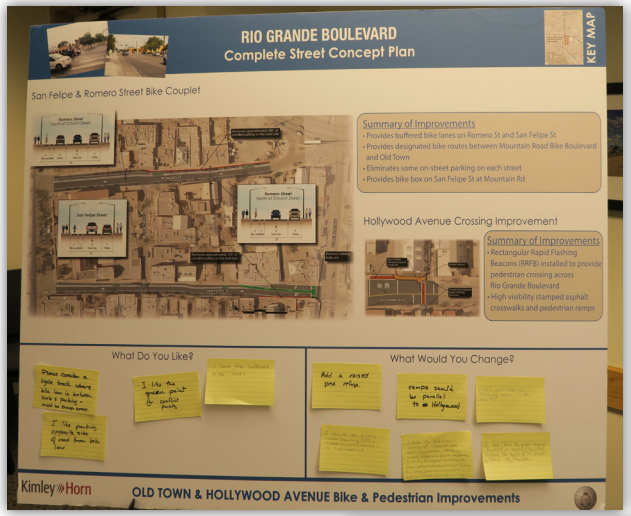
Following the presentation, attendees reviewed each of the proposed alternatives, which were displayed on boards at the back of the room. Project team members were available to answer questions about the improvements and the study in general. Attendees were encouraged to write and post notes with their feedback directly on the boards. Photos of the boards are depicted in **Figure 5-2**.

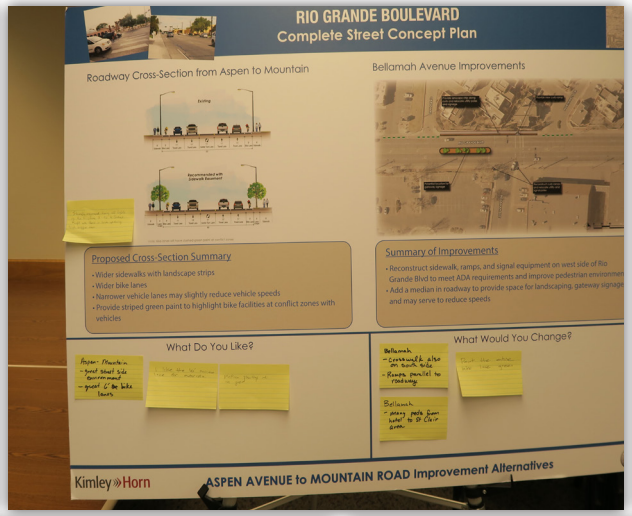
Written feedback provided from the public was documented and utilized to refine the alternatives and select a preferred alternative at locations where alternatives were provided. Feedback from attendees and from follow-up emails to city staff is noted below:

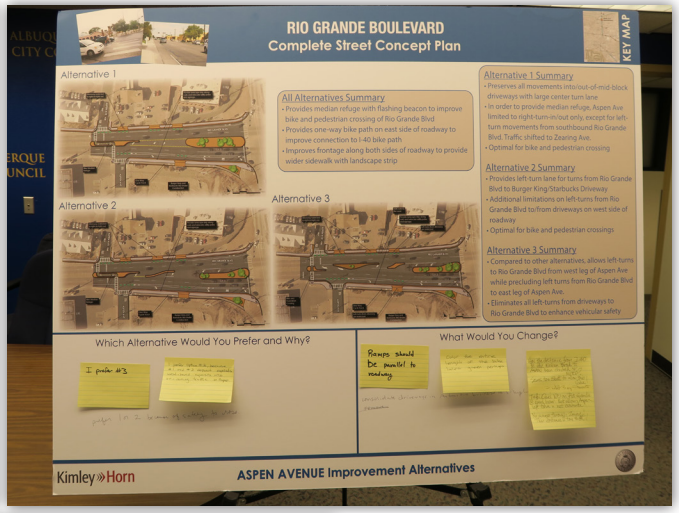
- Aspen Avenue: Preference from some attendees for either Alternative 1 or Alternative 3
- Aspen Avenue: Paint the bike lanes green throughout the area instead of just at conflict zones
- Aspen Avenue: Ensure the spacing between the I-40 ramps and the proposed Aspen Avenue improvements are adequate as queues traveling southbound along Rio Grande Boulevard may increase with added traffic and new developments
- Bellamah Avenue: Provide an additional crosswalk on the south side of the intersection
- Aspen Avenue to Mountain Road Cross-Section: Positive reaction on several elements of the cross-section, including the wide bike lanes, the buffered sidewalk, the narrow travel lanes, and the median landscaping
- Mountain Road: Preference for roundabout
- Mountain Road: Bicycle detection is needed in the signal alternative
- Old Town Bike Couplet: Positive reaction on the green paint and separating the parking from the bike lane
- Old Town Bike Couplet: Suggestion of a cycle track
- Hollywood Pedestrian Crossing: Suggestion of a raised pedestrian table and pedestrian refuge
- Hollywood Pedestrian Crossing: Concerns about the placement of the pedestrian crossing
- Alhambra/Chacoma Intersection: Consider striping a bike lane and parking lane on Alhambra and Chacoma
- Alhambra/Chacoma Intersection: Enthusiasm for all three alternatives with some expressing preference for Alternative 1
- Alhambra/Chacoma Intersection: Provide speed bumps/tables on Rio Grande Boulevard between Central and Alhambra
- Alhambra/Chacoma Intersection: Leave the roadway configuration as it is as it represents a traffic calming device, but implement the pedestrian improvements only

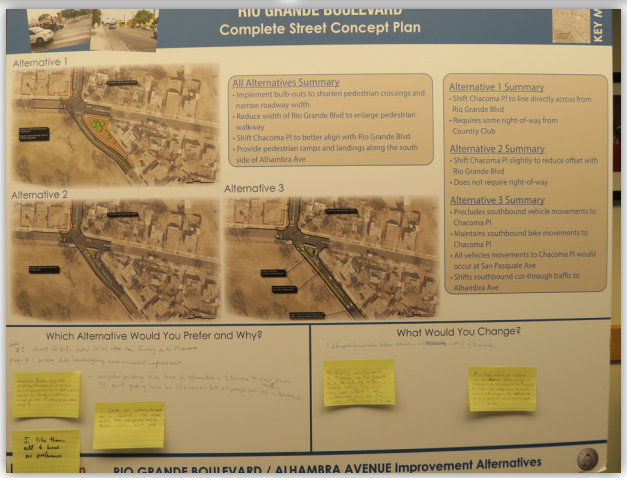
Some attendees suggested considering alternative north-south bicycle connections east of Old Town. It was suggested that north-south travel on streets east of Old Town was easier and thus more desirable for cyclists. In general, attendees supported the many bicycle and pedestrian improvements as they were consistent with their primary goals of lowering speeds and enhancing safety.

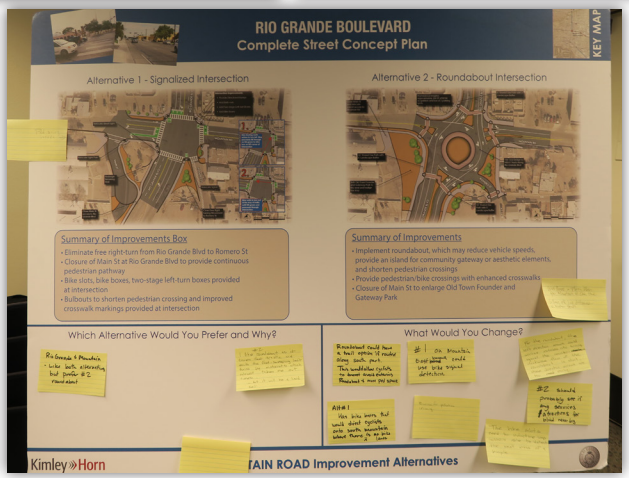
Figure 5-2: Community Meeting Feedback Boards











5.3 Additional Stakeholder Meetings

City staff met with business owners in the Aspen Avenue area to review the improvement alternatives and obtain feedback on the proposed changes to driveway access. Feedback from those meetings indicated:

- Support for Aspen Avenue Alternative 3, although a modification was requested to improve access to the Old Town Auto driveway
- Support of improvements to pedestrian circulation across Rio Grande Boulevard, notably at Aspen Avenue and at Bellamah Avenue
- Support for roundabout concept at Mountain Road
- Request for improved lighting and sidewalks beneath I-40 interchange

5.4 Refinements to Alternatives

Several refinements were made to the initial alternatives after receiving input from the City, the community, and business owners adjacent to the corridor. Most of the refinements were relatively minor and provided additional enhancements to pedestrian and bicycle facilities. The refinements are reflected in the concepts documented in Chapter 4 and included the following:

- Aspen Avenue to Mountain Road Cross-Section: Reduction in the lane widths from 11 feet to 10 feet to provide room for wider bike lanes. This may assist in vehicular speed reduction while also enhancing the bicycle facility via the buffer
- Aspen Avenue to Mountain Road Cross-Section: Provide a second median island with enhanced landscaping treatment near Pueblo Bonito Court. This provides an additional opportunity for landscaping (supported by the adjacent hotel system), wayfinding, and aesthetic enhancement
- Rio Grande Boulevard at Bellamah Avenue: Provide a pedestrian crosswalk across the south leg of the intersection and add bulbouts. This improves pedestrian circulation crossing both Rio Grande Boulevard and Bellamah Avenue In addition, added entryway framed landscaping treatment across Bellamah as an aesthetic enhancement
- Mountain Road to Hollywood Avenue Cross-Section: This was a new improvement concept to respond to community input to provide a bicycle connection between Central Avenue and Mountain Road along Rio Grande Boulevard, enhance the streetscape aesthetic, and improve sidewalk conditions
- Central Avenue Crossing Enhancements: This was a new improvement concept to respond to bicycle community input. There was a desire to improve the connection across Central Avenue to enhance the ability to utilize the lower speed/lower volume streets east of Rio Grande Boulevard as an alternative to Rio Grande Boulevard south of Mountain Road
- Rio Grande Boulevard from Central Avenue to Alhambra Avenue: This was a new improvement concept to respond to community input. The striping improvements and bulb-outs may serve to reduce speeds and improve the pedestrian environment
- San Pasquale Avenue and Chacoma Place Intersection: Alternative 2 was added as a less intensive project alternative that better channelizes vehicle movements while enhancing safety

6. IMPROVEMENTS SUMMARY AND NEXT STEPS

The Rio Grande Boulevard Complete Street Concept Plan project has identified a number of improvements along Rio Grande Boulevard and nearby streets to meet the goals and objectives of the community. These include improvements that will serve to enhance the unique community context of Old Town, improve bikeability and walkability, calm traffic, and enhance connectivity. The alignment of proposed improvements with project goals is identified here:

Promote safety and traffic calming along the corridor:

- Proposed cross-sections for Rio Grande Boulevard would narrow travel lanes, which has been shown to reduce vehicle speeds
- A roundabout at Mountain Road will serve to reduce vehicle speeds, lowering severe crash potential
- New channelization in the Aspen Avenue area will better direct vehicle traffic and reduce the potential for turn-related collisions
- New medians near Bellamah Avenue and Pueblo Bonito Court will serve to reduce the perceived width of the roadway, thereby reducing vehicle speeds
- New striping between Alhambra Avenue and Central Avenue and limited roadway narrowing may reduce vehicle speeds and calm traffic
- Reduction of the intersection skew and offset and provision all-way stop at Rio Grande Boulevard/Alhambra Avenue/ Chacoma Place will reduce vehicle speeds and collision potential
- New speed humps on Alhambra Avenue to reduce vehicle speeds and cut-through traffic
- New channelization at the San Pasquale Avenue/Chacoma Place intersection will reduce vehicle speeds and the potential for turn-related collisions

Improve Walkability:

- A well-signed crosswalk with a median refuge at Aspen Avenue will provide a new way to cross Rio Grande Boulevard
- A new crosswalk on the south leg of the Rio Grande Boulevard/Bellamah Avenue intersection with a median refuge will provide a new, safer way to cross Rio Grande Boulevard
- Proposed cross-sections for Rio Grande Boulevard between Mountain Road and I-40 include wider sidewalks with a landscape buffer for a better pedestrian environment
- Relocation of utilities out of the pedestrian way throughout the corridor will increase the effective width of sidewalks
- Bulbouts at Bellamah Avenue, Mountain Road, Hollywood Avenue, New York Avenue/Willis Place, and Alhambra Avenue will reduce pedestrian crossing distances and increase pedestrian visibility, improving safety
- A new pedestrian crossing at Hollywood Avenue, accompanied by enhanced pavement markings/pavers and a rapid rectangular flashing beacon will provide an additional opportunity to cross Rio Grande Boulevard and may
reduce jaywalking
- New pedestrian facilities, including pedestrian ramps and walkways, on the south side of Alhambra Avenue at Rio Grande Boulevard will improve accessibility
- Improved pedestrian-scale lighting throughout the corridor will improve pedestrian comfort and safety
- A diverging diamond interchange or widening of the sidewalks beneath I-40 will enhance the pedestrian environment and improve safety

Improve bicycle circulation and connectivity:

- A new crossing of Rio Grande Boulevard, combined with a new one-way cycle track between Aspen Avenue and the I-40 Trail will close a critical gap in the regional bicycle network
- Dashed green paint in conflict areas will increase yielding to cyclists and reduce vehicle intrusion into bicycle lanes
- A buffered bike lane between Aspen Avenue and Mountain Road will improve bicycle comfort and reduce vehicle intrusion into the bicycle lanes
- Buffered bike lanes and a bike slot on Romero Street and San Felipe Street will provide a safer bicycle connection between the Mountain Road Bike Boulevard, bike lanes on Rio Grande Boulevard north of Mountain Road, and Old Town Albuquerque
- Modifications to the Main Street configuration at Mountain Road will reduce vehicular conflicts on both Mountain Road and Rio Grande Boulevard
- A roundabout at Mountain Road will reduce vehicle speeds through the intersection
- A diverging diamond interchange will provide wider bicycle facilities with fewer vehicle conflicts through the I-40 interchange
- New shared use paths and a new bicycle crossing near the intersection of Central Avenue/San Pasquale Avenue will improve north-south bicycle connectivity across Central Avenue
- Designate Alhambra Avenue as a bicycle route between Rio Grande Boulevard and San Pasquale Avenue

Provide opportunities for placemaking:

- Proposed cross-sections for Rio Grande Boulevard between Mountain Road and Aspen Avenue provide new opportunities for landscaping along the corridor
- Replace pedestrian-scale lighting and extend it throughout the corridor, improving lighting and establishing a consistent feel throughout the corridor
- New landscaping throughout the corridor adjacent to sidewalks provides an opportunity to enhance the corridor aesthetic
- New wayfinding and signage locations throughout the corridor and upgrade existing signage where inconsistent, providing an opportunity to create a consistent theme and corridor feel
- New median islands at Bellamah Avenue and Pueblo Bonito Court provide an opportunity for entryway signage, landscaping, wayfinding, and extension of the Old Town community theme across Rio Grande Boulevard
- Modifications to the Main Street/Mountain Road/Rio Grande Boulevard configuration will include opportunities to enhance access to the Old Town Albuquerque statue and increase the functionality and desirability of the Old Town Founder and Gateway Park

6.1 Preferred Improvements

Several locations had multiple improvements alternatives proposed. At some of these locations, a preferred alternative has been identified through technical analysis, community feedback, and stakeholder input. At other locations, further design development or stakeholder coordination will be required to identify a preferred alternative. **Table 6-1** summarizes the preferred alternatives or identifies locations where further work will be required to identify a preferred solution. Full-page graphics depicting the preferred improvements are included in **Appendix A**.

Table 6-1: Summary of Preferred Improvements

Location	Summary of Improvements	Cost	Notes for Implementation
I-40 Interchange	Diverging diamond interchange OR improvements to existing sidewalks. Further analysis required	TBD	Requires further traffic analysis, design development, analysis of existing interchange engineering, and coordination with New Mexico DOT
Aspen Avenue	Mid-block crossing, left-turn channelization, cycle-track, and sidewalk improvements (3 alternatives)	$1.05M - $1.29M	May require further coordination with businesses on driveway access. Will require utility coordination for pole relocation.
Cross-Section between Aspen Avenue and Mountain Road	Narrow travel lanes, buffered bike lanes, dashed green bike lanes at conflict areas, and landscape strip to buffer sidewalks, relocation of utilities to reduce obstructions, lighting, signage and wayfinding	Phase 1 - $90,000 Ultimate - $2.46M	Buffered bike lanes require striping modification only and can be implemented in a near-term phase. Landscape strip and other landscape improvements will require right-of-way from adjacent property owners and may be implemented in the longer term
Bellamah Avenue	Sidewalk improvements, median island, new crosswalk, bulbouts	$480,000	Will require coordination with adjacent property owners on landscaping improvements
Pueblo Bonito	Median island	$75,000	Will require coordination with adjacent property owners on landscaping improvements
Mountain Road	Roundabout with accompanying channelization and shared use paths, closure of Main Street and modification to property access Alternative: Maintain signal but provide bicycle and pedestrian striping improvements, bulbouts, and modification of Main Street configuration	$2.69M Alternative: $1.33M	Will require coordination with adjacent property owners and some right-of-way acquisition. No right-of-way required for signal alternative.
Cross-Section between Mountain Road and Hollywood Avenue	Narrow travel lanes, provide bike lanes with dashed green paint at conflict areas, shift curb location, modify landscaping and lighting, relocation of utilities to reduce obstructions, lighting, signage, and wayfinding	Phase 1 - $470,000 Ultimate - $1.75M	Modifications to the curb to provide bike lanes are likely to be a longer-term improvement. Relocation of utilities, improved lighting and wayfinding can proceed in the near-term. Near-term improvements require coordination with utility companies
Hollywood Avenue	New crosswalk, RRFB, and pavement improvements	$180,000	
Striping between Central Avenue and Alhambra Avenue	Removal of centerline stripe, addition of parking stripe, bulbouts, crosswalk improvements	$300,000	
Alhambra Avenue/Chacoma Place	Re-alignment of Chacoma Place, conversion to an all-way stop control, addition of bulbouts and pedestrian facilities (3 alternatives)	$120,000 - $580,000	May require right-of-way acquisition and coordination with adjacent property owner. Alternatives do not require right-of-way.
San Pasquale Avenue/ Chacoma Place	Median island enhancements, channelization, and bulbouts (2 alternatives)	$65,000 - $120,000	Coordination with nearby property owners on circulation and on-street parking modifications
North-South Bike Improvements	Buffered bike lanes on Romero Street and San Felipe Street AND/OR shared-use path and bike crossing improvements at Central Avenue/San Pasquale Avenue	Up to $360,000	Requires further coordination with the bicycle community and Old Town business owners to assess desirability of solutions

Costs are in current year dollars and include a 30% contingency

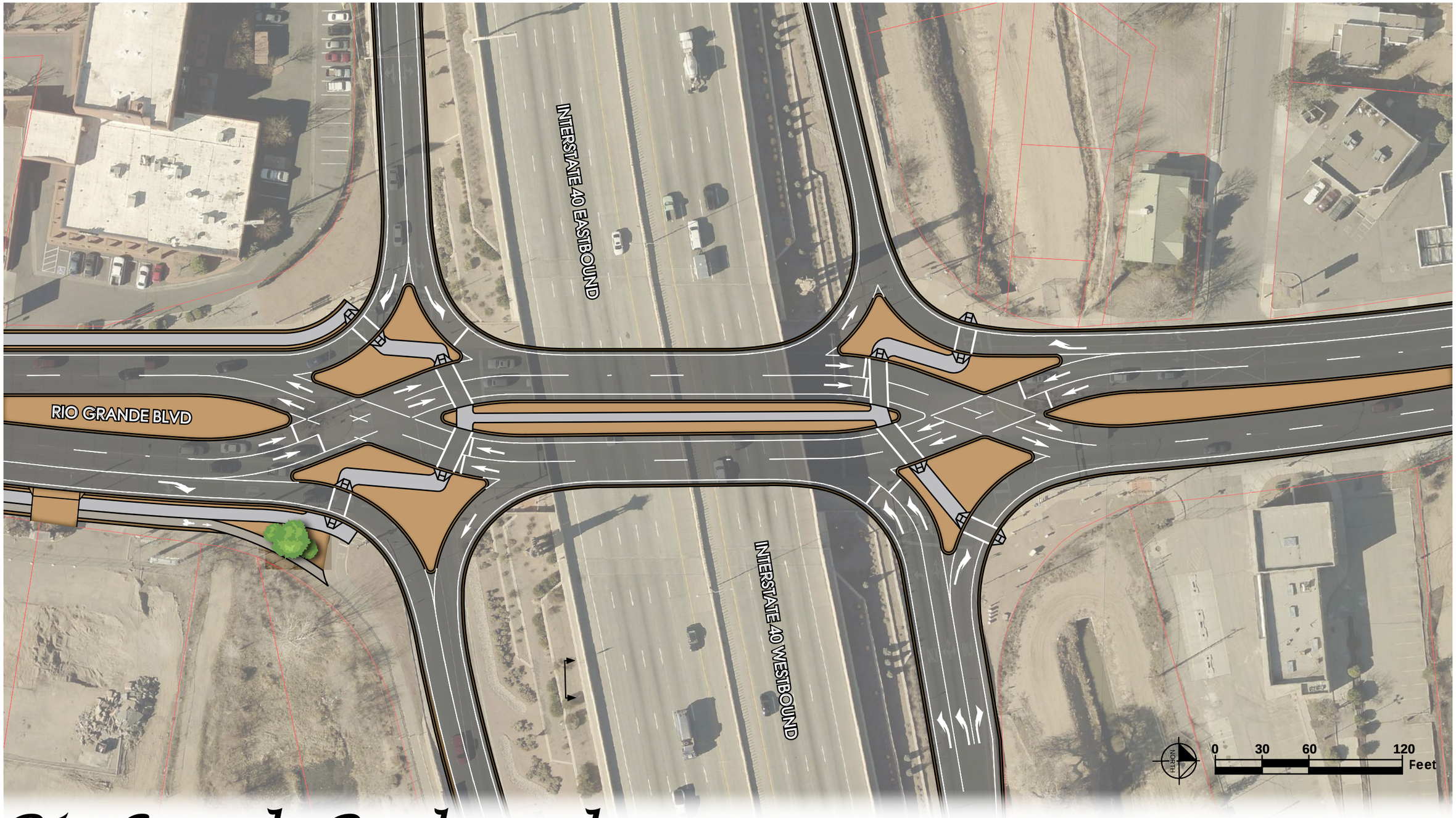
6.2 Next Steps

All improvements will require further design development and refinement. The improvements have thus far been developed to a conceptual level only, based on aerial photography and field observations. Further design development, including topographical survey and utility investigation, will allow for refinement of the cost estimates and may result in modifications to the improvements. Additional stakeholder outreach is recommended for some alternatives to get further input on design details or select between improvement alternatives.

Funding will need to be identified to continue design development and proceed to implementation for the identified improvements.

APPENDIX A: PREFERRED IMPROVEMENT CONCEPTS

DIVERGING DIAMOND INTERCHANGE AT RIO GRANDE BLVD AND INTERSTATE 40



Rio Grande Boulevard

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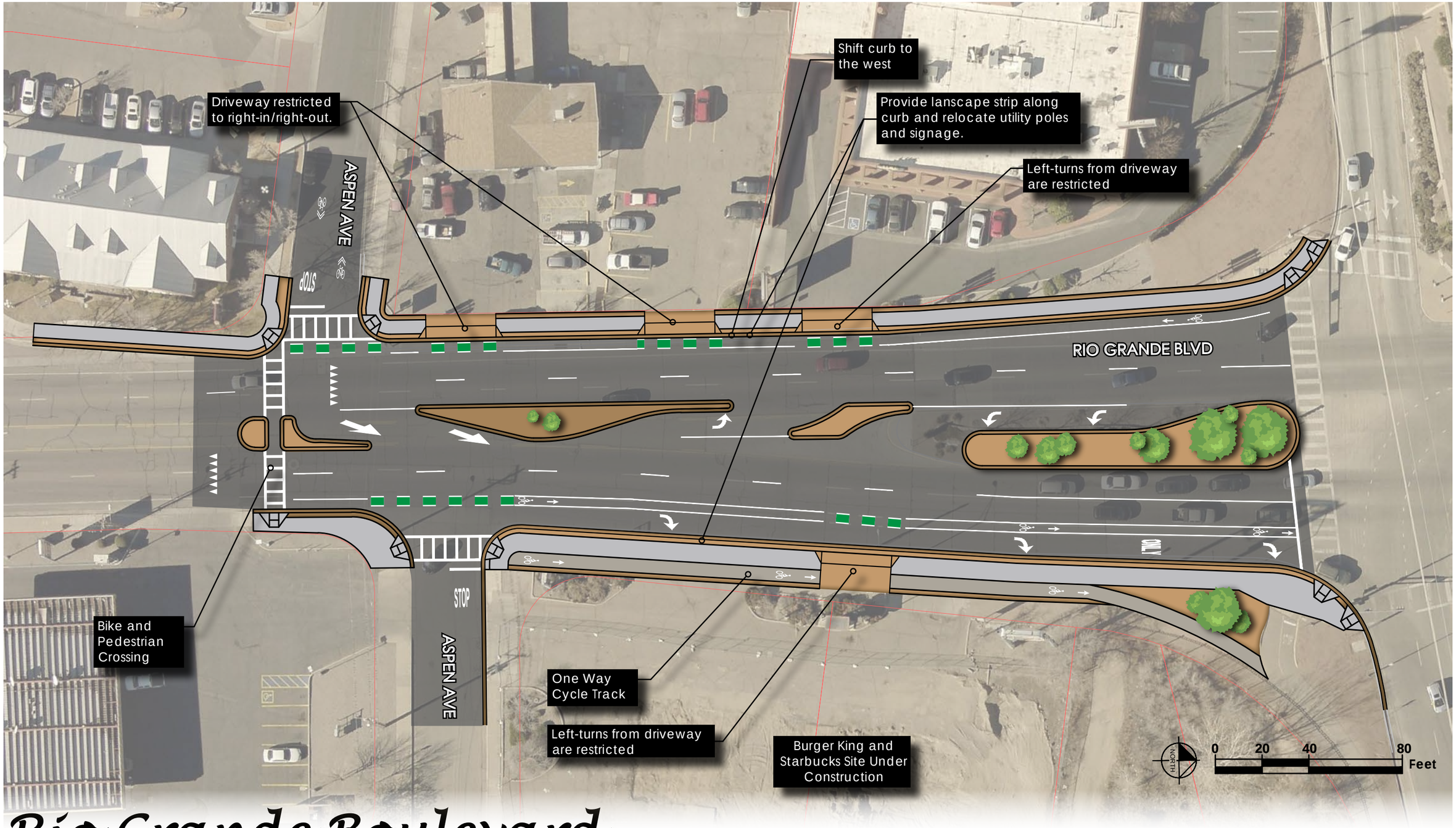
RIO GRANDE BOULEVARD AT ASPEN AVENUE - ALTERNATIVE 3



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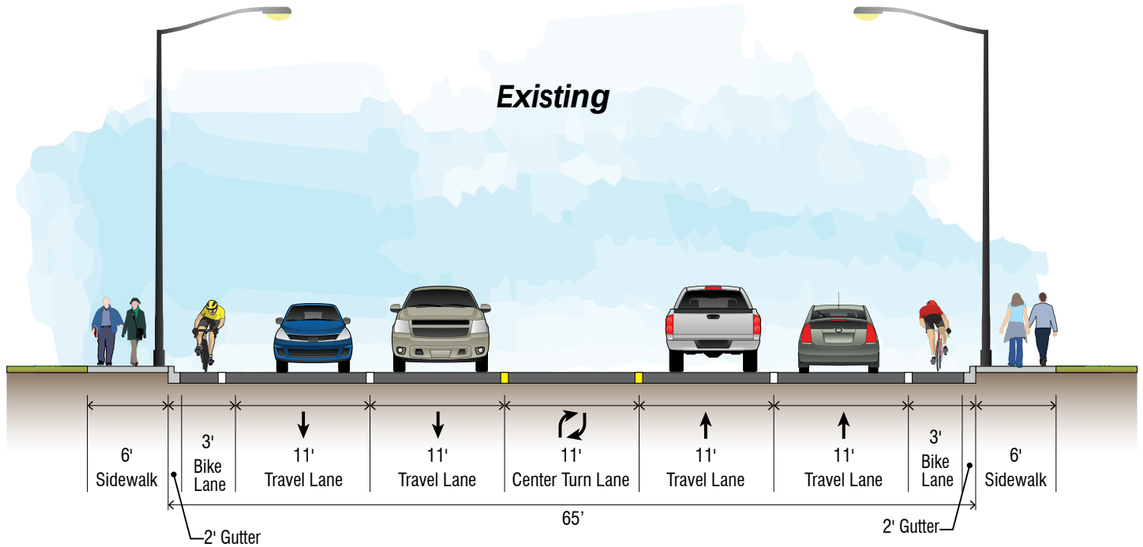
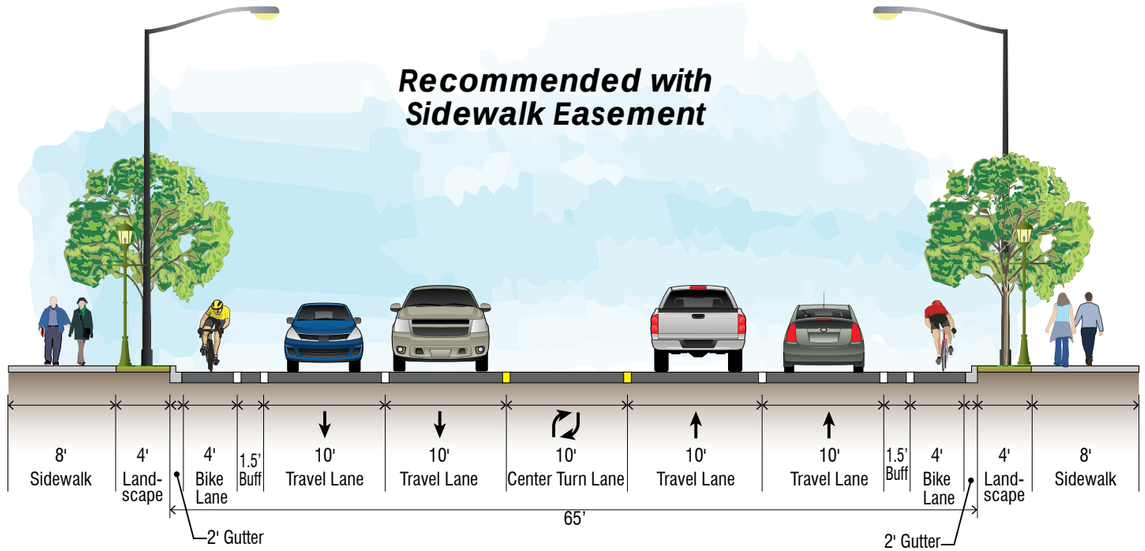
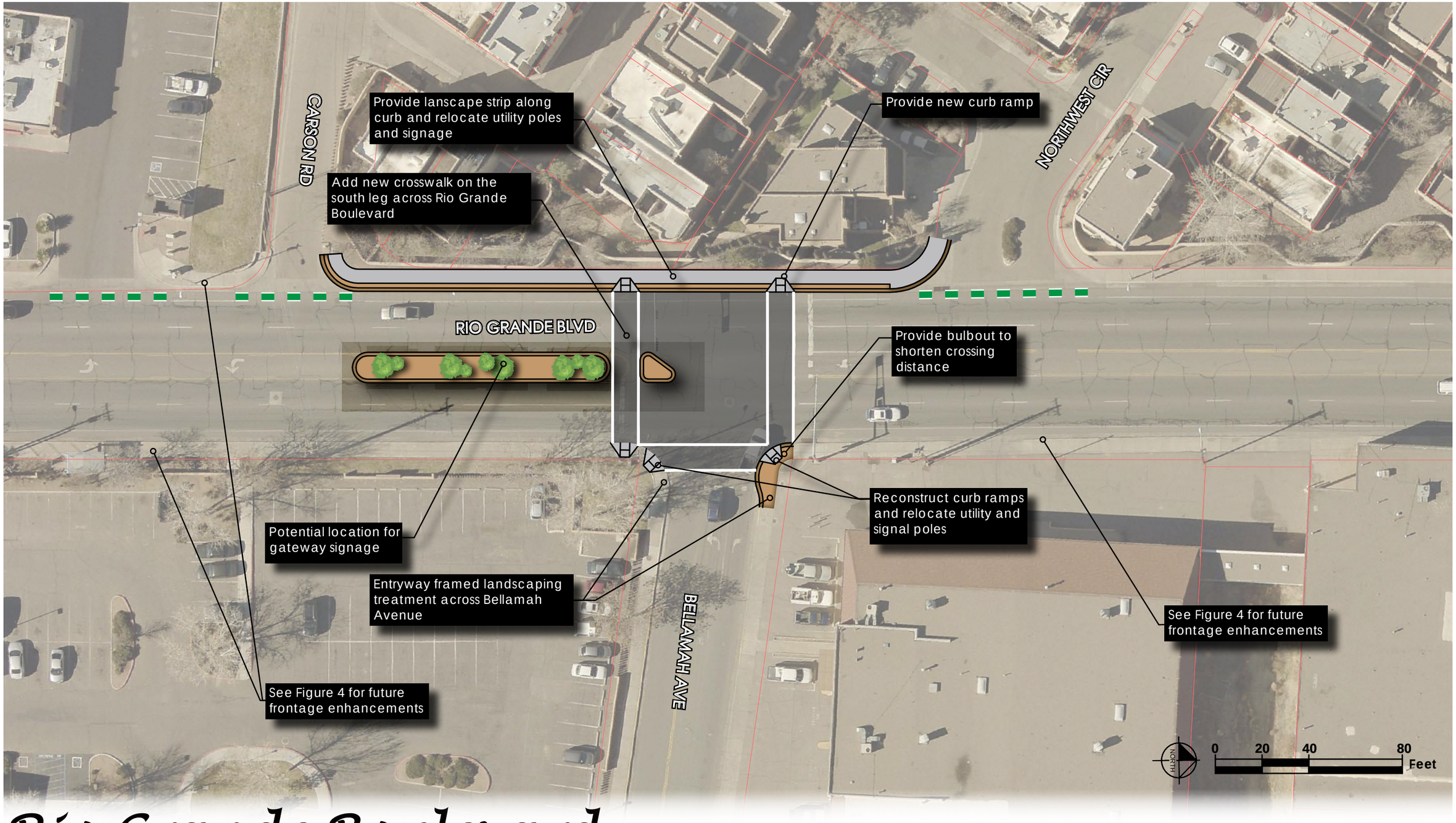
RIO GRANDE BOULEVARD - RECOMMENDED FUTURE CROSS SECTION
ASPEN AVENUE TO MOUNTAIN ROAD





Note: Bike lanes will have dashed green paint at conflict zones

RIO GRANDE BOULEVARD AT BELLAMAH AVENUE



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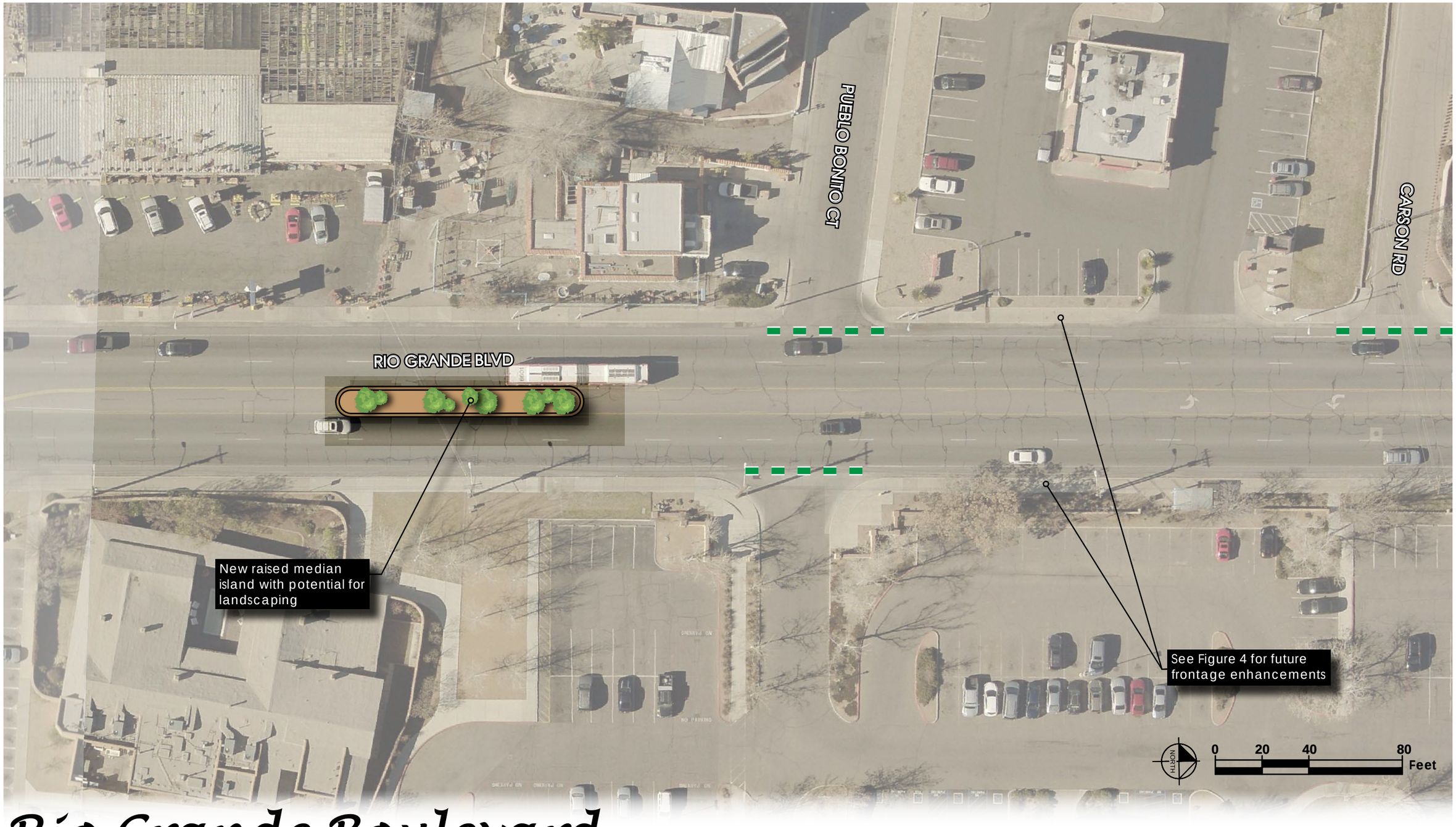
RIO GRANDE BOULEVARD BETWEEN BELLAMAH AVENUE AND MOUNTAIN ROAD



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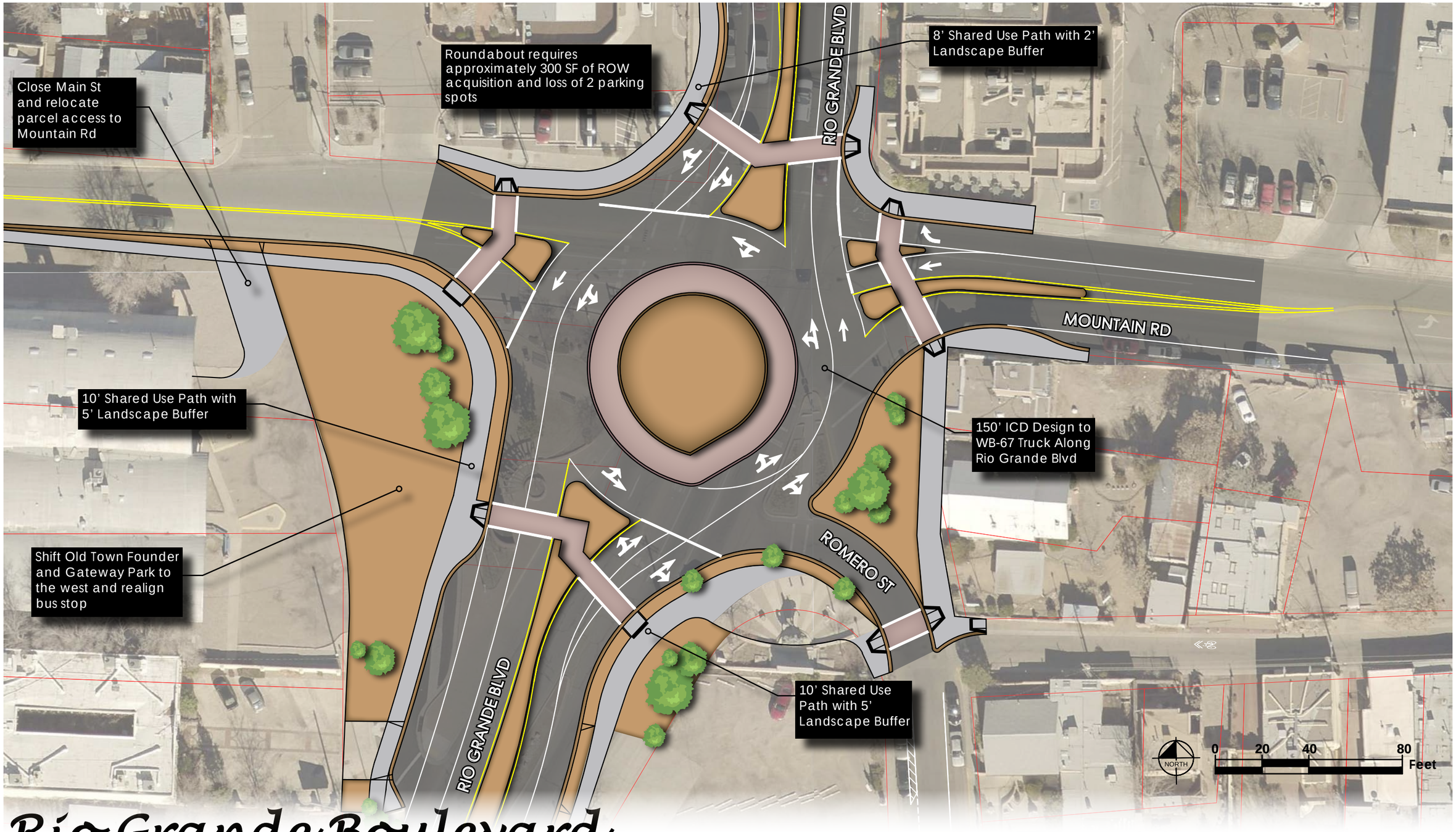
RIO GRANDE BOULEVARD AT MOUNTAIN ROAD - ALTERNATIVE 2



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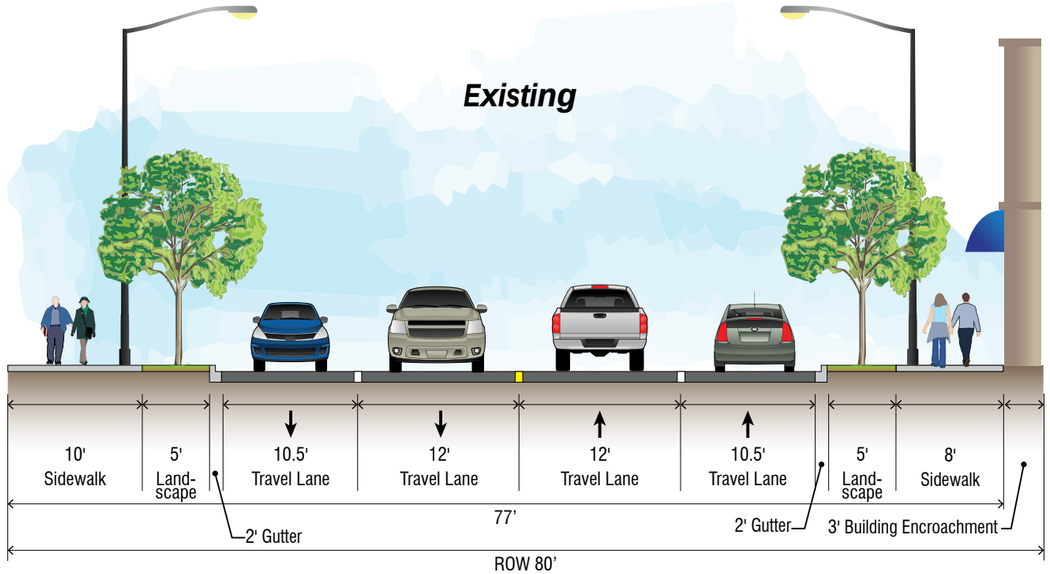
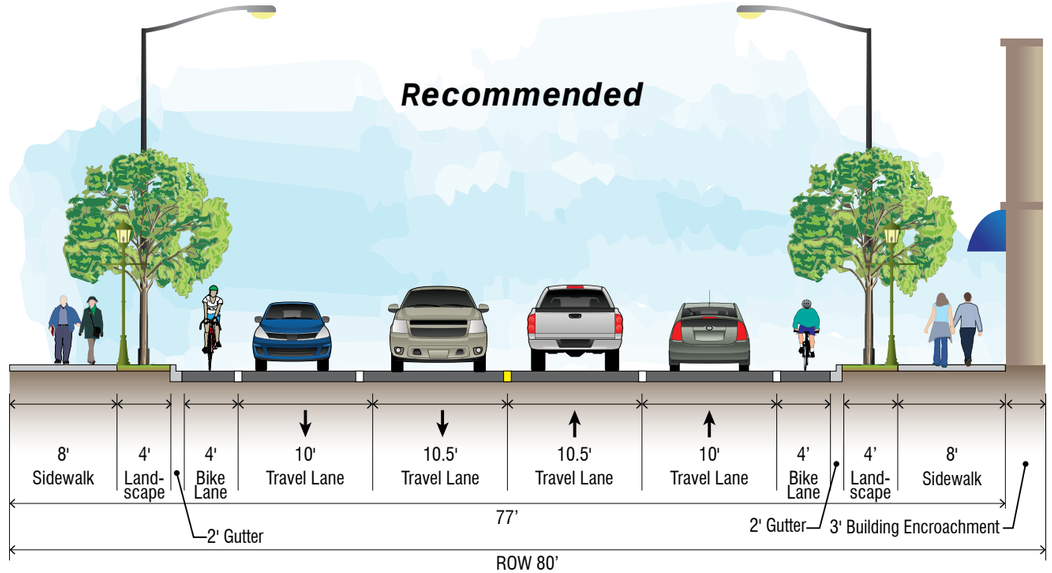
RIO GRANDE BOULEVARD - RECOMMENDED FUTURE CROSS SECTION
MOUNTAIN ROAD TO HOLLYWOOD AVENUE

Existing



Recommended



Notes:

- Existing actual dimensions vary. Typical dimensions are shown. Right-of-way varies from 80’ to 85’. Roadway curb-to-curb width varies from 48’ to 49’.
- Bike lanes will have dashed green paint at conflict zones.
- Existing functional width of sidewalks is much lower due to obstructions such as power poles and lighting. Obstructions will be relocated to landscape strip with proposed improvement.

RIO GRANDE BOULEVARD AT HOLLYWOOD AVENUE

Rio Grande Boulevard

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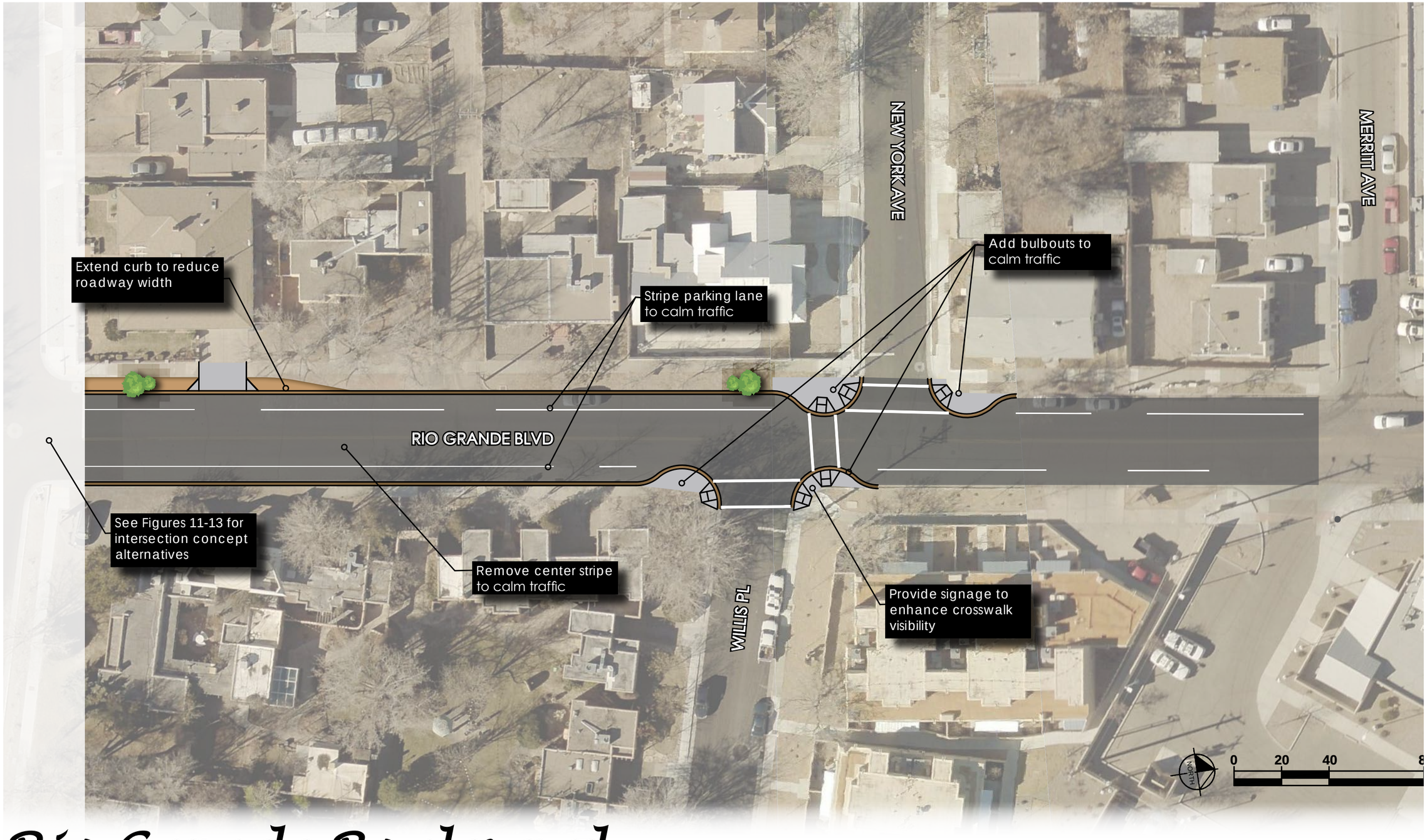
RIO GRANDE BOULEVARD BETWEEN CENTRAL AVENUE AND ALHAMBRA AVENUE



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RIO GRANDE BOULEVARD AT ALHAMBRA AVENUE - ALTERNATIVE 1

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SAN PASQUALE AVENUE AT CHACOMA PLACE - ALTERNATIVE 2

Rio Grande Boulevard

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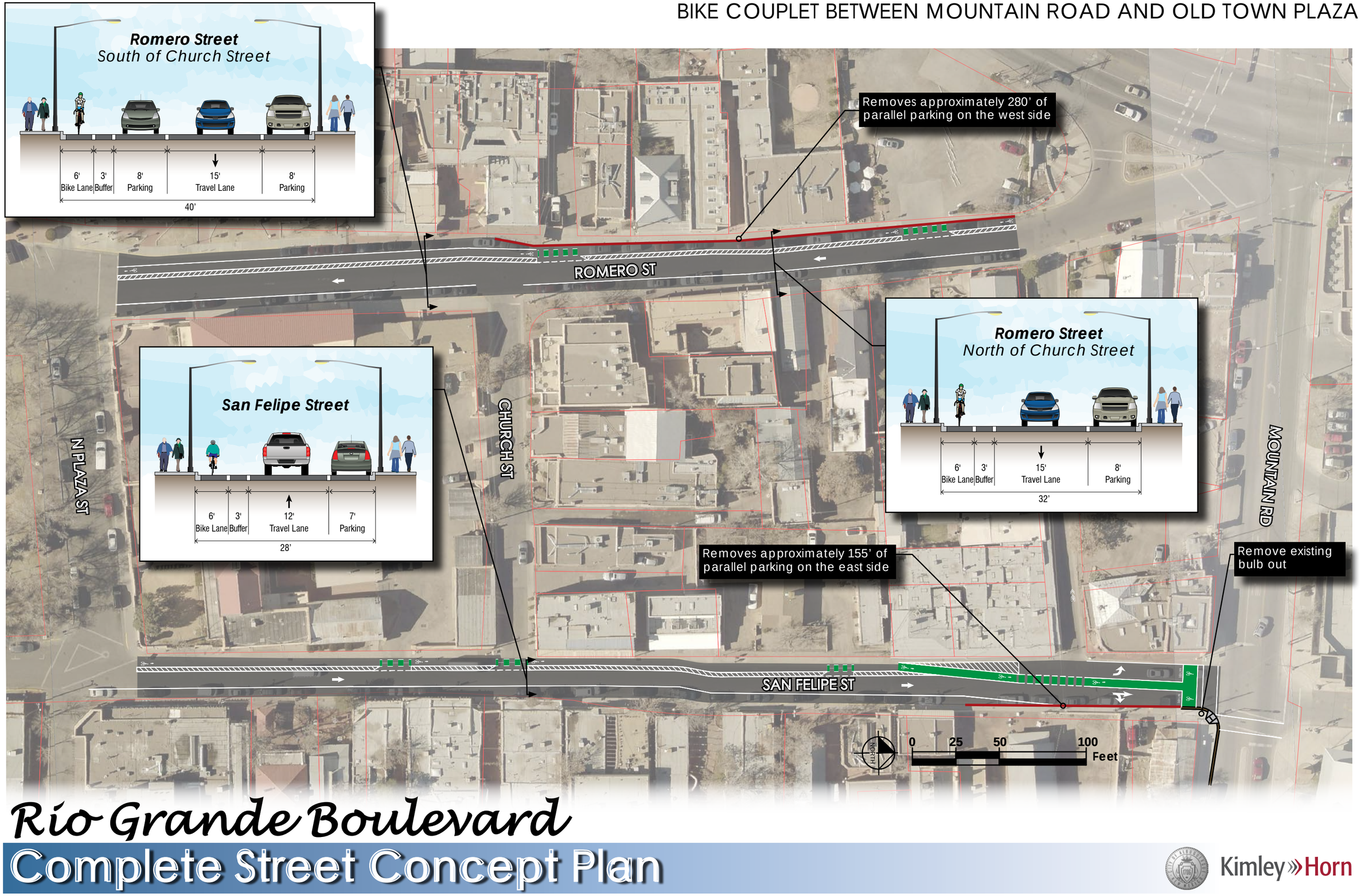
BIKE COUPLET BETWEEN MOUNTAIN ROAD AND OLD TOWN PLAZA



Rio Grande Boulevard

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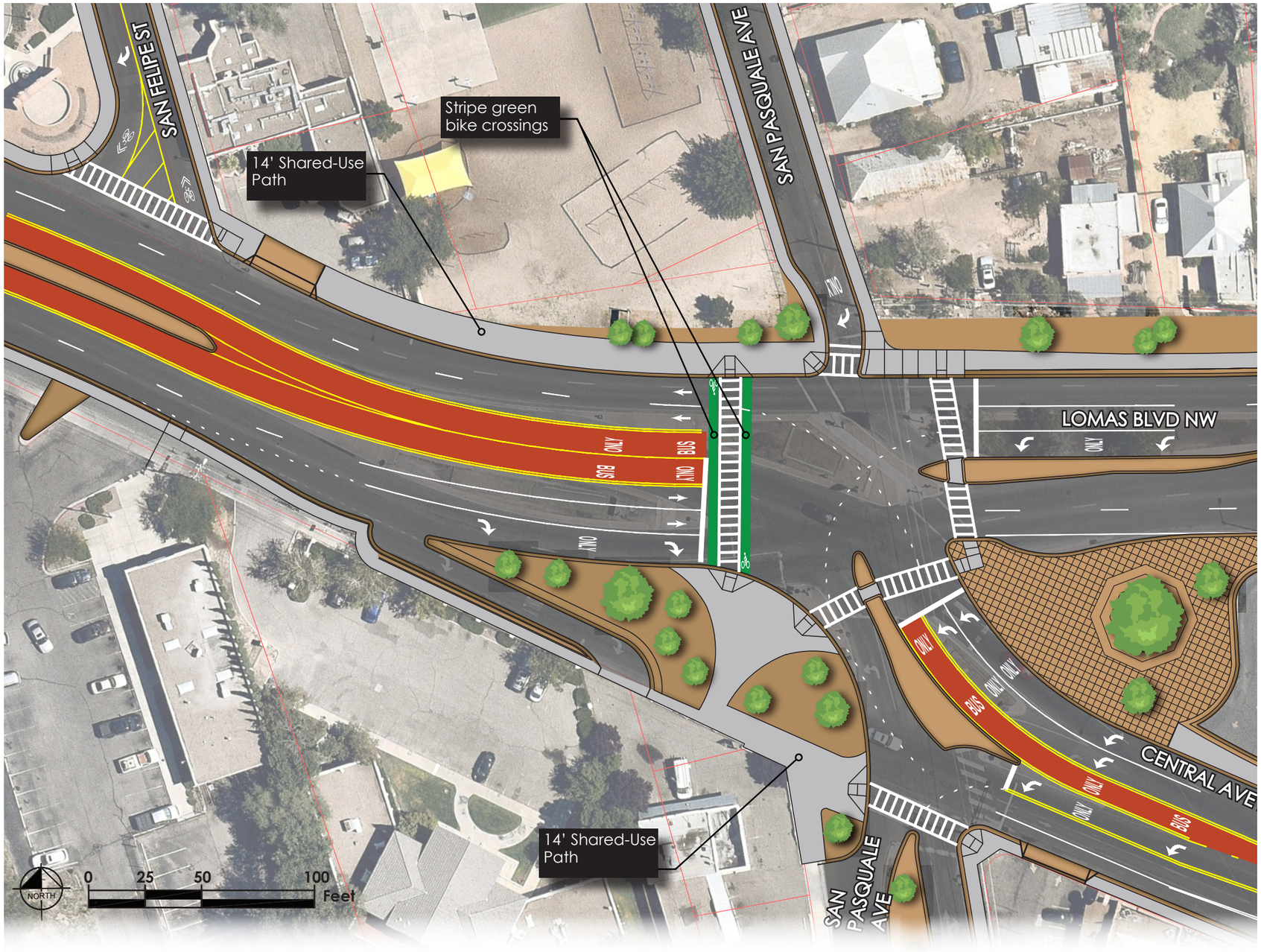
BIKE ROUTE IMPROVEMENTS BETWEEN OLD TOWN PLAZA AND SOUTH OF CENTRAL AVENUE



Rio Grande Boulevard

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APPENDIX B: TRAFFIC DATA

Traffic Count Data Sheet

Year Counts Taken: **2015**

E-W Street: **Alhambre Av.**

N-S Street: **Rio Grande Blvd.**

UNSIGNALIZED

Speed Limit (Alhambre Av.)= **25** MPH

Speed Limit (Rio Grande Blvd.)= **35** MPH

11/3/15

Begin Time	End Time	Eastbound (Alhambre Av.)				Westbound (Alhambre Av.)				Northbound (Rio Grande Blvd.)				Southbound (Rio Grande Blvd.)			
		L	T	R	Peds / Bikes	L	T	R	Peds / Bikes	L	T	R	Peds / Bikes	L	T	R	Peds / Bikes
7:00 AM	7:15 AM	~~2~~	~~0~~	~~12~~	~~0/0~~	~~0~~	~~0~~	~~8~~	~~1/0~~	~~0~~	~~0~~	~~0~~	~~0/0~~	~~12~~	~~0~~	~~0~~	~~0/0~~
7:15 AM	7:30 AM	~~0~~	~~3~~	~~21~~	~~1/0~~	~~0~~	~~0~~	~~16~~	~~0/0~~	~~1~~	~~0~~	~~0~~	~~0/0~~	~~24~~	~~0~~	~~1~~	~~0/0~~
7:30 AM	7:45 AM	1	1	24	0/0	0	1	10	0/0	0	0	0	0/0	27	0	0	0/1
7:45 AM	8:00 AM	1	1	12	0/0	0	2	12	1/0	0	0	0	0/0	16	0	1	0/0
8:00 AM	8:15 AM	0	2	22	0/0	0	0	17	0/0	0	0	0	1/0	30	0	1	0/0
8:15 AM	8:30 AM	1	1	24	0/0	0	2	15	0/0	0	0	0	0/0	29	0	1	0/0
8:30 AM	8:45 AM	~~1~~	~~1~~	~~9~~	~~0/0~~	~~0~~	~~1~~	~~9~~	~~0/1~~	~~0~~	~~0~~	~~0~~	~~0/0~~	~~15~~	~~0~~	~~2~~	~~0/0~~
8:45 AM	9:00 AM	~~0~~	~~1~~	~~20~~	~~0/0~~	~~0~~	~~1~~	~~14~~	~~0/0~~	~~0~~	~~0~~	~~0~~	~~0/0~~	~~24~~	~~0~~	~~0~~	~~0/0~~
AM Peak Hour Volumes		3	5	82		0	5	54		0	0	0		102	0	3	
% of Total Traffic		1.2%	2.0%	32.3%		0.0%	2.0%	21.3%		0.0%	0.0%	0.0%		40.2%	0.0%	0.0%	
% Directional			35.4%				23.2%	**Intersection**			0.0%				40.2%		
AM Peak Hour Factor			*0.87*				*0.87*	0.87			*#DIV/0!*				*0.85*		

Begin Time	End Time	Eastbound (Alhambre Av.)				Westbound (Alhambre Av.)				Northbound (Rio Grande Blvd.)				Southbound (Rio Grande Blvd.)			
		L	T	R	Peds / Bikes	L	T	R	Peds / Bikes	L	T	R	Peds / Bikes	L	T	R	Peds / Bikes
4:00 PM	4:15 PM	~~0~~	~~1~~	~~10~~	~~0/0~~	~~0~~	~~3~~	~~28~~	~~0/0~~	~~0~~	~~0~~	~~0~~	~~0/0~~	~~11~~	~~0~~	~~1~~	~~0/0~~
4:15 PM	4:30 PM	1	1	4	0/0	0	1	32	0/0	0	0	0	0/0	7	0	2	1/0
4:30 PM	4:45 PM	2	3	5	0/0	0	4	33	0/0	0	0	0	0/0	8	0	0	1/0
4:45 PM	5:00 PM	0	0	5	1/0	0	2	42	0/0	0	0	0	0/0	7	0	2	0/0
5:00 PM	5:15 PM	0	0	6	0/0	0	3	38	0/1	0	0	0	0/0	8	0	0	0/0
5:15 PM	5:30 PM	~~0~~	~~0~~	~~4~~	~~0/0~~	~~0~~	~~3~~	~~29~~	~~1/1~~	~~0~~	~~0~~	~~0~~	~~0/0~~	~~7~~	~~0~~	~~2~~	~~0/0~~
5:30 PM	5:45 PM	~~0~~	~~0~~	~~5~~	~~0/0~~	~~0~~	~~3~~	~~16~~	~~0/0~~	~~0~~	~~0~~	~~0~~	~~0/0~~	~~7~~	~~0~~	~~3~~	~~0/0~~
5:45 PM	6:00 PM	~~0~~	~~0~~	~~0~~	~~0/0~~	~~0~~	~~0~~	~~9~~	~~0/0~~	~~0~~	~~0~~	~~0~~	~~0/0~~	~~0~~	~~0~~	~~0~~	~~0/0~~
PM Peak Hour Volumes		3	4	20		0	10	145		0	0	0		30	0	4	
% of Total Traffic		1.4%	1.9%	9.3%		0.0%	4.6%	67.1%		0.0%	0.0%	0.0%		13.9%	0.0%	1.9%	
% Directional			12.5%				71.8%	**Intersection**			0.0%				15.7%		
PM Peak Hour Factor			*0.68*				*0.88*	0.93			*#DIV/0!*				*0.94*		

Terry O. Brown, P.E.

P. O. Box 92051
Albuquerque, NM 87199-2051
(505) 883-8807

Counter: R.C.

File Name : Alhambra & San Pasquale
Site Code : 05052016
Start Date : 5/5/2016
Page No : 1

Groups Printed- Cars - Bikes - Trucks - Buses

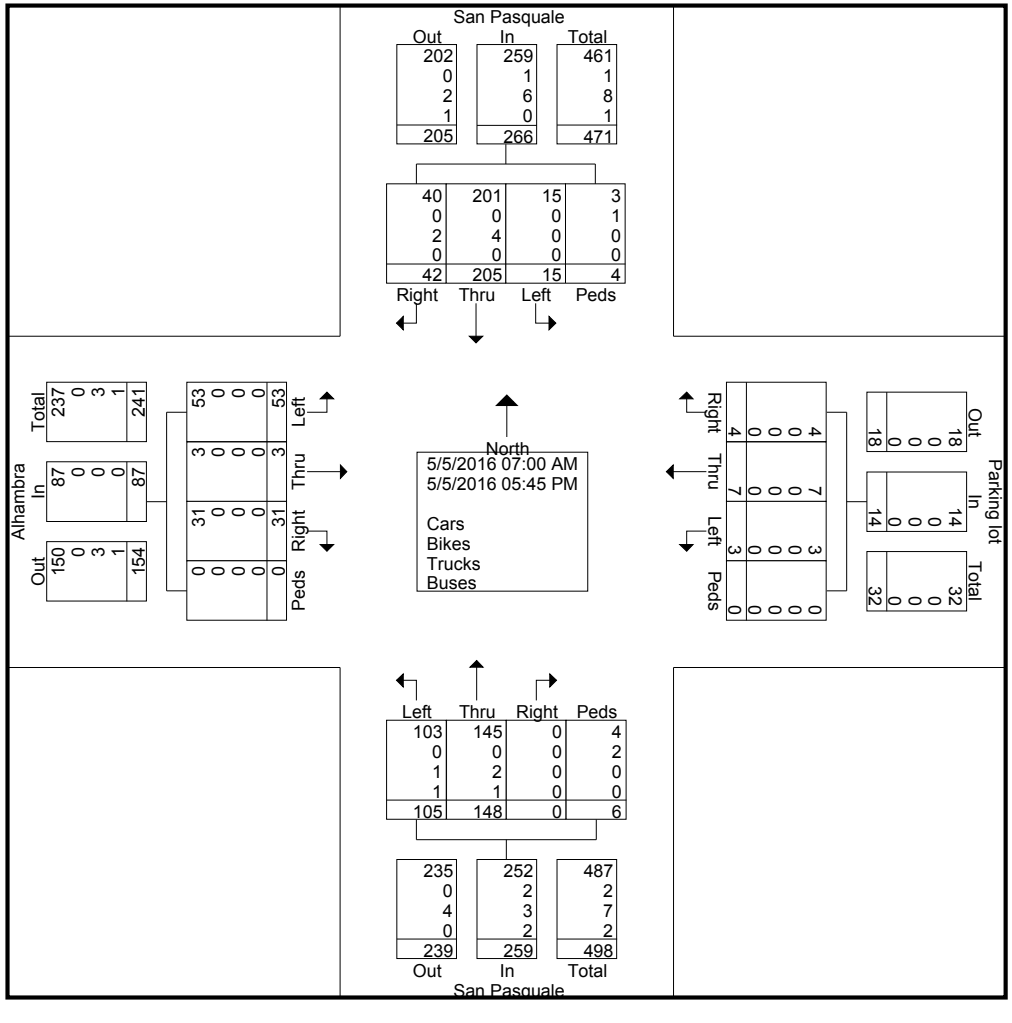
	Alhambra Eastbound					Parking lot Westbound					San Pasquale Northbound					San Pasquale Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	1	0	0	0	1	0	0	0	0	0	3	3	0	1	7	1	6	1	0	8	16
07:15 AM	3	1	1	0	5	1	1	0	0	2	5	5	0	0	10	1	3	1	0	5	22
07:30 AM	3	0	0	0	3	0	0	0	0	0	3	7	0	0	10	0	4	3	1	8	21
07:45 AM	6	0	5	0	11	0	0	0	0	0	7	6	0	0	13	0	10	0	1	11	35
Total	13	1	6	0	20	1	1	0	0	2	18	21	0	1	40	2	23	5	2	32	94
08:00 AM	2	0	3	0	5	0	0	1	0	1	3	3	0	0	6	1	9	2	0	12	24
08:15 AM	5	0	6	0	11	0	0	1	0	1	7	20	0	0	27	0	9	4	0	13	52
08:30 AM	2	0	3	0	5	1	1	0	0	2	3	2	0	1	6	1	18	0	0	19	32
08:45 AM	3	1	1	0	5	0	0	0	0	0	3	11	0	0	14	4	13	2	0	19	38
Total	12	1	13	0	26	1	1	2	0	4	16	36	0	1	53	6	49	8	0	63	146
*** BREAK ***																					
04:00 PM	1	0	2	0	3	0	0	0	0	0	5	12	0	0	17	1	18	6	0	25	45
04:15 PM	2	0	1	0	3	0	1	0	0	1	2	4	0	2	8	0	15	2	1	18	30
04:30 PM	6	1	2	0	9	0	0	1	0	1	10	7	0	1	18	2	10	1	0	13	41
04:45 PM	3	0	0	0	3	0	0	1	0	1	6	10	0	0	16	1	11	5	0	17	37
Total	12	1	5	0	18	0	1	2	0	3	23	33	0	3	59	4	54	14	1	73	153
05:00 PM	4	0	2	0	6	1	4	0	0	5	14	10	0	0	24	1	20	5	0	26	61
05:15 PM	4	0	2	0	6	0	0	0	0	0	11	8	0	0	19	1	16	1	1	19	44
05:30 PM	4	0	0	0	4	0	0	0	0	0	13	10	0	0	23	0	17	3	0	20	47
05:45 PM	4	0	3	0	7	0	0	0	0	0	10	30	0	1	41	1	26	6	0	33	81
Total	16	0	7	0	23	1	4	0	0	5	48	58	0	1	107	3	79	15	1	98	233
Grand Total	53	3	31	0	87	3	7	4	0	14	105	148	0	6	259	15	205	42	4	266	626
Apprch %	60.9	3.4	35.6	0		21.4	50	28.6	0		40.5	57.1	0	2.3		5.6	77.1	15.8	1.5		
Total %	8.5	0.5	5	0	13.9	0.5	1.1	0.6	0	2.2	16.8	23.6	0	1	41.4	2.4	32.7	6.7	0.6	42.5	
Cars	53	3	31	0	87	3	7	4	0	14	103	145	0	4	252	15	201	40	3	259	612
% Cars	100	100	100	0	100	100	100	100	0	100	98.1	98	0	66.7	97.3	100	98	95.2	75	97.4	97.8
Bikes	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	1	1	3
% Bikes	0	0	0	0	0	0	0	0	0	0	0	0	0	33.3	0.8	0	0	0	25	0.4	0.5
Trucks	0	0	0	0	0	0	0	0	0	0	1	2	0	0	3	0	4	2	0	6	9
% Trucks	0	0	0	0	0	0	0	0	0	0	1	1.4	0	0	1.2	0	2	4.8	0	2.3	1.4
Buses	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	2
% Buses	0	0	0	0	0	0	0	0	0	0	1	0.7	0	0	0.8	0	0	0	0	0	0.3

Terry O. Brown, P.E.

P. O. Box 92051
Albuquerque, NM 87199-2051
(505) 883-8807

Counter: R.C.

File Name : Alhambra & San Pasquale
Site Code : 05052016
Start Date : 5/5/2016
Page No : 2



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	Alhambra Eastbound					Parking lot Westbound					San Pasquale Northbound					San Pasquale Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	2	0	3	0	5	0	0	**1**	0	1	3	3	0	0	6	1	9	2	0	12	24
08:15 AM	**5**	0	**6**	0	**11**	0	0	1	0	1	**7**	**20**	0	0	**27**	0	9	**4**	0	13	**52**
08:30 AM	2	0	3	0	5	**1**	**1**	0	0	**2**	3	2	0	**1**	6	1	**18**	0	0	**19**	32
08:45 AM	3	**1**	1	0	5	0	0	0	0	0	3	11	0	0	14	**4**	13	2	0	19	38
Total Volume	12	1	13	0	26	1	1	2	0	4	16	36	0	1	53	6	49	8	0	63	146
% App. Total	46.2	3.8	50	0		25	25	50	0		30.2	67.9	0	1.9		9.5	77.8	12.7	0		
PHF	.600	.250	.542	.000	.591	.250	.250	.500	.000	.500	.571	.450	.000	.250	.491	.375	.681	.500	.000	.829	.702
Cars	12	1	13	0	26	1	1	2	0	4	16	34	0	0	50	6	46	8	0	60	140
% Cars	100	100	100	0	100	100	100	100	0	100	100	94.4	0	0	94.3	100	93.9	100	0	95.2	95.9
Bikes	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1
% Bikes	0	0	0	0	0	0	0	0	0	0	0	0	0	100	1.9	0	0	0	0	0	0.7
Trucks	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	3	0	0	3	4
% Trucks	0	0	0	0	0	0	0	0	0	0	0	2.8	0	0	1.9	0	6.1	0	0	4.8	2.7
Buses	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
% Buses	0	0	0	0	0	0	0	0	0	0	0	2.8	0	0	1.9	0	0	0	0	0	0.7

Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM					07:45 AM					07:30 AM					08:00 AM					
+0 mins.	**6**	0	5	0	**11**	0	0	0	0	0	3	7	0	0	10	1	9	2	0	12	
+15 mins.	2	0	3	0	5	0	0	**1**	0	1	**7**	6	0	0	13	0	9	**4**	0	13	
+30 mins.	5	0	**6**	0	11	0	0	1	0	1	3	3	0	0	6	1	**18**	0	0	**19**	
+45 mins.	2	0	3	0	5	**1**	**1**	0	0	**2**	7	**20**	0	0	**27**	**4**	13	2	0	19	
Total Volume	15	0	17	0	32	1	1	2	0	4	20	36	0	0	56	6	49	8	0	63	
% App. Total	46.9	0	53.1	0		25	25	50	0		35.7	64.3	0	0		9.5	77.8	12.7	0		
PHF	.625	.000	.708	.000	.727	.250	.250	.500	.000	.500	.714	.450	.000	.000	.519	.375	.681	.500	.000	.829	
Cars	15	0	17	0	32	1	1	2	0	4	20	36	0	0	56	6	46	8	0	60	
% Cars	100	0	100	0	100	100	100	100	0	100	100	100	0	0	100	100	93.9	100	0	95.2	
Bikes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
% Bikes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6.1	0	0	4.8	
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

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Start Date : 5/5/2016
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	Alhambra Eastbound					Parking lot Westbound					San Pasquale Northbound					San Pasquale Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	**4**	0	2	0	6	**1**	**4**	0	0	**5**	**14**	10	0	0	24	**1**	20	5	0	26	61
05:15 PM	4	0	2	0	6	0	0	0	0	0	11	8	0	0	19	1	16	1	**1**	19	44
05:30 PM	4	0	0	0	4	0	0	0	0	0	13	10	0	0	23	0	17	3	0	20	47
05:45 PM	4	0	**3**	0	**7**	0	0	0	0	0	10	**30**	0	**1**	**41**	1	**26**	**6**	0	**33**	**81**
Total Volume	16	0	7	0	23	1	4	0	0	5	48	58	0	1	107	3	79	15	1	98	233
% App. Total	69.6	0	30.4	0		20	80	0	0		44.9	54.2	0	0.9		3.1	80.6	15.3	1		
PHF	1.00	.000	.583	.000	.821	.250	.250	.000	.000	.250	.857	.483	.000	.250	.652	.750	.760	.625	.250	.742	.719
Cars	16	0	7	0	23	1	4	0	0	5	47	58	0	0	105	3	79	14	0	96	229
% Cars	100	0	100	0	100	100	100	0	0	100	97.9	100	0	0	98.1	100	100	93.3	0	98.0	98.3
Bikes	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	2
% Bikes	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0.9	0	0	0	100	1.0	0.9
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6.7	0	1.0	0.4
Buses	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
% Buses	0	0	0	0	0	0	0	0	0	0	2.1	0	0	0	0.9	0	0	0	0	0	0.4

Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM					04:15 PM					05:00 PM					05:00 PM				
+0 mins.	**6**	**1**	**2**	0	**9**	0	1	0	0	1	**14**	10	0	0	24	**1**	20	5	0	26
+15 mins.	3	0	0	0	3	0	0	**1**	0	1	11	8	0	0	19	1	16	1	**1**	19
+30 mins.	4	0	2	0	6	0	0	1	0	1	13	10	0	0	23	0	17	3	0	20
+45 mins.	4	0	2	0	6	**1**	**4**	0	0	**5**	10	**30**	0	**1**	**41**	1	**26**	**6**	0	**33**
Total Volume	17	1	6	0	24	1	5	2	0	8	48	58	0	1	107	3	79	15	1	98
% App. Total	70.8	4.2	25	0		12.5	62.5	25	0		44.9	54.2	0	0.9		3.1	80.6	15.3	1	
PHF	.708	.250	.750	.000	.667	.250	.313	.500	.000	.400	.857	.483	.000	.250	.652	.750	.760	.625	.250	.742
Cars	17	1	6	0	24	1	5	2	0	8	47	58	0	0	105	3	79	14	0	96
% Cars	100	100	100	0	100	100	100	100	0	100	97.9	100	0	0	98.1	100	100	93.3	0	98
Bikes	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1
% Bikes	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0.9	0	0	0	100	1
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6.7	0	1
Buses	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	2.1	0	0	0	0.9	0	0	0	0	0

Traffic Count Data Sheet

Year Counts Taken: **2015**

E-W Street: **AspenAve.**

N-S Street: **Rio Grande Bvd.**

UNSIGNALIZED

Speed Limit (AspenAve.)= **25** MPH

Speed Limit (Rio Grande Bvd.)= **35** MPH

11/6/15

Begin Time	End Time	Eastbound (AspenAve.)				Westbound (AspenAve.)				Northbound (Rio Grande Bvd.)				Southbound (Rio Grande Bvd.)			
		L	T	R	Ped / Bikes	L	T	R	Ped / Bikes	L	T	R	Ped / Bikes	L	T	R	Ped / Bikes
7:00 AM	7:15 AM	~~2~~	~~0~~	~~3~~	~~0/0~~	~~1~~	~~0~~	~~7~~	~~0/0~~	~~3~~	~~224~~	~~0~~	~~3/1~~	~~1~~	~~139~~	~~4~~	~~3/1~~
7:15 AM	7:30 AM	~~4~~	~~0~~	~~6~~	~~0/0~~	~~2~~	~~0~~	~~3~~	~~0/0~~	~~2~~	~~275~~	~~0~~	~~1/0~~	~~2~~	~~231~~	~~12~~	~~13/2~~
7:30 AM	7:45 AM	**9**	**0**	**11**	**1/1**	**1**	**0**	**7**	**0/0**	**2**	**292**	**1**	**2/2**	**0**	**266**	**15**	**2/1**
7:45 AM	8:00 AM	**6**	**1**	**6**	**0/0**	**3**	**0**	**4**	**1/1**	**4**	**324**	**1**	**0/0**	**0**	**347**	**13**	**4/2**
8:00 AM	8:15 AM	**2**	**0**	**16**	**0/0**	**1**	**0**	**8**	**0/0**	**0**	**269**	**1**	**0/0**	**0**	**365**	**17**	**3/0**
8:15 AM	8:30 AM	**9**	**0**	**5**	**0/0**	**1**	**0**	**10**	**0/0**	**0**	**274**	**0**	**0/0**	**2**	**317**	**10**	**1/0**
8:30 AM	8:45 AM	~~12~~	~~0~~	~~13~~	~~0/0~~	~~1~~	~~0~~	~~5~~	~~0/0~~	~~3~~	~~277~~	~~0~~	~~0/0~~	~~7~~	~~260~~	~~9~~	~~3/1~~
8:45 AM	9:00 AM	~~9~~	~~1~~	~~6~~	~~0/0~~	~~2~~	~~0~~	~~6~~	~~0/0~~	~~0~~	~~241~~	~~1~~	~~0/0~~	~~1~~	~~301~~	~~13~~	~~1/1~~
AM Peak Hour Volumes		**26**	**1**	**38**		**6**	**0**	**29**		**6**	**1159**	**3**		**2**	**1295**	**55**	
% of Total Traffic		1.0%	0.0%	1.5%		0.2%	0.0%	1.1%		0.2%	44.2%	0.1%		0.1%	49.4%	0.0%	
% Directional			2.5%				1.3%	**Intersection**			44.6%				49.5%		
AM Peak Hour Factor			*0.81*				*0.80*	**0.92**			*0.89*				*0.88*		

Begin Time	End Time	Eastbound (AspenAve.)				Westbound (AspenAve.)				Northbound (Rio Grande Bvd.)				Southbound (Rio Grande Bvd.)			
		L	T	R	Ped / Bikes	L	T	R	Ped / Bikes	L	T	R	Ped / Bikes	L	T	R	Ped / Bikes
4:00 PM	4:15 PM	~~6~~	~~0~~	~~3~~	~~1/0~~	~~3~~	~~0~~	~~6~~	~~0/0~~	~~0~~	~~309~~	~~1~~	~~2/1~~	~~0~~	~~303~~	~~5~~	~~1/1~~
4:15 PM	4:30 PM	**7**	**0**	**4**	**1/1**	**1**	**1**	**2**	**0/0**	**2**	**336**	**2**	**1/1**	**3**	**308**	**5**	**6/3**
4:30 PM	4:45 PM	**5**	**0**	**5**	**0/0**	**0**	**0**	**2**	**1/0**	**1**	**344**	**0**	**4/2**	**2**	**283**	**15**	**4/1**
4:45 PM	5:00 PM	**3**	**0**	**14**	**0/0**	**1**	**0**	**8**	**0/0**	**4**	**399**	**0**	**1/0**	**2**	**295**	**6**	**14/3**
5:00 PM	5:15 PM	**4**	**0**	**9**	**0/0**	**1**	**0**	**2**	**0/1**	**2**	**345**	**1**	**2/0**	**0**	**297**	**8**	**9/2**
5:15 PM	5:30 PM	~~6~~	~~0~~	~~1~~	~~0/0~~	~~3~~	~~0~~	~~8~~	~~0/0~~	~~2~~	~~323~~	~~2~~	~~3/1~~	~~1~~	~~301~~	~~7~~	~~12/4~~
5:30 PM	5:45 PM	~~5~~	~~0~~	~~4~~	~~0/0~~	~~1~~	~~1~~	~~7~~	~~0/0~~	~~4~~	~~291~~	~~0~~	~~3/2~~	~~4~~	~~329~~	~~2~~	~~8/3~~
5:45 PM	6:00 PM	~~7~~	~~0~~	~~3~~	~~0/0~~	~~3~~	~~0~~	~~4~~	~~0/0~~	~~1~~	~~254~~	~~1~~	~~4/1~~	~~1~~	~~247~~	~~7~~	~~5/4~~
PM Peak Hour Volumes		**19**	**0**	**32**		**3**	**1**	**14**		**9**	**1424**	**3**		**7**	**1183**	**34**	
% of Total Traffic		0.7%	0.0%	1.2%		0.1%	0.0%	0.5%		0.3%	52.2%	0.1%		0.3%	43.3%	1.2%	
% Directional			1.9%				0.7%	**Intersection**			52.6%				44.9%		
PM Peak Hour Factor			*0.75*				*0.50*	**0.93**			*0.89*				*0.97*		

Traffic Count Data Sheet

Year Counts Taken: **2015**

E-W Street: **Bellamah Ave.**

N-S Street: **Rio Grande Bvd.**

UNSIGNALIZED

Speed Limit (Bellamah Ave.)= **25** MPH

Speed Limit (Rio Grande Bvd.)= **35** MPH

11/6/15

Begin Time	End Time	Eastbound (Bellamah Ave.)				Westbound (Bellamah Ave.)				Northbound (Rio Grande Bvd.)				Southbound (Rio Grande Bvd.)			
		L	T	R	Ped / Bike	L	T	R	Ped / Bike	L	T	R	Ped / Bike	L	T	R	Ped / Bike
7:00 AM	7:15 AM	~~0~~	~~0~~	~~0~~	~~2/1~~	~~0~~	~~0~~	~~15~~	~~2/2~~	~~0~~	~~215~~	~~1~~	~~2/0~~	~~13~~	~~135~~	~~0~~	~~2/0~~
7:15 AM	7:30 AM	~~0~~	~~0~~	~~0~~	~~3/1~~	~~1~~	~~0~~	~~14~~	~~0/1~~	~~0~~	~~266~~	~~4~~	~~2/0~~	~~23~~	~~210~~	~~0~~	~~2/2~~
7:30 AM	7:45 AM	**0**	**0**	**0**	**0/0**	**2**	**0**	**13**	**0/0**	**0**	**277**	**3**	**0/0**	**36**	**248**	**0**	**1/2**
7:45 AM	8:00 AM	**0**	**0**	**0**	**0/0**	**3**	**0**	**15**	**1/1**	**0**	**315**	**2**	**2/2**	**41**	**329**	**0**	**0/1**
8:00 AM	8:15 AM	**0**	**0**	**0**	**3/0**	**5**	**0**	**24**	**0/0**	**0**	**268**	**5**	**0/0**	**42**	**325**	**0**	**2/2**
8:15 AM	8:30 AM	**0**	**0**	**0**	**1/0**	**4**	**0**	**15**	**1/2**	**0**	**263**	**5**	**1/2**	**27**	**298**	**0**	**0/0**
8:30 AM	8:45 AM	~~0~~	~~0~~	~~0~~	~~0/1~~	~~1~~	~~0~~	~~26~~	~~0/1~~	~~0~~	~~251~~	~~7~~	~~0/1~~	~~28~~	~~234~~	~~0~~	~~0/0~~
8:45 AM	9:00 AM	~~0~~	~~0~~	~~1~~	~~3/2~~	~~3~~	~~0~~	~~25~~	~~1/1~~	~~0~~	~~218~~	~~3~~	~~1/0~~	~~41~~	~~276~~	~~0~~	~~3/1~~
AM Peak Hour Volumes		**0**	**0**	**0**		**14**	**0**	**67**		**0**	**1123**	**15**		**146**	**1200**	**0**	
% of Total Traffic		0.0%	0.0%	0.0%		0.5%	0.0%	2.6%		0.0%	43.8%	0.6%		5.7%	46.8%	0.0%	
% Directional			0.0%				3.2%	**Intersection**			44.4%				52.5%		
AM Peak Hour Factor			*#DIV/0!*				*0.70*	**0.91**			*0.90*				*0.91*		

Begin Time	End Time	Eastbound (Bellamah Ave.)				Westbound (Bellamah Ave.)				Northbound (Rio Grande Bvd.)				Southbound (Rio Grande Bvd.)			
		L	T	R	Ped / Bike	L	T	R	Ped / Bike	L	T	R	Ped / Bike	L	T	R	Ped / Bike
4:00 PM	4:15 PM	~~0~~	~~0~~	~~0~~	~~0/0~~	~~4~~	~~0~~	~~31~~	~~1/1~~	~~0~~	~~253~~	~~4~~	~~2/1~~	~~18~~	~~277~~	~~0~~	~~0/1~~
4:15 PM	4:30 PM	~~0~~	~~0~~	~~0~~	~~2/1~~	~~5~~	~~0~~	~~41~~	~~0/0~~	~~0~~	~~273~~	~~6~~	~~0/0~~	~~28~~	~~270~~	~~0~~	~~1/3~~
4:30 PM	4:45 PM	**0**	**0**	**0**	**2/0**	**4**	**0**	**45**	**0/0**	**0**	**278**	**6**	**2/2**	**30**	**278**	**0**	**2/1**
4:45 PM	5:00 PM	**0**	**0**	**0**	**1/0**	**8**	**0**	**79**	**2/0**	**0**	**312**	**4**	**4/2**	**35**	**268**	**0**	**3/3**
5:00 PM	5:15 PM	**0**	**0**	**0**	**0/1**	**8**	**0**	**64**	**1/0**	**0**	**321**	**9**	**0/0**	**38**	**272**	**0**	**4/2**
5:15 PM	5:30 PM	**0**	**0**	**0**	**1/0**	**7**	**0**	**58**	**0/0**	**0**	**298**	**13**	**1/1**	**25**	**263**	**0**	**2/3**
5:30 PM	5:45 PM	~~0~~	~~0~~	~~0~~	~~0/0~~	~~4~~	~~0~~	~~43~~	~~1/2~~	~~0~~	~~274~~	~~4~~	~~1/1~~	~~39~~	~~267~~	~~0~~	~~5/2~~
5:45 PM	6:00 PM	~~0~~	~~0~~	~~0~~	~~0/0~~	~~8~~	~~0~~	~~32~~	~~1/2~~	~~0~~	~~252~~	~~9~~	~~5/3~~	~~41~~	~~265~~	~~0~~	~~5/3~~
PM Peak Hour Volumes		**0**	**0**	**0**		**27**	**0**	**246**		**0**	**1209**	**32**		**128**	**1081**	**0**	
% of Total Traffic		0.0%	0.0%	0.0%		1.0%	0.0%	9.0%		0.0%	44.4%	1.2%		4.7%	39.7%	0.0%	
% Directional			0.0%				10.0%	**Intersection**			45.6%				44.4%		
PM Peak Hour Factor			*#DIV/0!*				*0.78*	**0.96**			*0.94*				*0.98*		

Traffic Count Data Sheet

Year Counts Taken: **2015**

E-W Street: **Chacoma Pl.**

N-S Street: **San Pasquale Av.**

UNSIGNALIZED

Speed Limit (Chacoma Pl.)= **25** MPH

Speed Limit (San Pasquale Av.)= **35** MPH

11/3/15

Begin Time	End Time	Eastbound (Chacoma Pl.)				Westbound (Chacoma Pl.)				Northbound (San Pasquale Av.)				Southbound (San Pasquale Av.)			
		L	T	R	Ped / Bike	L	T	R	Ped / Bike	L	T	R	Ped / Bike	L	T	R	Ped / Bike
7:00 AM	7:15 AM	~~0~~	~~1~~	~~4~~	~~0/0~~	~~0~~	~~2~~	~~0~~	~~0/0~~	~~3~~	~~6~~	~~0~~	~~0/0~~	~~0~~	~~1~~	~~0~~	~~0/1~~
7:15 AM	7:30 AM	~~2~~	~~0~~	~~11~~	~~0/0~~	~~0~~	~~0~~	~~0~~	~~0/0~~	~~7~~	~~10~~	~~0~~	~~0/0~~	~~0~~	~~4~~	~~0~~	~~0/0~~
7:30 AM	7:45 AM	~~0~~	~~0~~	~~8~~	~~0/0~~	~~0~~	~~1~~	~~0~~	~~0/0~~	~~5~~	~~7~~	~~0~~	~~0/0~~	~~0~~	~~2~~	~~1~~	~~0/0~~
7:45 AM	8:00 AM	~~0~~	~~2~~	~~15~~	~~0/0~~	~~0~~	~~0~~	~~0~~	~~0/0~~	~~2~~	~~10~~	~~0~~	~~0/0~~	~~1~~	~~7~~	~~0~~	~~0/0~~
8:00 AM	8:15 AM	**2**	**0**	**12**	**1/0**	**0**	**1**	**0**	**1/0**	**7**	**13**	**0**	**0/0**	**0**	**13**	**0**	**0/0**
8:15 AM	8:30 AM	**0**	**0**	**22**	**0/0**	**0**	**1**	**1**	**0/0**	**8**	**14**	**0**	**0/0**	**2**	**10**	**0**	**0/0**
8:30 AM	8:45 AM	**0**	**2**	**14**	**1/1**	**0**	**2**	**0**	**0/0**	**7**	**8**	**0**	**2/0**	**1**	**12**	**0**	**0/0**
8:45 AM	9:00 AM	**0**	**0**	**12**	**0/0**	**1**	**0**	**0**	**0/0**	**5**	**19**	**0**	**0/0**	**3**	**12**	**0**	**0/0**
AM Peak Hour Volumes		**2**	**2**	**60**		**1**	**4**	**1**		**27**	**54**	**0**		**6**	**47**	**0**	
% of Total Traffic		1.0%	1.0%	29.4%		0.5%	2.0%	0.5%		13.2%	26.5%	0.0%		2.9%	23.0%	0.0%	
% Directional			31.4%				2.9%	**Intersection**			39.7%				26.0%		
AM Peak Hour Factor			*0.73*				*0.75*	**0.88**			*0.84*				*0.88*		

Begin Time	End Time	Eastbound (Chacoma Pl.)				Westbound (Chacoma Pl.)				Northbound (San Pasquale Av.)				Southbound (San Pasquale Av.)			
		L	T	R	Ped / Bike	L	T	R	Ped / Bike	L	T	R	Ped / Bike	L	T	R	Ped / Bike
4:00 PM	4:15 PM	**0**	**1**	**8**	**0/0**	**1**	**2**	**0**	**0/0**	**17**	**16**	**0**	**0/0**	**1**	**10**	**4**	**1/0**
4:15 PM	4:30 PM	**2**	**0**	**4**	**1/0**	**0**	**0**	**0**	**1/1**	**19**	**14**	**0**	**2/1**	**0**	**9**	**0**	**1/0**
4:30 PM	4:45 PM	**0**	**0**	**4**	**0/0**	**0**	**1**	**1**	**0/0**	**20**	**15**	**0**	**0/0**	**3**	**15**	**1**	**0/0**
4:45 PM	5:00 PM	**0**	**0**	**3**	**0/1**	**0**	**1**	**0**	**1/0**	**26**	**18**	**0**	**1/2**	**2**	**11**	**0**	**0/1**
5:00 PM	5:15 PM	~~2~~	~~0~~	~~7~~	~~0/0~~	~~0~~	~~0~~	~~1~~	~~0/0~~	~~13~~	~~19~~	~~0~~	~~1~~	~~1~~	~~8~~	~~0~~	~~0/1~~
5:15 PM	5:30 PM	~~0~~	~~0~~	~~6~~	~~0/0~~	~~0~~	~~0~~	~~0~~	~~0/0~~	~~13~~	~~13~~	~~0~~	~~1/0~~	~~1~~	~~10~~	~~1~~	~~0/0~~
5:30 PM	5:45 PM	~~1~~	~~0~~	~~1~~	~~0/0~~	~~0~~	~~1~~	~~3~~	~~0/0~~	~~10~~	~~17~~	~~1~~	~~0/1~~	~~2~~	~~10~~	~~2~~	~~0/0~~
5:45 PM	6:00 PM	~~0~~	~~1~~	~~3~~	~~1/0~~	~~0~~	~~0~~	~~3~~	~~0/0~~	~~3~~	~~2~~	~~0~~	~~0/0~~	~~1~~	~~2~~	~~0~~	~~0/0~~
PM Peak Hour Volumes		**2**	**1**	**19**		**1**	**4**	**1**		**82**	**63**	**0**		**6**	**45**	**5**	
% of Total Traffic		0.9%	0.4%	8.3%		0.4%	1.7%	0.4%		35.8%	27.5%	0.0%		2.6%	19.7%	2.2%	
% Directional			9.6%				2.6%	**Intersection**			63.3%				24.5%		
PM Peak Hour Factor			*0.61*				*0.50*	**0.94**			*0.82*				*0.74*		

Traffic Count Data Sheet

Year Counts Taken: **2015**

E-W Street: **Mountain Rd.**

N-S Street: **Rio Brande Blvd.**

Speed Limit (Mountain Rd.)= **25** MPH

Speed Limit (Rio Brande Blvd.)= **35** MPH

SIGNALIZED

11/4/15

Begin Time	End Time	Eastbound (Mountain Rd.)					Westbound (Mountain Rd.)					Northbound (Rio Brande Blvd.)				Southbound (Rio Brande Blvd.)				
		L	T	R (Rom)	R (RG)	Ped / Bike	L (RG)	L (Rom)	T	R	Ped / Bike	L	T	R	Ped / Bike	L(Mount)	L(Rom)	T	R	Ped / Bike
7:00 AM	7:15 AM	~~34~~	~~11~~	~~0~~	~~2~~	~~2/1~~	~~8~~	~~1~~	~~1~~	~~9~~	~~1/1~~	~~0~~	~~171~~	~~8~~	~~2/1~~	~~15~~	~~2~~	~~132~~	~~16~~	~~1/1~~
7:15 AM	7:30 AM	~~24~~	~~8~~	~~1~~	~~2~~	~~0/0~~	~~9~~	~~0~~	~~7~~	~~8~~	~~0/0~~	~~1~~	~~257~~	~~18~~	~~0/0~~	~~17~~	~~1~~	~~170~~	~~13~~	~~1/0~~
7:30 AM	7:45 AM	~~30~~	~~12~~	~~1~~	~~3~~	~~1/2~~	~~6~~	~~0~~	~~7~~	~~17~~	~~0/0~~	~~3~~	~~220~~	~~23~~	~~1/0~~	~~31~~	~~13~~	~~230~~	~~9~~	~~0/1~~
7:45 AM	8:00 AM	**39**	**12**	**3**	**2**	**0/0**	**10**	**1**	**6**	**15**	**1/0**	**5**	**255**	**25**	**0/0**	**33**	**18**	**217**	**13**	**0/0**
8:00 AM	8:15 AM	**29**	**10**	**3**	**6**	**2/3**	**13**	**2**	**22**	**28**	**1/0**	**6**	**233**	**25**	**2/0**	**49**	**11**	**214**	**28**	**1/0**
8:15 AM	8:30 AM	**44**	**34**	**1**	**8**	**3/1**	**18**	**1**	**5**	**39**	**1/1**	**7**	**259**	**32**	**0/0**	**57**	**7**	**229**	**20**	**2/0**
8:30 AM	8:45 AM	**33**	**9**	**0**	**0**	**0/0**	**16**	**0**	**4**	**27**	**2/1**	**6**	**252**	**32**	**1/0**	**31**	**14**	**189**	**15**	**0/1**
8:45 AM	9:00 AM	~~29~~	~~12~~	~~0~~	~~3~~	~~1/1~~	~~17~~	~~1~~	~~3~~	~~29~~	~~0/0~~	~~2~~	~~219~~	~~24~~	~~2/0~~	~~29~~	~~13~~	~~197~~	~~11~~	~~0/1~~
AM Peak Hour Volumes		**145**	**65**	**7**	**16**		**57**	**4**	**37**	**109**		**24**	**999**	**114**		**170**	**50**	**849**	**76**	
% of Total Traffic		5.3%	2.4%		0.0%		2.1%		1.4%	4.0%		0.9%	36.7%	4.2%		6.2%	1.8%	31.2%	0.0%	
% Directional			7.7%						7.5%	**Intersection**			41.8%					39.3%		
AM Peak Hour Factor			***0.67***						***0.80***	**0.89**			***0.95***					***0.91***		

Begin Time	End Time	Eastbound (Mountain Rd.)					Westbound (Mountain Rd.)					Northbound (Rio Brande Blvd.)				Southbound (Rio Brande Blvd.)				
		L	T	R (Rom)	R (RG)	Ped / Bike	L (RG)	L (Rom)	T	R	Ped / Bike	L	T	R	Ped / Bike	L(Mount)	L(Rom)	T	R	Ped / Bike
4:00 PM	4:15 PM	~~25~~	~~5~~	~~1~~	~~2~~	~~1/2~~	~~45~~	~~3~~	~~14~~	~~60~~	~~3/2~~	~~6~~	~~215~~	~~12~~	~~0/0~~	~~22~~	~~9~~	~~216~~	~~12~~	~~0/0~~
4:15 PM	4:30 PM	**26**	**8**	**0**	**4**	**1/2**	**34**	**2**	**9**	**37**	**1/0**	**4**	**228**	**11**	**0/0**	**24**	**5**	**239**	**20**	**0/2**
4:30 PM	4:45 PM	**23**	**10**	**0**	**4**	**1/2**	**44**	**3**	**18**	**44**	**2/2**	**10**	**240**	**14**	**1/1**	**20**	**1**	**232**	**34**	**0/0**
4:45 PM	5:00 PM	**17**	**3**	**1**	**4**	**0/0**	**61**	**4**	**13**	**41**	**1/0**	**4**	**244**	**27**	**0/0**	**37**	**8**	**222**	**16**	**0/0**
5:00 PM	5:15 PM	**27**	**7**	**0**	**3**	**2/1**	**76**	**3**	**16**	**39**	**4/1**	**5**	**239**	**6**	**3/1**	**21**	**6**	**206**	**7**	**0/0**
5:15 PM	5:30 PM	~~21~~	~~8~~	~~0~~	~~1~~	~~2/0~~	~~62~~	~~2~~	~~20~~	~~68~~	~~2/1~~	~~3~~	~~200~~	~~10~~	~~0/0~~	~~24~~	~~4~~	~~208~~	~~16~~	~~0/0~~
5:30 PM	5:45 PM	~~21~~	~~7~~	~~0~~	~~3~~	~~1/0~~	~~62~~	~~0~~	~~18~~	~~61~~	~~1/1~~	~~8~~	~~225~~	~~10~~	~~1/0~~	~~24~~	~~5~~	~~201~~	~~27~~	~~0/0~~
5:45 PM	6:00 PM	~~21~~	~~6~~	~~2~~	~~1~~	~~0/0~~	~~43~~	~~2~~	~~12~~	~~30~~	~~1/0~~	~~6~~	~~216~~	~~12~~	~~4/2~~	~~27~~	~~4~~	~~228~~	~~16~~	~~0/0~~
PM Peak Hour Volumes		**93**	**28**	**1**	**15**		**215**	**12**	**56**	**161**		**23**	**951**	**58**		**102**	**20**	**899**	**77**	
% of Total Traffic		3.4%	1.0%		0.6%		7.9%		2.1%	5.9%		0.8%	35.1%	2.1%		3.8%	0.7%	33.2%	2.8%	
% Directional			5.0%						15.9%	**Intersection**			38.1%					40.5%		
PM Peak Hour Factor			***0.90***						***0.83***	**0.97**			***0.94***					***0.95***		

L (Mount) - Left Turn onto Mountain Rd.
L (Rom) - Left Turn onto Romero St.
L (RG) - Left Turn onto Rio Grande Blvd.
R (Rom) - Right Turn onto Romero St
R (RG) - Right Turn onto Rio Grande Blvd.

Terry O. Brown, P.E.

P. O. Box 92051
Albuquerque, NM 87199-2051
(505) 883-8807

Counter: R.C.

File Name : Rio Grande & I40 East Ramp
Site Code : 05042016
Start Date : 5/4/2016
Page No : 1

Groups Printed- Cars - Bikes - Trucks - Buses

	I40 East Ramp Eastbound					I40 East Ramp Westbound					Rio Grande Northbound					Rio Grande Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	103	0	84	0	187	0	0	0	0	0	0	119	136	0	255	34	123	0	0	157	599
07:15 AM	105	0	108	0	213	0	0	0	0	0	0	144	131	1	276	68	165	0	0	233	722
07:30 AM	88	0	113	0	201	0	0	0	0	0	0	173	150	0	323	55	178	0	1	234	758
07:45 AM	92	0	125	0	217	0	0	0	0	0	0	169	136	0	305	63	287	0	1	351	873
Total	388	0	430	0	818	0	0	0	0	0	0	605	553	1	1159	220	753	0	2	975	2952
08:00 AM	78	1	130	0	209	0	0	0	0	0	0	185	171	1	357	67	262	0	0	329	895
08:15 AM	64	1	107	0	172	0	0	0	0	0	0	178	175	0	353	78	302	0	1	381	906
08:30 AM	53	0	96	0	149	0	0	0	0	0	0	133	178	0	311	65	227	0	0	292	752
08:45 AM	48	0	87	0	135	0	0	0	0	0	0	132	164	1	297	59	242	0	2	303	735
Total	243	2	420	0	665	0	0	0	0	0	0	628	688	2	1318	269	1033	0	3	1305	3288
*** BREAK ***																					
04:00 PM	61	0	52	0	113	0	0	0	1	1	0	190	179	0	369	46	274	1	3	324	807
04:15 PM	39	0	60	1	100	0	0	0	0	0	0	199	154	0	353	47	313	0	1	361	814
04:30 PM	41	0	55	1	97	0	0	0	0	0	0	234	158	1	393	47	334	0	0	381	871
04:45 PM	47	0	50	1	98	0	0	0	0	0	0	210	148	0	358	67	294	0	1	362	818
Total	188	0	217	3	408	0	0	0	1	1	0	833	639	1	1473	207	1215	1	5	1428	3310
05:00 PM	45	0	50	0	95	0	0	0	1	1	0	240	175	1	416	64	292	0	0	356	868
05:15 PM	62	0	68	2	132	0	0	0	2	2	0	226	188	0	414	48	281	0	1	330	878
05:30 PM	42	1	60	0	103	0	0	0	0	0	0	219	163	2	384	53	279	0	3	335	822
05:45 PM	54	0	56	0	110	0	0	0	1	1	0	178	127	1	306	59	274	0	4	337	754
Total	203	1	234	2	440	0	0	0	4	4	0	863	653	4	1520	224	1126	0	8	1358	3322
Grand Total	1022	3	1301	5	2331	0	0	0	5	5	0	2929	2533	8	5470	920	4127	1	18	5066	12872
Apprch %	43.8	0.1	55.8	0.2		0	0	0	100		0	53.5	46.3	0.1		18.2	81.5	0	0.4		
Total %	7.9	0	10.1	0	18.1	0	0	0	0	0	0	22.8	19.7	0.1	42.5	7.1	32.1	0	0.1	39.4	
Cars	1018	3	1276	2	2299	0	0	0	3	3	0	2898	2508	3	5409	914	4097	1	6	5018	12729
% Cars	99.6	100	98.1	40	98.6	0	0	0	60	60	0	98.9	99	37.5	98.9	99.3	99.3	100	33.3	99.1	98.9
Bikes	0	0	0	3	3	0	0	0	2	2	0	0	0	5	5	0	0	0	12	12	22
% Bikes	0	0	0	60	0.1	0	0	0	40	40	0	0	0	62.5	0.1	0	0	0	66.7	0.2	0.2
Trucks	1	0	3	0	4	0	0	0	0	0	0	12	15	0	27	6	13	0	0	19	50
% Trucks	0.1	0	0.2	0	0.2	0	0	0	0	0	0	0.4	0.6	0	0.5	0.7	0.3	0	0	0.4	0.4
Buses	3	0	22	0	25	0	0	0	0	0	0	19	10	0	29	0	17	0	0	17	71
% Buses	0.3	0	1.7	0	1.1	0	0	0	0	0	0	0.6	0.4	0	0.5	0	0.4	0	0	0.3	0.6

Terry O. Brown, P.E.

P. O. Box 92051
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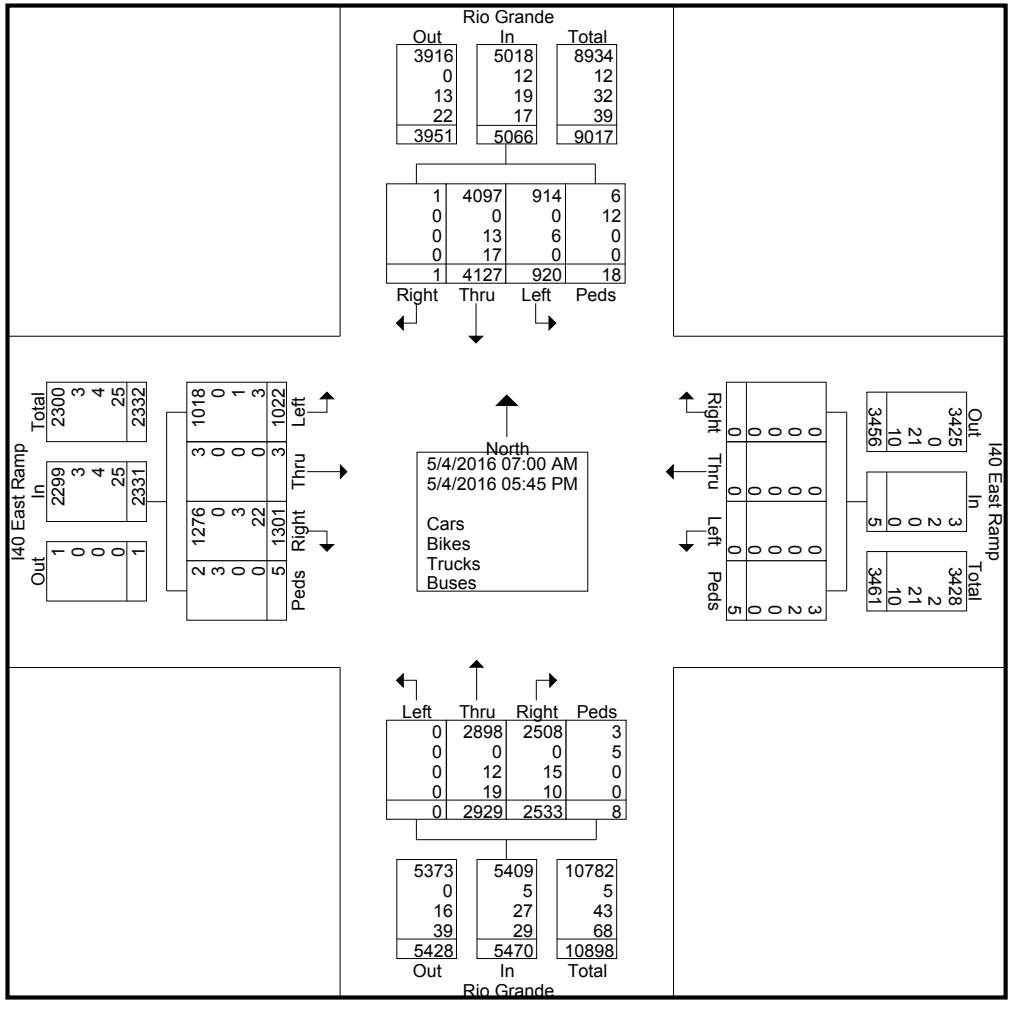
Counter: R.C.

File Name : Rio Grande & I40 East Ramp
Site Code : 05042016
Start Date : 5/4/2016
Page No : 2



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Site Code : 05042016
Start Date : 5/4/2016
Page No : 4

	I40 East Ramp Eastbound					I40 East Ramp Westbound					Rio Grande Northbound					Rio Grande Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	88	0	113	0	201	0	0	0	0	0	0	173	150	0	323	55	178	0	**1**	234	758
07:45 AM	**92**	0	125	0	**217**	0	0	0	0	0	0	169	136	0	305	63	287	0	1	351	873
08:00 AM	78	**1**	**130**	0	209	0	0	0	0	0	0	**185**	171	**1**	**357**	67	262	0	0	329	895
08:15 AM	64	1	107	0	172	0	0	0	0	0	0	178	**175**	0	353	**78**	**302**	0	1	**381**	**906**
Total Volume	322	2	475	0	799	0	0	0	0	0	0	705	632	1	1338	263	1029	0	3	1295	3432
% App. Total	40.3	0.3	59.4	0		0	0	0	0		0	52.7	47.2	0.1		20.3	79.5	0	0.2		
PHF	.875	.500	.913	.000	.921	.000	.000	.000	.000	.000	.000	.953	.903	.250	.937	.843	.852	.000	.750	.850	.947
Cars	322	2	467	0	791	0	0	0	0	0	0	696	623	0	1319	263	1021	0	2	1286	3396
% Cars	100	100	98.3	0	99.0	0	0	0	0	0	0	98.7	98.6	0	98.6	100	99.2	0	66.7	99.3	99.0
Bikes	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	2
% Bikes	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0.1	0	0	0	33.3	0.1	0.1
Trucks	0	0	1	0	1	0	0	0	0	0	0	6	7	0	13	0	4	0	0	4	18
% Trucks	0	0	0.2	0	0.1	0	0	0	0	0	0	0.9	1.1	0	1.0	0	0.4	0	0	0.3	0.5
Buses	0	0	7	0	7	0	0	0	0	0	0	3	2	0	5	0	4	0	0	4	16
% Buses	0	0	1.5	0	0.9	0	0	0	0	0	0	0.4	0.3	0	0.4	0	0.4	0	0	0.3	0.5

Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM					07:00 AM					07:30 AM					07:45 AM				
+0 mins.	**105**	0	108	0	213	0	0	0	0	0	0	173	150	0	323	63	287	0	**1**	351
+15 mins.	88	0	113	0	201	0	0	0	0	0	0	169	136	0	305	67	262	0	0	329
+30 mins.	92	0	125	0	**217**	0	0	0	0	0	0	**185**	171	**1**	**357**	**78**	**302**	0	1	**381**
+45 mins.	78	**1**	**130**	0	209	0	0	0	0	0	0	178	**175**	0	353	65	227	0	0	292
Total Volume	363	1	476	0	840	0	0	0	0	0	0	705	632	1	1338	273	1078	0	2	1353
% App. Total	43.2	0.1	56.7	0		0	0	0	0		0	52.7	47.2	0.1		20.2	79.7	0	0.1	
PHF	.864	.250	.915	.000	.968	.000	.000	.000	.000	.000	.000	.953	.903	.250	.937	.875	.892	.000	.500	.888
Cars	362	1	468	0	831	0	0	0	0	0	0	696	623	0	1319	270	1068	0	1	1339
% Cars	99.7	100	98.3	0	98.9	0	0	0	0	0	0	98.7	98.6	0	98.6	98.9	99.1	0	50	99
Bikes	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1
% Bikes	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0.1	0	0	0	50	0.1
Trucks	1	0	1	0	2	0	0	0	0	0	0	6	7	0	13	3	4	0	0	7
% Trucks	0.3	0	0.2	0	0.2	0	0	0	0	0	0	0.9	1.1	0	1	1.1	0.4	0	0	0.5
Buses	0	0	7	0	7	0	0	0	0	0	0	3	2	0	5	0	6	0	0	6
% Buses	0	0	1.5	0	0.8	0	0	0	0	0	0	0.4	0.3	0	0.4	0	0.6	0	0	0.4

Terry O. Brown, P.E.

P. O. Box 92051
Albuquerque, NM 87199-2051
(505) 883-8807

Counter: R.C.

File Name : Rio Grande & I40 East Ramp
Site Code : 05042016
Start Date : 5/4/2016
Page No : 5

	I40 East Ramp Eastbound					I40 East Ramp Westbound					Rio Grande Northbound					Rio Grande Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	41	0	55	1	97	0	0	0	0	0	0	234	158	**1**	393	47	**334**	0	0	**381**	871
04:45 PM	47	0	50	1	98	0	0	0	0	0	0	210	148	0	358	**67**	294	0	**1**	362	818
05:00 PM	45	0	50	0	95	0	0	0	1	1	0	**240**	175	1	**416**	64	292	0	0	356	868
05:15 PM	**62**	0	**68**	**2**	**132**	0	0	0	**2**	**2**	0	226	**188**	0	414	48	281	0	1	330	**878**
Total Volume	195	0	223	4	422	0	0	0	3	3	0	910	669	2	1581	226	1201	0	2	1429	3435
% App. Total	46.2	0	52.8	0.9		0	0	0	100		0	57.6	42.3	0.1		15.8	84	0	0.1		
PHF	.786	.000	.820	.500	.799	.000	.000	.000	.375	.375	.000	.948	.890	.500	.950	.843	.899	.000	.500	.938	.978
Cars	195	0	216	2	413	0	0	0	2	2	0	903	664	1	1568	224	1194	0	0	1418	3401
% Cars	100	0	96.9	50.0	97.9	0	0	0	66.7	66.7	0	99.2	99.3	50.0	99.2	99.1	99.4	0	0	99.2	99.0
Bikes	0	0	0	2	2	0	0	0	1	1	0	0	0	1	1	0	0	0	2	2	6
% Bikes	0	0	0	50.0	0.5	0	0	0	33.3	33.3	0	0	0	50.0	0.1	0	0	0	100	0.1	0.2
Trucks	0	0	1	0	1	0	0	0	0	0	0	1	3	0	4	2	3	0	0	5	10
% Trucks	0	0	0.4	0	0.2	0	0	0	0	0	0	0.1	0.4	0	0.3	0.9	0.2	0	0	0.3	0.3
Buses	0	0	6	0	6	0	0	0	0	0	0	6	2	0	8	0	4	0	0	4	18
% Buses	0	0	2.7	0	1.4	0	0	0	0	0	0	0.7	0.3	0	0.5	0	0.3	0	0	0.3	0.5

Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM					05:00 PM					04:30 PM					04:15 PM				
+0 mins.	45	0	50	0	95	0	0	0	1	1	0	234	158	**1**	393	47	313	0	**1**	361
+15 mins.	**62**	0	**68**	**2**	**132**	0	0	0	**2**	**2**	0	210	148	0	358	47	**334**	0	0	**381**
+30 mins.	42	**1**	60	0	103	0	0	0	0	0	0	**240**	175	1	**416**	**67**	294	0	1	362
+45 mins.	54	0	56	0	110	0	0	0	1	1	0	226	**188**	0	414	64	292	0	0	356
Total Volume	203	1	234	2	440	0	0	0	4	4	0	910	669	2	1581	225	1233	0	2	1460
% App. Total	46.1	0.2	53.2	0.5		0	0	0	100		0	57.6	42.3	0.1		15.4	84.5	0	0.1	
PHF	.819	.250	.860	.250	.833	.000	.000	.000	.500	.500	.000	.948	.890	.500	.950	.840	.923	.000	.500	.958
Cars	203	1	230	2	436	0	0	0	3	3	0	903	664	1	1568	222	1227	0	0	1449
% Cars	100	100	98.3	100	99.1	0	0	0	75	75	0	99.2	99.3	50	99.2	98.7	99.5	0	0	99.2
Bikes	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	0	0	0	2	2
% Bikes	0	0	0	0	0	0	0	0	25	25	0	0	0	50	0.1	0	0	0	100	0.1
Trucks	0	0	1	0	1	0	0	0	0	0	0	1	3	0	4	3	2	0	0	5
% Trucks	0	0	0.4	0	0.2	0	0	0	0	0	0	0.1	0.4	0	0.3	1.3	0.2	0	0	0.3
Buses	0	0	3	0	3	0	0	0	0	0	0	6	2	0	8	0	4	0	0	4
% Buses	0	0	1.3	0	0.7	0	0	0	0	0	0	0.7	0.3	0	0.5	0	0.3	0	0	0.3

Terry O. Brown, P.E.

P. O. Box 92051
Albuquerque, NM 87199-2051
(505) 883-8807

Counter: R.C.

File Name : Rio Grande & I40 West Ramp
Site Code : 05032016
Start Date : 5/3/2016
Page No : 1

Groups Printed- Cars - Bikes - Trucks - Buses

	I40 West Ramp Eastbound					I40 West Ramp Westbound					Rio Grande Northbound					Rio Grande Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	82	2	37	0	121	22	182	0	0	204	0	133	37	1	171	496
07:15 AM	0	0	0	0	0	100	0	37	1	138	34	248	0	2	284	0	155	53	1	209	631
07:30 AM	0	0	0	0	0	109	0	57	1	167	29	241	0	1	271	0	173	72	1	246	684
07:45 AM	0	0	0	0	0	143	0	67	0	210	56	219	0	1	276	0	220	67	2	289	775
Total	0	0	0	0	0	434	2	198	2	636	141	890	0	4	1035	0	681	229	5	915	2586
08:00 AM	0	0	0	0	0	157	1	67	1	226	45	202	0	1	248	0	209	42	1	252	726
08:15 AM	0	0	0	0	0	159	2	55	0	216	53	176	0	0	229	0	248	40	0	288	733
08:30 AM	0	0	0	0	0	122	0	55	0	177	68	138	0	0	206	0	195	31	1	227	610
08:45 AM	0	0	0	0	0	132	1	62	0	195	49	136	0	1	186	0	163	25	2	190	571
Total	0	0	0	0	0	570	4	239	1	814	215	652	0	2	869	0	815	138	4	957	2640
*** BREAK ***																					
04:00 PM	0	0	0	0	0	192	2	78	0	272	93	148	0	3	244	0	164	95	2	261	777
04:15 PM	0	0	0	0	0	180	0	72	4	256	88	186	0	1	275	0	148	69	0	217	748
04:30 PM	0	0	0	0	0	176	0	65	0	241	111	160	0	0	271	0	159	74	0	233	745
04:45 PM	0	0	0	0	0	180	1	72	0	253	105	175	0	1	281	0	146	71	1	218	752
Total	0	0	0	0	0	728	3	287	4	1022	397	669	0	5	1071	0	617	309	3	929	3022
05:00 PM	0	0	0	0	0	148	1	67	0	216	108	161	0	1	270	0	201	93	0	294	780
05:15 PM	0	0	0	0	0	147	0	41	0	188	91	179	0	0	270	0	152	106	0	258	716
05:30 PM	0	0	0	0	0	147	1	57	0	205	105	158	0	1	264	0	163	113	1	277	746
05:45 PM	0	0	0	0	0	157	0	46	1	204	107	168	0	3	278	0	167	91	3	261	743
Total	0	0	0	0	0	599	2	211	1	813	411	666	0	5	1082	0	683	403	4	1090	2985
Grand Total	0	0	0	0	0	2331	11	935	8	3285	1164	2877	0	16	4057	0	2796	1079	16	3891	11233
Apprch %	0	0	0	0		71	0.3	28.5	0.2		28.7	70.9	0	0.4		0	71.9	27.7	0.4		
Total %	0	0	0	0	0	20.8	0.1	8.3	0.1	29.2	10.4	25.6	0	0.1	36.1	0	24.9	9.6	0.1	34.6	
Cars	0	0	0	0	0	2304	11	919	8	3242	1134	2858	0	8	4000	0	2783	1068	5	3856	11098
% Cars	0	0	0	0	0	98.8	100	98.3	100	98.7	97.4	99.3	0	50	98.6	0	99.5	99	31.2	99.1	98.8
Bikes	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8	0	0	0	11	11	19
% Bikes	0	0	0	0	0	0	0	0	0	0	0	0	0	50	0.2	0	0	0	68.8	0.3	0.2
Trucks	0	0	0	0	0	13	0	5	0	18	13	14	0	0	27	0	2	6	0	8	53
% Trucks	0	0	0	0	0	0.6	0	0.5	0	0.5	1.1	0.5	0	0	0.7	0	0.1	0.6	0	0.2	0.5
Buses	0	0	0	0	0	14	0	11	0	25	17	5	0	0	22	0	11	5	0	16	63
% Buses	0	0	0	0	0	0.6	0	1.2	0	0.8	1.5	0.2	0	0	0.5	0	0.4	0.5	0	0.4	0.6

Terry O. Brown, P.E.

P. O. Box 92051
Albuquerque, NM 87199-2051
(505) 883-8807

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File Name : Rio Grande & I40 West Ramp
Site Code : 05032016
Start Date : 5/3/2016
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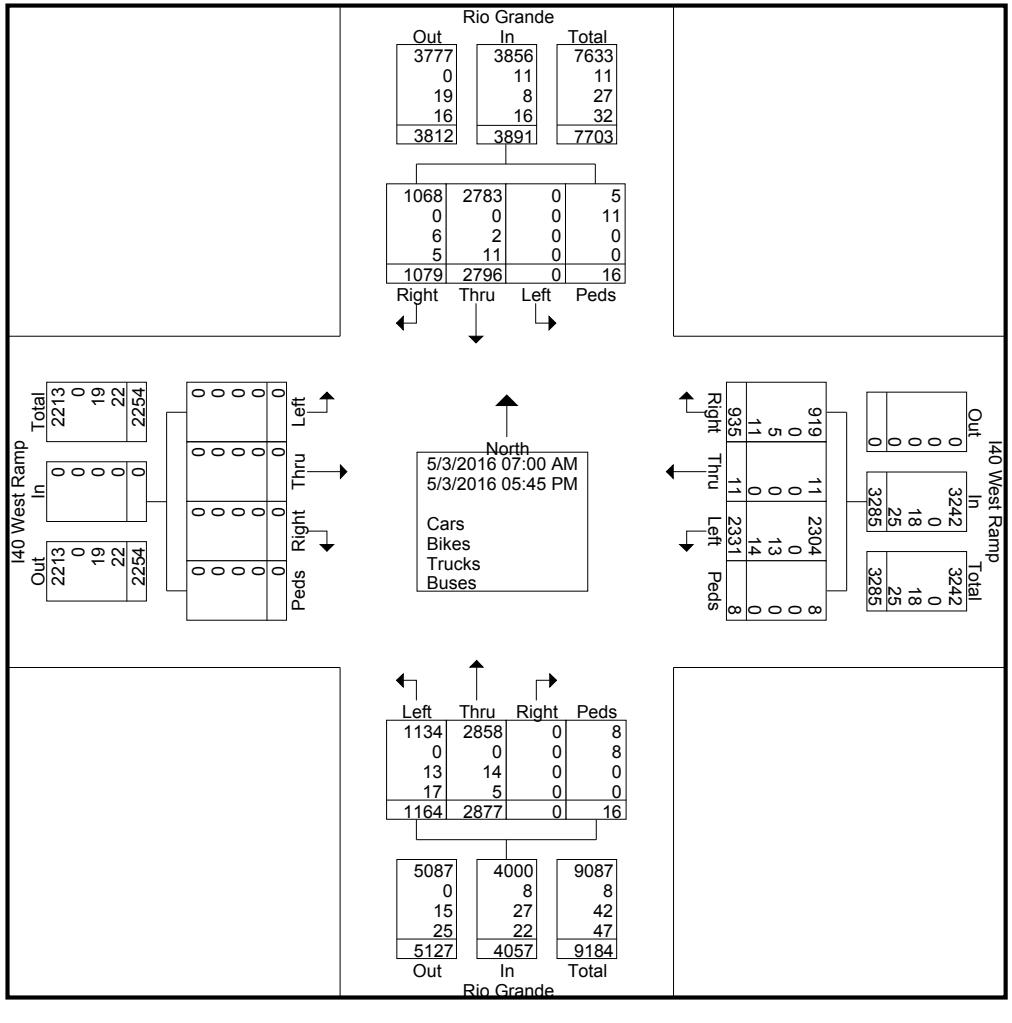

Terry O. Brown, P.E.

P. O. Box 92051
Albuquerque, NM 87199-2051
(505) 883-8807

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File Name : Rio Grande & I40 West Ramp
Site Code : 05032016
Start Date : 5/3/2016
Page No : 4

	I40 West Ramp Eastbound					I40 West Ramp Westbound					Rio Grande Northbound					Rio Grande Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	0	0	0	109	0	57	**1**	167	29	**241**	0	**1**	271	0	173	**72**	1	246	684
07:45 AM	0	0	0	0	0	143	0	**67**	0	210	**56**	219	0	1	**276**	0	220	67	**2**	**289**	**775**
08:00 AM	0	0	0	0	0	157	1	67	1	**226**	45	202	0	1	248	0	209	42	1	252	726
08:15 AM	0	0	0	0	0	**159**	**2**	55	0	216	53	176	0	0	229	0	**248**	40	0	288	733
Total Volume	0	0	0	0	0	568	3	246	2	819	183	838	0	3	1024	0	850	221	4	1075	2918
% App. Total	0	0	0	0		69.4	0.4	30	0.2		17.9	81.8	0	0.3		0	79.1	20.6	0.4		
PHF	.000	.000	.000	.000	.000	.893	.375	.918	.500	.906	.817	.869	.000	.750	.928	.000	.857	.767	.500	.930	.941
Cars	0	0	0	0	0	559	3	240	2	804	176	835	0	1	1012	0	847	214	2	1063	2879
% Cars	0	0	0	0	0	98.4	100	97.6	100	98.2	96.2	99.6	0	33.3	98.8	0	99.6	96.8	50.0	98.9	98.7
Bikes	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	2	2	4
% Bikes	0	0	0	0	0	0	0	0	0	0	0	0	0	66.7	0.2	0	0	0	50.0	0.2	0.1
Trucks	0	0	0	0	0	5	0	2	0	7	4	3	0	0	7	0	1	3	0	4	18
% Trucks	0	0	0	0	0	0.9	0	0.8	0	0.9	2.2	0.4	0	0	0.7	0	0.1	1.4	0	0.4	0.6
Buses	0	0	0	0	0	4	0	4	0	8	3	0	0	0	3	0	2	4	0	6	17
% Buses	0	0	0	0	0	0.7	0	1.6	0	1.0	1.6	0	0	0	0.3	0	0.2	1.8	0	0.6	0.6

Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM					07:45 AM					07:15 AM					07:30 AM				
+0 mins.	0	0	0	0	0	143	0	**67**	0	210	34	**248**	0	**2**	**284**	0	173	**72**	1	246
+15 mins.	0	0	0	0	0	157	1	67	**1**	**226**	29	241	0	1	271	0	220	67	**2**	**289**
+30 mins.	0	0	0	0	0	**159**	**2**	55	0	216	**56**	219	0	1	276	0	209	42	1	252
+45 mins.	0	0	0	0	0	122	0	55	0	177	45	202	0	1	248	0	**248**	40	0	288
Total Volume	0	0	0	0	0	581	3	244	1	829	164	910	0	5	1079	0	850	221	4	1075
% App. Total	0	0	0	0		70.1	0.4	29.4	0.1		15.2	84.3	0	0.5		0	79.1	20.6	0.4	
PHF	.000	.000	.000	.000	.000	.914	.375	.910	.250	.917	.732	.917	.000	.625	.950	.000	.857	.767	.500	.930
Cars	0	0	0	0	0	568	3	236	1	808	156	906	0	2	1064	0	847	214	2	1063
% Cars	0	0	0	0	0	97.8	100	96.7	100	97.5	95.1	99.6	0	40	98.6	0	99.6	96.8	50	98.9
Bikes	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	2	2
% Bikes	0	0	0	0	0	0	0	0	0	0	0	0	0	60	0.3	0	0	0	50	0.2
Trucks	0	0	0	0	0	6	0	3	0	9	4	3	0	0	7	0	1	3	0	4
% Trucks	0	0	0	0	0	1	0	1.2	0	1.1	2.4	0.3	0	0	0.6	0	0.1	1.4	0	0.4
Buses	0	0	0	0	0	7	0	5	0	12	4	1	0	0	5	0	2	4	0	6
% Buses	0	0	0	0	0	1.2	0	2	0	1.4	2.4	0.1	0	0	0.5	0	0.2	1.8	0	0.6

Terry O. Brown, P.E.

P. O. Box 92051
Albuquerque, NM 87199-2051
(505) 883-8807

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File Name : Rio Grande & I40 West Ramp
Site Code : 05032016
Start Date : 5/3/2016
Page No : 5

	I40 West Ramp Eastbound					I40 West Ramp Westbound					Rio Grande Northbound					Rio Grande Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	0	0	0	0	0	**180**	0	**72**	**4**	**256**	88	**186**	0	**1**	275	0	148	69	0	217	748
04:30 PM	0	0	0	0	0	176	0	65	0	241	**111**	160	0	0	271	0	159	74	0	233	745
04:45 PM	0	0	0	0	0	180	**1**	72	0	253	105	175	0	1	**281**	0	146	71	**1**	218	752
05:00 PM	0	0	0	0	0	148	1	67	0	216	108	161	0	1	270	0	**201**	**93**	0	**294**	**780**
Total Volume	0	0	0	0	0	684	2	276	4	966	412	682	0	3	1097	0	654	307	1	962	3025
% App. Total	0	0	0	0		70.8	0.2	28.6	0.4		37.6	62.2	0	0.3		0	68	31.9	0.1		
PHF	.000	.000	.000	.000	.000	.950	.500	.958	.250	.943	.928	.917	.000	.750	.976	.000	.813	.825	.250	.818	.970
Cars	0	0	0	0	0	677	2	273	4	956	409	680	0	1	1090	0	653	307	0	960	3006
% Cars	0	0	0	0	0	99.0	100	98.9	100	99.0	99.3	99.7	0	33.3	99.4	0	99.8	100	0	99.8	99.4
Bikes	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	1	1	3
% Bikes	0	0	0	0	0	0	0	0	0	0	0	0	0	66.7	0.2	0	0	0	100	0.1	0.1
Trucks	0	0	0	0	0	1	0	0	0	1	0	2	0	0	2	0	0	0	0	0	3
% Trucks	0	0	0	0	0	0.1	0	0	0	0.1	0	0.3	0	0	0.2	0	0	0	0	0	0.1
Buses	0	0	0	0	0	6	0	3	0	9	3	0	0	0	3	0	1	0	0	1	13
% Buses	0	0	0	0	0	0.9	0	1.1	0	0.9	0.7	0	0	0	0.3	0	0.2	0	0	0.1	0.4

Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	12:00 PM					04:00 PM					04:15 PM					05:00 PM					
+0 mins.	0	0	0	0	0	**192**	**2**	**78**	0	**272**	88	**186**	0	**1**	275	0	**201**	93	0	**294**	
+15 mins.	0	0	0	0	0	180	0	72	**4**	256	**111**	160	0	0	271	0	152	106	0	258	
+30 mins.	0	0	0	0	0	176	0	65	0	241	105	175	0	1	**281**	0	163	**113**	1	277	
+45 mins.	0	0	0	0	0	180	1	72	0	253	108	161	0	1	270	0	167	91	**3**	261	
Total Volume	0	0	0	0	0	728	3	287	4	1022	412	682	0	3	1097	0	683	403	4	1090	
% App. Total	0	0	0	0		71.2	0.3	28.1	0.4		37.6	62.2	0	0.3		0	62.7	37	0.4		
PHF	.000	.000	.000	.000	.000	.948	.375	.920	.250	.939	.928	.917	.000	.750	.976	.000	.850	.892	.333	.927	
Cars	0	0	0	0	0	723	3	284	4	1014	409	680	0	1	1090	0	682	402	0	1084	
% Cars	0	0	0	0	0	99.3	100	99	100	99.2	99.3	99.7	0	33.3	99.4	0	99.9	99.8	0	99.4	
Bikes	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	4	4	
% Bikes	0	0	0	0	0	0	0	0	0	0	0	0	0	66.7	0.2	0	0	0	100	0.4	
Trucks	0	0	0	0	0	1	0	0	0	1	0	2	0	0	2	0	0	1	0	1	
% Trucks	0	0	0	0	0	0.1	0	0	0	0.1	0	0.3	0	0	0.2	0	0	0.2	0	0.1	
Buses	0	0	0	0	0	4	0	3	0	7	3	0	0	0	3	0	1	0	0	1	
% Buses	0	0	0	0	0	0.5	0	1	0	0.7	0.7	0	0	0	0.3	0	0.1	0	0	0.1	

Rio Grande Blvd. North of Aspen Ave. NW

Terry O. Brown, P.E.
P. O. Box 92051
Albuquerque, NM 87199-2051
(505) 883-8807

Site Code: North
Station ID:

Latitude: 35' 6.000 North

Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
11/08/15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	3	383	68	0	17	3	0	10	0	2	0	0	0	8	494
19:00	1	348	48	0	16	2	0	6	2	1	0	0	0	4	428
20:00	1	280	41	1	0	1	0	4	0	0	0	0	0	0	328
21:00	3	210	41	0	2	0	0	7	0	0	1	0	0	1	265
22:00	2	143	28	0	3	0	0	3	0	0	0	0	0	2	181
23:00	0	88	16	0	3	0	0	0	0	0	1	0	0	1	109
Total	10	1452	242	1	41	6	0	30	2	3	2	0	0	16	1805
Percent	0.6%	80.4%	13.4%	0.1%	2.3%	0.3%	0.0%	1.7%	0.1%	0.2%	0.1%	0.0%	0.0%	0.9%	
AM Peak															
Vol.															
PM Peak	18:00	18:00	18:00	20:00	18:00	18:00		18:00	19:00	18:00	21:00			18:00	
Vol.	3	383	68	1	17	3		10	2	2	1			8	

NOTE: 2 Axle Long volumes may be overstated since tubes were set about 180 feet south of the signal stop bar.

Rio Grande Blvd. North of Aspen Ave. NW

Terry O. Brown, P.E.
P. O. Box 92051
Albuquerque, NM 87199-2051
(505) 883-8807

Site Code: North
Station ID:

Latitude: 35' 6.000 North

Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
11/09/15	0	66	9	0	1	0	0	1	0	0	0	0	0	0	77
01:00	0	24	5	0	2	1	0	1	0	0	0	0	0	0	33
02:00	0	24	4	0	1	0	0	0	1	0	0	0	0	0	30
03:00	0	29	4	0	2	0	0	0	0	0	0	0	0	0	35
04:00	0	35	6	0	0	0	0	0	0	0	0	0	0	0	41
05:00	0	91	24	1	3	0	0	5	2	0	0	0	0	0	126
06:00	1	270	64	0	15	1	0	12	0	0	0	0	0	0	363
07:00	2	528	112	1	16	1	0	16	2	5	0	0	1	3	687
08:00	3	602	115	8	23	3	1	17	0	2	0	0	1	10	785
09:00	1	561	120	6	21	2	0	29	0	1	0	0	0	3	744
10:00	3	535	127	4	31	4	0	20	1	2	0	0	0	3	730
11:00	3	560	147	4	36	6	0	18	5	0	3	2	0	8	792
12 PM	2	533	133	2	22	0	0	16	1	3	1	0	1	3	717
13:00	4	452	94	0	35	4	0	15	0	5	1	1	0	2	613
14:00	1	497	107	5	24	0	0	13	3	2	1	0	1	4	658
15:00	3	376	91	2	20	2	0	8	1	1	1	3	0	5	513
16:00	2	490	104	5	15	2	0	18	1	2	1	0	0	10	650
17:00	1	363	72	4	14	1	0	10	0	0	0	0	0	7	472
18:00	5	450	71	1	12	0	0	13	1	0	0	1	1	8	563
19:00	1	415	59	1	8	0	0	10	0	2	1	1	0	5	503
20:00	2	295	45	0	4	1	0	7	0	0	0	0	1	4	359
21:00	1	234	36	0	4	0	0	3	0	1	0	0	0	3	282
22:00	1	167	23	0	0	0	0	3	0	1	0	0	0	1	196
23:00	3	65	17	0	1	0	0	2	0	0	0	0	0	1	89
Total	39	7662	1589	44	310	28	1	237	18	27	9	8	6	80	10058
Percent	0.4%	76.2%	15.8%	0.4%	3.1%	0.3%	0.0%	2.4%	0.2%	0.3%	0.1%	0.1%	0.1%	0.8%	
AM Peak	08:00	08:00	11:00	08:00	11:00	11:00	08:00	09:00	11:00	07:00	11:00	11:00	07:00	08:00	
Vol.	3	602	147	8	36	6	1	29	5	5	3	2	1	10	
PM Peak	18:00	12:00	12:00	14:00	13:00	13:00		16:00	14:00	13:00	12:00	15:00	12:00	16:00	
Vol.	5	533	133	5	35	4		18	3	5	1	3	1	10	

NOTE: 2 Axle Long volumes may be overstated since tubes were set about 180 feet south of the signal stop bar.

Rio Grande Blvd. North of Aspen Ave. NW

Terry O. Brown, P.E.
P. O. Box 92051
Albuquerque, NM 87199-2051
(505) 883-8807

Site Code: North
Station ID:

Latitude: 35' 6.000 North

Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
11/10/15	0	53	6	0	2	0	0	1	0	0	0	0	0	0	62
01:00	0	25	2	0	1	0	0	1	0	0	0	0	0	0	29
02:00	0	23	3	0	0	0	0	0	0	0	0	0	0	0	26
03:00	0	18	4	0	0	0	0	0	0	0	0	0	0	0	22
04:00	0	21	9	1	0	0	0	0	0	0	0	0	0	0	31
05:00	0	89	23	1	6	0	0	3	1	0	0	0	0	0	123
06:00	0	291	65	1	9	3	0	6	1	1	1	0	0	2	380
07:00	3	576	101	1	17	2	0	23	1	2	1	0	1	6	734
08:00	3	661	113	5	24	1	0	27	1	1	0	0	0	7	843
09:00	3	524	117	7	30	2	0	14	3	1	2	0	3	10	716
10:00	1	488	110	4	21	3	0	18	0	3	0	0	1	7	656
11:00	3	522	122	6	25	1	0	18	2	1	1	0	1	10	712
12 PM	1	487	113	5	23	1	0	13	0	1	0	2	1	5	652
13:00	2	490	105	4	25	5	0	11	0	1	1	0	0	4	648
14:00	2	578	122	4	23	2	0	21	1	2	3	0	1	5	764
15:00	1	352	93	2	10	3	0	9	1	3	1	0	2	5	482
16:00	2	455	98	0	14	2	0	12	3	0	2	0	0	2	590
17:00	0	310	65	5	12	2	0	9	0	2	2	0	0	7	414
18:00	2	522	98	4	12	1	0	11	1	1	3	0	1	8	664
19:00	2	409	68	1	10	1	0	9	0	0	0	0	0	2	502
20:00	2	353	35	0	5	1	0	7	0	2	1	0	0	1	407
21:00	3	247	29	1	2	1	0	3	1	0	0	0	1	0	288
22:00	0	177	24	0	2	0	0	4	0	0	0	0	0	1	208
23:00	2	109	26	0	2	0	0	0	0	0	0	0	0	0	139
Total	32	7780	1551	52	275	31	0	220	16	21	18	2	12	82	10092
Percent	0.3%	77.1%	15.4%	0.5%	2.7%	0.3%	0.0%	2.2%	0.2%	0.2%	0.2%	0.0%	0.1%	0.8%	
AM Peak	07:00	08:00	11:00	09:00	09:00	06:00		08:00	09:00	10:00	09:00		09:00	09:00	
Vol.	3	661	122	7	30	3		27	3	3	2		3	10	
PM Peak	21:00	14:00	14:00	12:00	13:00	13:00		14:00	16:00	15:00	14:00	12:00	15:00	18:00	
Vol.	3	578	122	5	25	5		21	3	3	3	2	2	8	

NOTE: 2 Axle Long volumes may be overstated since tubes were set about 180 feet south of the signal stop bar.

Rio Grande Blvd. North of Aspen Ave. NW

Terry O. Brown, P.E.
P. O. Box 92051
Albuquerque, NM 87199-2051
(505) 883-8807

Site Code: North
Station ID:

Latitude: 35' 6.000 North

Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
11/11/15	0	41	7	0	1	0	0	0	0	0	0	0	0	0	49
01:00	0	28	5	0	0	0	0	1	0	0	0	0	0	0	34
02:00	0	23	6	0	0	0	0	0	1	0	0	0	0	0	30
03:00	0	22	2	0	0	0	0	0	0	0	0	0	0	0	24
04:00	0	32	6	0	0	0	0	1	0	0	0	0	0	0	39
05:00	0	81	20	1	6	0	0	1	2	0	0	0	0	0	111
06:00	1	231	69	0	10	0	0	4	0	0	0	0	0	0	315
07:00	2	449	109	3	17	3	0	19	0	1	1	0	0	5	609
08:00	0	541	116	6	22	3	0	21	0	0	0	0	0	8	717
09:00	3	482	104	3	23	3	1	14	1	3	1	1	0	7	646
10:00	4	591	107	3	16	7	0	22	1	0	2	0	1	8	762
11:00	2	561	113	2	17	4	0	14	1	5	0	0	0	11	730
12 PM	7	510	90	6	11	0	0	15	1	2	2	1	0	7	652
13:00	1	438	100	5	18	1	0	22	0	0	1	1	1	4	592
14:00	2	514	104	3	13	3	0	15	0	2	2	0	1	4	663
15:00	1	391	90	2	10	2	0	9	0	2	0	0	1	3	511
16:00	3	535	106	3	23	1	0	16	0	1	2	0	2	6	698
17:00	6	468	106	1	18	2	1	15	0	0	1	0	1	11	630
18:00	3	527	82	0	12	4	0	11	0	1	1	0	0	8	649
19:00	1	437	63	0	13	1	0	11	0	1	1	0	0	5	533
20:00	1	592	96	1	11	3	0	15	0	3	2	1	0	3	728
21:00	1	322	34	0	4	0	0	5	0	0	0	1	0	2	369
22:00	1	171	28	0	6	0	0	2	0	0	0	0	0	0	208
23:00	0	99	19	0	6	0	0	1	0	0	0	0	0	0	125
Total	39	8086	1582	39	257	37	2	234	7	21	16	5	7	92	10424
Percent	0.4%	77.6%	15.2%	0.4%	2.5%	0.4%	0.0%	2.2%	0.1%	0.2%	0.2%	0.0%	0.1%	0.9%	
AM Peak	10:00	10:00	08:00	08:00	09:00	10:00	09:00	10:00	05:00	11:00	10:00	09:00	10:00	11:00	
Vol.	4	591	116	6	23	7	1	22	2	5	2	1	1	11	
PM Peak	12:00	20:00	16:00	12:00	16:00	18:00	17:00	13:00	12:00	20:00	12:00	12:00	16:00	17:00	
Vol.	7	592	106	6	23	4	1	22	1	3	2	1	2	11	

NOTE: 2 Axle Long volumes may be overstated since tubes were set about 180 feet south of the signal stop bar.

Rio Grande Blvd. North of Aspen Ave. NW

Terry O. Brown, P.E.
P. O. Box 92051
Albuquerque, NM 87199-2051
(505) 883-8807

Site Code: North
Station ID:

Latitude: 35' 6.000 North

Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
11/12/15	1	64	11	1	0	1	0	0	0	0	0	0	0	0	78
01:00	0	29	8	0	3	0	0	0	0	0	0	0	0	0	40
02:00	0	19	6	0	1	1	0	0	1	0	0	0	0	0	28
03:00	1	25	6	0	2	0	0	0	1	0	0	0	0	0	35
04:00	0	26	6	1	0	0	0	1	0	0	0	0	0	0	34
05:00	2	91	21	2	3	0	0	3	0	0	1	0	0	0	123
06:00	0	258	55	1	10	0	0	7	2	0	0	0	0	4	337
07:00	3	463	100	2	18	7	0	14	3	1	1	1	2	5	620
08:00	6	682	114	4	21	2	0	18	1	0	0	1	1	10	860
09:00	2	505	100	10	25	3	0	19	4	1	3	0	0	6	678
10:00	2	443	101	2	20	3	0	16	0	2	2	0	0	5	596
11:00	1	469	89	2	16	1	0	17	2	1	0	2	0	11	611
12 PM	3	428	95	3	19	2	0	17	0	2	2	1	1	10	583
13:00	0	375	71	1	17	3	0	13	1	1	0	1	2	6	491
14:00	3	434	94	3	23	3	0	19	0	1	0	0	0	6	586
15:00	1	139	38	1	4	0	0	7	0	0	0	0	0	1	191
16:00	2	251	55	2	9	0	0	11	1	1	1	0	0	1	334
17:00	0	359	71	4	7	2	0	10	0	1	1	0	0	4	459
18:00	3	479	62	1	7	0	0	11	0	0	1	0	0	3	567
19:00	2	422	65	0	7	2	0	8	0	2	1	0	2	4	515
20:00	1	362	53	0	8	0	0	6	0	0	0	0	0	4	434
21:00	3	323	39	0	7	2	0	4	0	1	1	0	0	0	380
22:00	1	212	28	0	4	1	0	0	0	2	1	0	0	1	250
23:00	0	107	24	0	3	0	0	0	0	0	1	0	0	0	135
Total	37	6965	1312	40	234	33	0	201	16	16	16	6	8	81	8965
Percent	0.4%	77.7%	14.6%	0.4%	2.6%	0.4%	0.0%	2.2%	0.2%	0.2%	0.2%	0.1%	0.1%	0.9%	
AM Peak	08:00	08:00	08:00	09:00	09:00	07:00		09:00	09:00	10:00	09:00	11:00	07:00	11:00	
Vol.	6	682	114	10	25	7		19	4	2	3	2	2	11	
PM Peak	12:00	18:00	12:00	17:00	14:00	13:00		14:00	13:00	12:00	12:00	12:00	13:00	12:00	
Vol.	3	479	95	4	23	3		19	1	2	2	1	2	10	
Grand Total	157	31945	6276	176	1117	135	3	922	59	88	61	21	33	351	41344
Percent	0.4%	77.3%	15.2%	0.4%	2.7%	0.3%	0.0%	2.2%	0.1%	0.2%	0.1%	0.1%	0.1%	0.8%	

NOTE: 2 Axle Long volumes may be overstated since tubes were set about 180 feet south of the signal stop bar.

Rio Grande Blvd. North of Aspen Ave. NW

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Site Code: North
Station ID:

Latitude: 35' 6.000 North

Northbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
11/08/15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	4	374	128	0	35	1	0	3	0	0	0	0	0	1	546
19:00	0	306	95	0	24	0	0	3	0	0	0	0	0	2	430
20:00	1	247	113	0	27	1	0	5	0	0	0	0	0	2	396
21:00	1	152	66	0	21	0	0	1	0	0	0	0	0	0	241
22:00	2	133	46	0	11	0	0	1	0	0	0	0	0	0	193
23:00	1	91	37	0	8	0	0	1	0	0	0	0	0	0	138
Total	9	1303	485	0	126	2	0	14	0	0	0	0	0	5	1944
Percent	0.5%	67.0%	24.9%	0.0%	6.5%	0.1%	0.0%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	
AM Peak															
Vol.															
PM Peak	18:00	18:00	18:00		18:00	18:00		20:00						19:00	
Vol.	4	374	128		35	1		5						2	

NOTE: 2 Axle Long volumes may be overstated since tubes were set about 180 feet south of the signal stop bar.

Rio Grande Blvd. North of Aspen Ave. NW

Terry O. Brown, P.E.
P. O. Box 92051
Albuquerque, NM 87199-2051
(505) 883-8807

Site Code: North
Station ID:

Latitude: 35' 6.000 North

Northbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
11/09/15	0	37	17	0	5	0	0	0	0	0	0	0	0	0	59
01:00	0	31	6	0	5	0	0	0	0	0	0	0	0	0	42
02:00	0	20	9	0	2	0	0	0	1	0	0	0	0	0	32
03:00	0	19	14	0	3	0	0	0	1	0	0	0	0	0	37
04:00	2	43	16	0	5	0	0	2	2	0	0	0	0	0	70
05:00	4	108	59	0	27	1	0	1	1	0	0	0	0	0	201
06:00	2	298	140	4	75	0	0	16	1	0	0	0	1	0	537
07:00	7	406	150	1	50	5	0	19	0	3	0	0	0	2	643
08:00	1	335	146	7	68	2	0	13	0	0	0	0	1	4	577
09:00	2	376	160	6	82	1	2	17	2	0	0	1	0	4	653
10:00	7	361	173	2	73	3	0	15	3	0	0	1	0	8	646
11:00	5	419	194	3	74	1	2	13	2	1	0	0	0	0	714
12 PM	1	457	176	8	77	0	0	9	2	0	1	2	1	2	736
13:00	11	409	160	4	55	3	0	8	0	1	2	1	0	1	655
14:00	5	378	160	3	62	3	0	10	1	1	1	0	0	2	626
15:00	4	305	103	2	39	1	0	4	1	0	0	1	0	0	460
16:00	3	385	147	3	37	1	1	10	1	1	0	0	0	6	595
17:00	3	217	66	0	19	1	0	4	0	0	0	0	0	1	311
18:00	2	434	155	1	54	0	0	10	0	0	0	0	0	2	658
19:00	2	292	136	1	33	3	0	5	0	0	0	0	0	1	473
20:00	0	316	118	2	25	0	1	2	0	0	0	0	0	2	466
21:00	1	178	94	1	17	0	0	4	0	0	1	0	0	1	297
22:00	0	133	46	0	18	0	0	0	0	0	0	0	0	0	197
23:00	1	63	30	0	5	1	0	0	0	0	0	0	0	0	100
Total	63	6020	2475	48	910	26	6	162	18	7	5	6	3	36	9785
Percent	0.6%	61.5%	25.3%	0.5%	9.3%	0.3%	0.1%	1.7%	0.2%	0.1%	0.1%	0.1%	0.0%	0.4%	
AM Peak	07:00	11:00	11:00	08:00	09:00	07:00	09:00	07:00	10:00	07:00		09:00	06:00	10:00	
Vol.	7	419	194	7	82	5	2	19	3	3		1	1	8	
PM Peak	13:00	12:00	12:00	12:00	12:00	13:00	16:00	14:00	12:00	13:00	13:00	12:00	12:00	16:00	
Vol.	11	457	176	8	77	3	1	10	2	1	2	2	1	6	

NOTE: 2 Axle Long volumes may be overstated since tubes were set about 180 feet south of the signal stop bar.

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(505) 883-8807

Site Code: North
Station ID:

Latitude: 35' 6.000 North

Northbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
11/10/15	1	24	14	0	4	0	0	0	0	0	0	0	0	0	43
01:00	0	14	7	0	3	0	0	0	0	0	0	0	0	0	24
02:00	0	17	5	0	3	0	0	0	0	0	0	0	0	0	25
03:00	0	12	7	1	4	0	0	0	0	0	0	0	0	0	24
04:00	1	34	21	0	5	0	0	1	0	0	0	0	0	0	62
05:00	1	114	72	0	34	0	0	2	0	0	0	0	0	1	224
06:00	1	292	162	3	66	2	0	6	0	1	0	1	0	3	537
07:00	1	323	150	1	53	1	0	30	2	2	2	1	0	2	568
08:00	3	365	177	5	45	2	0	14	4	1	0	0	0	4	620
09:00	4	390	190	2	81	1	0	11	0	1	1	1	1	4	687
10:00	6	374	154	4	67	3	0	14	2	1	1	0	0	4	630
11:00	4	376	179	2	84	2	0	14	0	0	1	2	0	0	664
12 PM	3	436	157	6	48	3	0	17	1	1	1	0	0	3	676
13:00	8	444	172	6	49	3	0	12	0	2	1	0	1	3	701
14:00	8	421	177	3	56	1	0	12	0	0	0	0	1	2	681
15:00	4	237	97	2	24	2	0	8	0	0	0	0	0	3	377
16:00	2	303	126	1	30	0	0	8	0	0	0	0	0	3	473
17:00	2	248	80	0	25	1	0	5	0	0	0	0	0	1	362
18:00	3	410	153	2	53	3	0	12	1	1	0	0	0	4	642
19:00	1	352	146	2	40	1	0	4	0	0	0	0	0	0	546
20:00	1	382	137	5	44	1	0	7	0	0	0	0	0	0	577
21:00	0	218	88	2	19	0	0	4	0	0	0	0	0	2	333
22:00	0	156	70	0	13	0	0	3	1	0	0	0	0	0	243
23:00	0	81	28	0	5	0	0	0	0	0	0	0	0	0	114
Total	54	6023	2569	47	855	26	0	184	11	10	7	5	3	39	9833
Percent	0.5%	61.3%	26.1%	0.5%	8.7%	0.3%	0.0%	1.9%	0.1%	0.1%	0.1%	0.1%	0.0%	0.4%	
AM Peak	10:00	09:00	09:00	08:00	11:00	10:00		07:00	08:00	07:00	07:00	11:00	09:00	08:00	
Vol.	6	390	190	5	84	3		30	4	2	2	2	1	4	
PM Peak	13:00	13:00	14:00	12:00	14:00	12:00		12:00	12:00	13:00	12:00		13:00	18:00	
Vol.	8	444	177	6	56	3		17	1	2	1		1	4	

NOTE: 2 Axle Long volumes may be overstated since tubes were set about 180 feet south of the signal stop bar.

Rio Grande Blvd. North of Aspen Ave. NW

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(505) 883-8807

Site Code: North
Station ID:

Latitude: 35' 6.000 North

Northbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
11/11/15	1	35	16	0	7	0	0	0	0	0	0	0	0	1	60
01:00	0	18	12	0	2	0	0	0	0	0	0	0	0	0	32
02:00	0	23	15	0	3	0	0	0	0	0	0	0	0	0	41
03:00	0	14	9	0	3	0	0	0	1	0	0	0	0	0	27
04:00	1	34	23	0	2	0	0	1	0	0	0	0	0	0	61
05:00	0	103	67	1	29	1	0	3	0	0	0	0	0	0	204
06:00	2	276	145	4	68	1	0	13	0	1	0	1	0	2	513
07:00	2	304	165	4	59	3	0	20	2	1	1	0	1	4	566
08:00	0	377	170	5	65	2	0	24	0	2	0	0	0	5	650
09:00	1	343	141	4	51	3	0	12	2	2	1	0	0	7	567
10:00	3	360	151	2	58	3	0	10	2	1	0	0	0	3	593
11:00	3	444	168	2	59	1	0	17	1	0	0	0	0	3	698
12 PM	4	418	153	3	51	2	0	12	0	0	0	0	0	5	648
13:00	1	403	169	0	57	1	0	10	0	0	1	0	0	2	644
14:00	3	376	116	5	47	1	0	8	1	0	0	0	0	3	560
15:00	3	276	108	3	31	0	0	3	0	1	0	0	0	4	429
16:00	5	427	167	2	42	1	0	23	0	1	0	0	0	5	673
17:00	1	386	125	1	26	0	0	6	1	1	2	1	0	0	550
18:00	1	400	138	1	51	1	0	11	0	1	0	0	0	3	607
19:00	1	382	140	2	35	1	0	4	0	1	0	0	0	0	566
20:00	2	348	115	1	34	0	0	3	0	0	0	0	0	1	504
21:00	1	253	78	1	22	0	0	3	0	0	0	0	0	0	358
22:00	0	187	75	0	11	1	0	0	0	0	0	0	0	3	277
23:00	0	92	36	0	13	0	0	2	0	0	0	0	0	0	143
Total	35	6279	2502	41	826	22	0	185	10	12	5	2	1	51	9971
Percent	0.4%	63.0%	25.1%	0.4%	8.3%	0.2%	0.0%	1.9%	0.1%	0.1%	0.1%	0.0%	0.0%	0.5%	
AM Peak	10:00	11:00	08:00	08:00	06:00	07:00		08:00	07:00	08:00	07:00	06:00	07:00	09:00	
Vol.	3	444	170	5	68	3		24	2	2	1	1	1	7	
PM Peak	16:00	16:00	13:00	14:00	13:00	12:00		16:00	14:00	15:00	17:00	17:00		12:00	
Vol.	5	427	169	5	57	2		23	1	1	2	1		5	

NOTE: 2 Axle Long volumes may be overstated since tubes were set about 180 feet south of the signal stop bar.

Rio Grande Blvd. North of Aspen Ave. NW

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P. O. Box 92051
Albuquerque, NM 87199-2051
(505) 883-8807

Site Code: North
Station ID:

Latitude: 35' 6.000 North

Northbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
11/12/15	0	31	21	0	2	0	0	2	0	0	0	0	0	0	56
01:00	0	20	16	1	5	0	0	0	0	0	0	0	0	0	42
02:00	0	17	11	0	6	1	0	0	1	0	0	0	0	0	36
03:00	0	18	16	1	5	0	0	0	1	0	0	0	0	0	41
04:00	0	38	12	0	1	0	0	0	0	0	0	0	0	0	51
05:00	0	105	59	0	32	0	0	0	1	0	0	0	0	0	197
06:00	1	291	152	5	59	0	0	10	0	0	0	0	0	2	520
07:00	3	403	169	3	58	1	0	8	2	1	0	0	0	1	649
08:00	3	358	157	9	69	3	0	20	1	1	2	0	0	4	627
09:00	2	289	186	2	90	6	0	10	2	0	0	0	0	11	598
10:00	4	291	173	5	78	4	0	13	3	2	1	0	0	0	574
11:00	1	310	153	2	66	2	0	14	0	0	1	0	1	2	552
12 PM	1	373	176	2	72	2	1	6	0	0	0	0	0	2	635
13:00	6	312	144	3	60	4	0	6	1	0	0	1	0	4	541
14:00	4	275	129	2	46	2	0	10	0	1	0	0	0	1	470
15:00	3	99	55	1	10	1	0	1	0	0	0	0	0	2	172
16:00	1	205	113	4	25	3	0	11	1	1	0	0	0	1	365
17:00	2	216	107	3	25	0	0	5	0	0	0	0	0	3	361
18:00	7	358	198	1	62	2	0	8	1	0	0	0	0	2	639
19:00	1	299	205	3	41	0	0	13	0	2	0	0	0	2	566
20:00	6	267	174	1	42	1	0	5	0	0	0	0	0	2	498
21:00	1	221	131	1	39	1	0	4	0	0	0	0	0	1	399
22:00	0	143	88	0	25	0	0	0	0	0	0	0	0	4	260
23:00	0	86	63	0	12	1	0	0	0	0	0	0	0	0	162
Total	46	5025	2708	49	930	34	1	146	14	8	4	1	1	44	9011
Percent	0.5%	55.8%	30.1%	0.5%	10.3%	0.4%	0.0%	1.6%	0.2%	0.1%	0.0%	0.0%	0.0%	0.5%	
AM Peak	10:00	07:00	09:00	08:00	09:00	09:00		08:00	10:00	10:00	08:00		11:00	09:00	
Vol.	4	403	186	9	90	6		20	3	2	2		1	11	
PM Peak	18:00	12:00	19:00	16:00	12:00	13:00	12:00	19:00	13:00	19:00		13:00		13:00	
Vol.	7	373	205	4	72	4	1	13	1	2		1		4	
Grand Total	207	24650	10739	185	3647	110	7	691	53	37	21	14	8	175	40544
Percent	0.5%	60.8%	26.5%	0.5%	9.0%	0.3%	0.0%	1.7%	0.1%	0.1%	0.1%	0.0%	0.0%	0.4%	

NOTE: 2 Axle Long volumes may be overstated since tubes were set about 180 feet south of the signal stop bar.

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Rio Grande Blvd. North of New York Ave. NW

Station ID:
Latitude: 35' 6.000 North
Longitude: 106' 40.000 West
South_Location_Vol

Monday Tuesday Wednesday Thursday Friday

Start	02-Nov-15		03-Nov-15		04-Nov-15		05-Nov-15		06-Nov-15		Weekday Average		07-Nov-15		08-Nov-15	
Time	Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
12:00 AM	*	*	5	2	4	0	5	6	3	4	4	3	4	8	1	6
01:00	*	*	0	2	1	0	0	3	0	1	0	2	1	3	3	4
02:00	*	*	2	5	3	0	0	2	0	2	1	2	2	7	0	3
03:00	*	*	1	1	1	0	1	0	1	0	1	0	2	1	0	1
04:00	*	*	5	1	6	0	2	0	2	1	4	0	1	1	3	1
05:00	*	*	6	6	8	0	7	5	9	7	8	4	1	0	5	4
06:00	*	*	23	16	37	0	32	12	36	18	32	12	17	14	8	2
07:00	*	*	77	60	81	49	79	60	79	59	79	57	35	34	19	22
08:00	*	*	89	**114**	83	**128**	75	**91**	86	**96**	83	**107**	60	50	35	25
09:00	*	*	94	92	**104**	72	77	54	86	70	90	72	82	70	52	37
10:00	*	*	**125**	80	98	68	85	52	**109**	74	**104**	68	71	77	74	55
11:00	*	*	85	70	89	69	**92**	73	99	90	91	76	**87**	**87**	**78**	**68**
12:00 PM	*	*	93	78	124	63	112	58	116	90	111	72	**119**	86	71	71
01:00	*	*	104	**81**	80	58	83	**81**	116	90	96	**78**	114	88	74	58
02:00	*	*	113	81	76	52	77	59	120	78	96	68	90	**105**	**76**	**72**
03:00	*	*	89	68	110	82	127	72	121	64	112	72	78	57	42	62
04:00	103	**67**	132	75	106	**95**	124	70	139	76	121	77	69	77	*	*
05:00	**112**	67	**150**	57	**130**	68	**136**	52	**154**	**94**	**136**	68	88	64	*	*
06:00	39	41	70	43	51	62	68	52	72	51	60	50	42	63	*	*
07:00	32	41	28	0	35	40	34	54	39	41	34	35	37	27	*	*
08:00	34	21	19	0	26	20	28	39	25	34	26	23	41	34	*	*
09:00	6	16	11	0	25	23	14	18	23	35	16	18	33	30	*	*
10:00	6	5	10	0	16	13	13	12	21	18	13	10	8	15	*	*
11:00	8	11	3	0	2	6	4	12	9	12	5	8	4	7	*	*
Total	340	269	1334	932	1296	968	1275	937	1465	1105	1323	982	1086	1005	541	491
Day	609		2266		2264		2212		2570		2305		2091		1032	
AM Peak			10:00	08:00	09:00	08:00	11:00	08:00	10:00	08:00	10:00	08:00	11:00	11:00	11:00	11:00
Vol.			125	114	104	128	92	91	109	96	104	107	87	87	78	68
PM Peak	17:00	16:00	17:00	13:00	17:00	16:00	17:00	13:00	17:00	17:00	17:00	13:00	12:00	14:00	14:00	14:00
Vol.	112	67	150	81	130	95	136	81	154	94	136	78	119	105	76	72

Comb. Total	609	2266	2264	2212	2570	2305	2091	1032

ADT ADT 2,176 AADT 2,176

Spot Speed Study - Field Data Tally Sheet

Date: 12/22/2015 Location: Rio Grande N. of Bellamah Direction: NB

Time: 3:15 PM Weather: Cloudy, Cool Road Surface Cond: Good

Data Collector:

Speed (MPH)	Number of Vehicles
25	0
26	0
27	0
28	2
29	3
30	6
31	9
32	7
33	9
34	15
35	13
36	8
37	7
38	11
39	4
40	7
41	3
42	3
43	2
44	0
45	1
46	0
47	0
48	0
49	0
50	0

Spot Speed Study - Field Data Tally Sheet

Date: 12/22/2015 Location: Rio Grande N. of Bellamah Direction: SB

Time: 2:45 PM Weather: Cloudy, Cool Road Surface Cond: Good

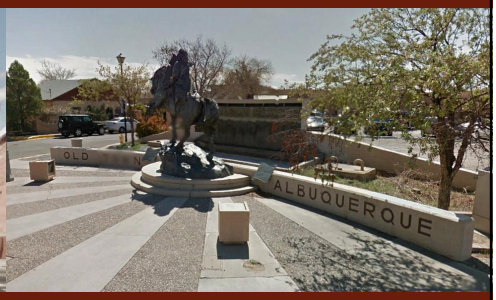
Data Collector:

Speed (MPH)	Number of Vehicles
25	0
26	0
27	0
28	2
29	3
30	13
31	8
32	7
33	14
34	10
35	9
36	9
37	3
38	5
39	6
40	5
41	1
42	1
43	6
44	0
45	2
46	0
47	0
48	0
49	0
50	0

APPENDIX C: CHARETTE PRESENTATION

Rio Grande Boulevard
Complete Street Concept Plan

Luke Schwartz
Kimley-Horn and Associates, Inc.



Stakeholder Workshop
September 2, 2015

Kimley»Horn

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city of albuquerque
Rio Grande Boulevard
Complete Street
Concept Plan

Agenda

- Introduction and Overview of Plan Purpose
- Existing Issues and Areas of Focus
- Examples of Potential Improvement Elements
- Next Steps
- Questions
- Open House

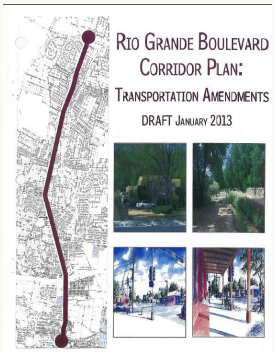
Kimley»Horn

city of albuquerque
Rio Grande Boulevard Complete Street
Concept Plan

Planning Context

1986

2010

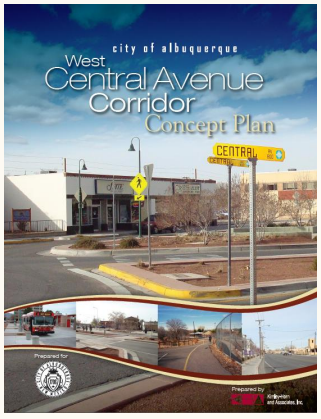


2013

Kimley»Horn

city of albuquerque
Rio Grande Boulevard Complete Street
Concept Plan

Planning Context



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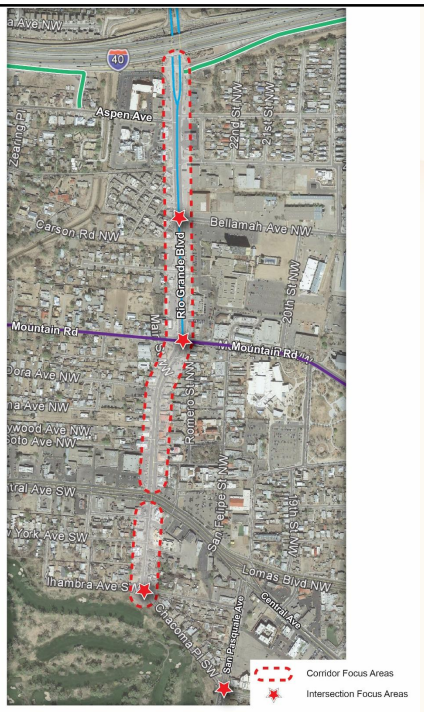
city of albuquerque
Rio Grande Boulevard Complete Street
Concept Plan

Overview

- Implementable transportation improvements
- Build off previous plans and explore new solutions
- Two Focus Areas
  - Rio Grande Blvd – Central Ave to I-40
  - Rio Grande Blvd – South of Central Ave
- Focus on:
  - Safety & Traffic Calming
  - Walkability
  - Bicycle Circulation & Connectivity
  - Placemaking

Kimley»Horn

city of albuquerque
Rio Grande Boulevard Complete Street
Concept Plan



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What are Complete Streets?

A complete street is designed to enable safe travel for all users.

"Complete" means different things in different places…

…a complete street in one community or neighborhood may not be in another

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An incomplete street…

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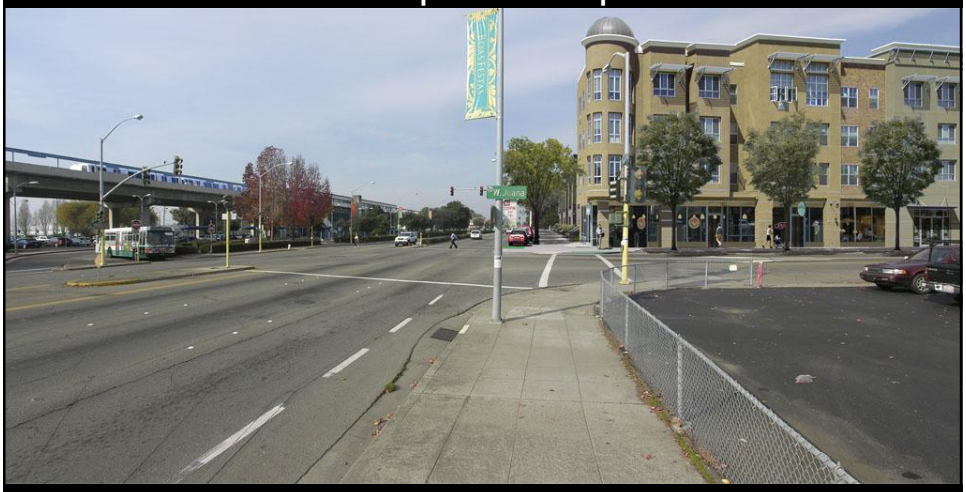
...some private investment, maybe with a little public help…



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...some public investment in streetscape…

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...finally, some neighborhood ownership and pride.

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Why Complete Streets

- All Users / All Modes of Travel
  - Approach to designing streets inclusive of the needs of everyone
- Active Living
  - Promote active living and community health by encouraging walking and cycling
- Supports Development
  - Creates street interest and improved access to commercial areas
- Cost effective
  - Street right-of-way as civic realm maximizes public funds
- Placemaking
  - Streets can create vibrant public spaces that encourage community activity and happiness

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Existing Corridor

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Existing Corridor

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Existing Corridor

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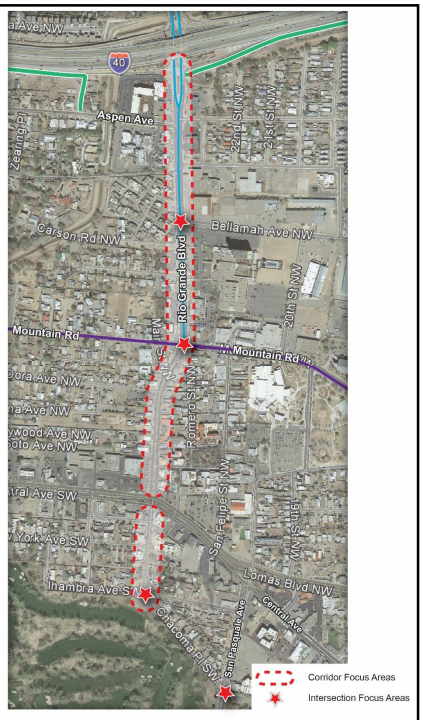
Areas of Focus

- North End: Rio Grande Boulevard from Central Ave to I-40
- South End: Rio Grande Boulevard South of Central Avenue



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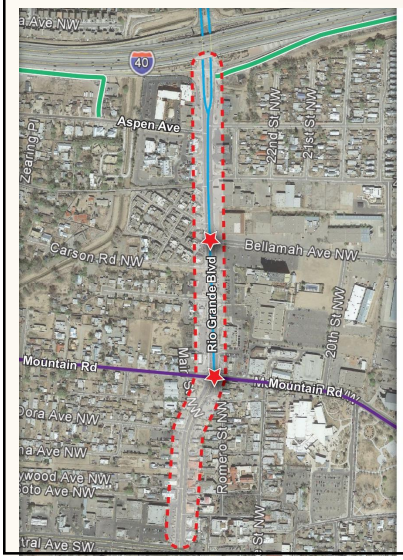
Central Avenue to I-40 Focus



- Walkability
- Pedestrian safety, comfort and crossing barriers
- Bicycle Facilities and Connectivity to Bicycle System
- Rio Grande Blvd/Mountain Rd Intersection

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Central Avenue to I-40 Focus

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Central Avenue to I-40 Focus

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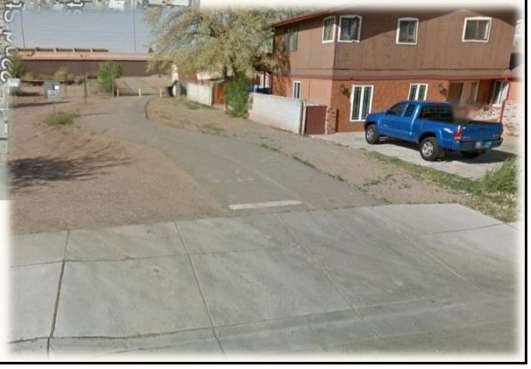
Central Avenue to I-40 Focus



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South of Central Ave Focus

- Opportunities for Streetscape and Pedestrian Enhancements
- Rio Grande/Alhambra Intersection
- San Pasquale/Chacoma Intersection

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South of Central Ave Focus

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South of Central Ave Focus

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Example Improvements for Consideration

Enhanced Bicycle Facilities

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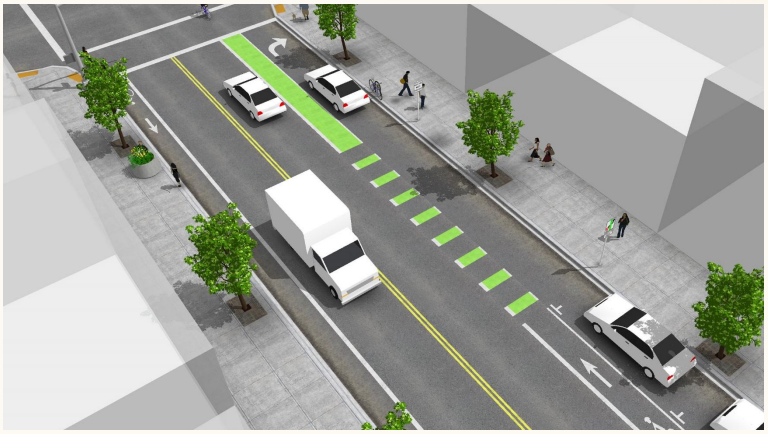
Example Improvements for Consideration



Enhanced Bicycle Facilities

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Example Improvements for Consideration

Improved Bicycle Crossings

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Example Improvements for Consideration

Enhanced Intersection Treatments for Bikes

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Example Improvements for Consideration

Wider Sidewalks with Landscaped Buffer

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Example Improvements for Consideration

High-Visibility Crosswalk Treatments

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Example Improvements for Consideration

Curb Extensions

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Example Improvements for Consideration

Pedestrian Refuges

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Example Improvements for Consideration

Enhanced Pedestrian Crossings

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Example Improvements for Consideration

Enhanced Pedestrian Crossings

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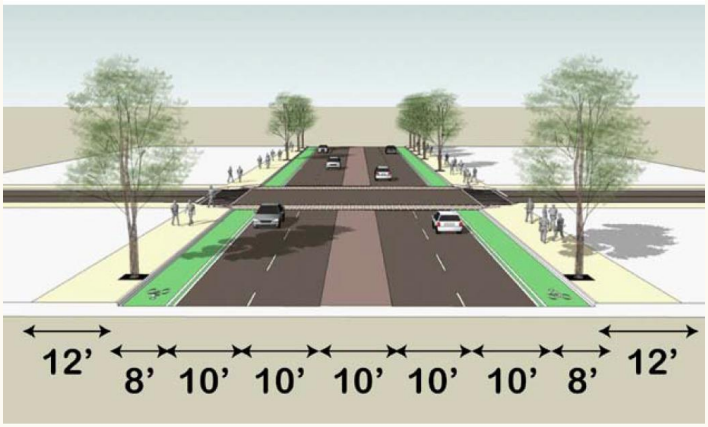
Example Improvements for Consideration



Reduced Lane Widths

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Example Improvements for Consideration

Traffic Calming Measures

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Example Improvements for Consideration

Median Treatments

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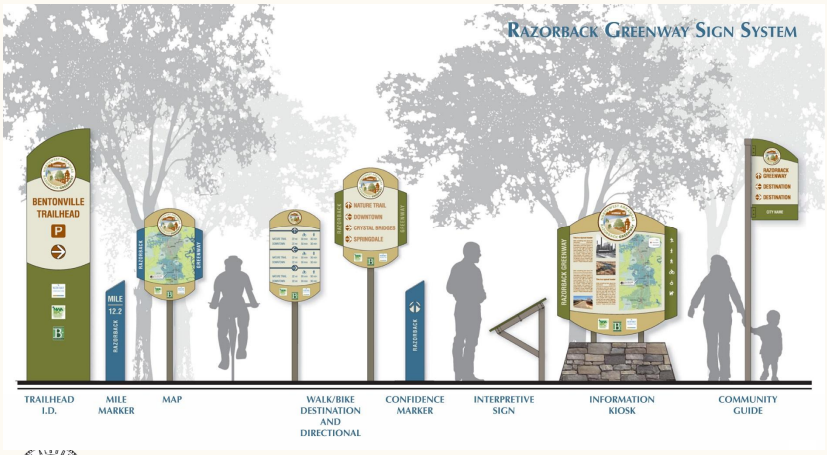
Example Improvements for Consideration



Enhanced Directional Signage/Wayfinding

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Next Steps

1. Identify issues and priorities from community & stakeholder outreach
2. Study existing corridor geometrics, traffic conditions and multimodal activity
3. Develop initial improvement recommendations
4. Refine improvement recommendations with input from City and stakeholders
5. Final Plan

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Questions for You:

How do you use the corridor?
What are the priorities for the corridor?
What are the current issues/challenges with the corridor?
What types of improvements would you like to see?

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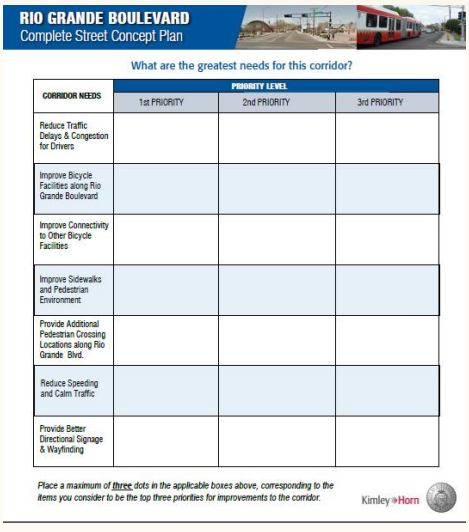
Open House


RIO GRANDE BOULEVARD
Complete Street Concept Plan

What are the greatest needs for this corridor?

CORRIDOR NEEDS	PRIORITY LEVEL		
	1st PRIORITY	2nd PRIORITY	3rd PRIORITY
Reduce Traffic Delays & Congestion for Drivers			
Improve Bicycle Facilities along Rio Grande Boulevard			
Improve Connectivity to Other Bicycle Facilities			
Improve Sidewalks and Pedestrian Environment			
Provide Additional Pedestrian Crossing Locations along Rio Grande Blvd.			
Reduce Speeding and Calm Traffic			
Provide Better Directional Signage & Wayfinding			

Place a maximum of three dots in the applicable boxes above, corresponding to the items you consider to be the top three priorities for improvements to the corridor.

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APPENDIX D: PUBLIC MEETING PRESENTATION

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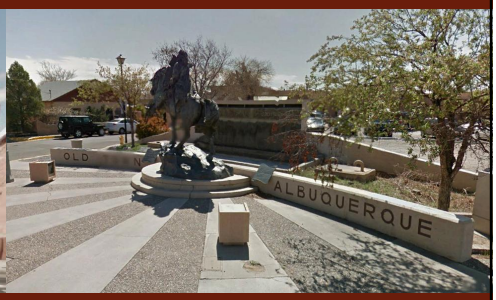
Complete Street Concept Plan

Adam Dankberg
Kimley-Horn and Associates, Inc.



Community Meeting
March 10, 2016

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Meeting Agenda

- Presentation
  - Goals and Objectives
  - Background
  - Concepts
- Open House

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Project Goals & Objectives

- Improve Safety and Implement Traffic Calming
- Improve Corridor Walkability
- Address Bicycle Circulation & Connectivity
- Identify Locations for City Placemaking
- Implementable Solutions

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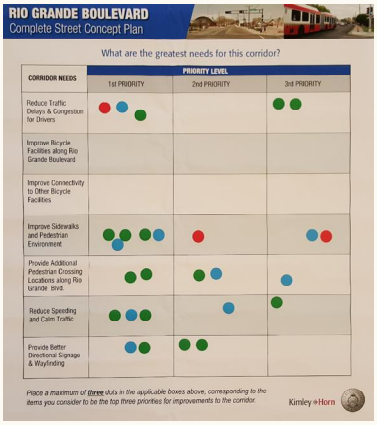
Summary of Meeting with Abutting Property Owners
September 9, 2015

- Improve corridor walkability & pedestrian safety
- Reduce speeds and calm traffic
- Improve aesthetics and signage on corridor



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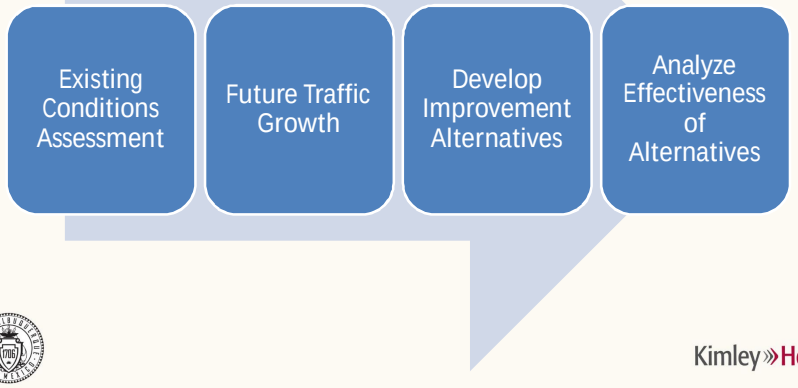
Traffic Analysis Methodology



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Traffic Volumes

- Volumes on Rio Grande in PM Peak Hour:
  - 2,700 vehicles just south of I-40
  - 2,150 vehicles just south of Mountain
  - 2,000 vehicles just north of Central
  - 300 vehicles just south of Central
- Over 25,000 vehicles per weekday

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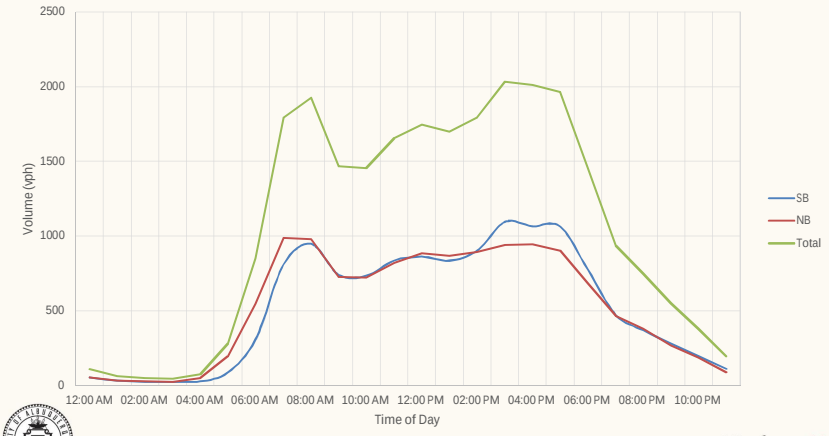
Traffic Volumes



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Future Volumes

- Used 2040 MRCOG Model to forecast 2040 volumes on Rio Grande Blvd
- Projected an increase in traffic of 0.5% to 1.0 percent on average per year
- An additional approximately 600 vehicles in the PM peak hour

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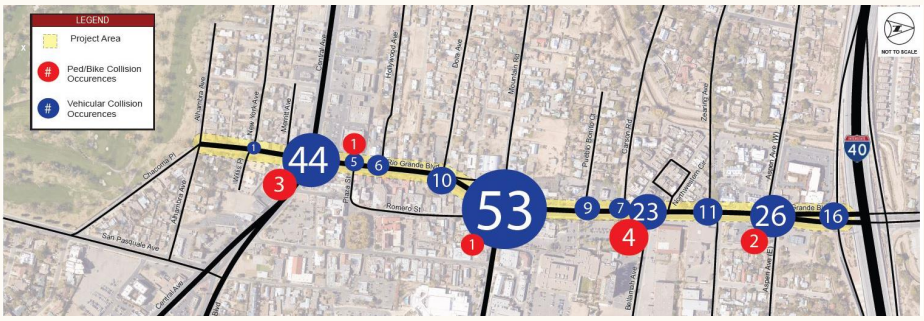
Collision History (2009 to 2013)



- Higher collision frequency at Central Ave, Mountain Rd, Bellamah Ave, and Aspen Ave

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Collision Summary

- 222 total collisions on corridor in 5-year period
  - 11 involved pedestrians or bikes
  - 72 involved injuries (6 bicyclists, 3 pedestrians)
  - No fatalities
  - Incapacitating injuries at Mountain (3), Aspen (2), Central (2), Zearing (1), South Plaza (1)
- Collision rate exceeds Countywide and Statewide average per vehicle miles traveled

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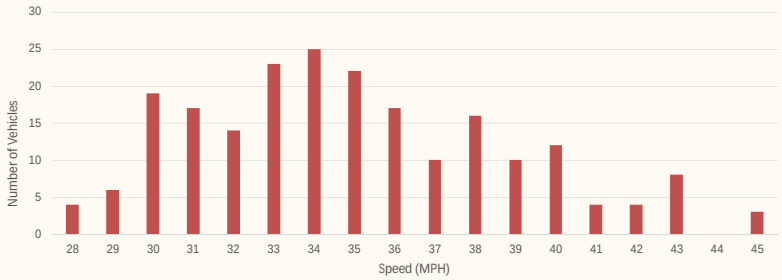
Spot Speed Survey (North of Bellamah)



- 85th percentile speed is 39 MPH
- Speed Limit is 35 MPH in this section

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Bicycle Network

City Bike Map

Bicycle Activity Patterns

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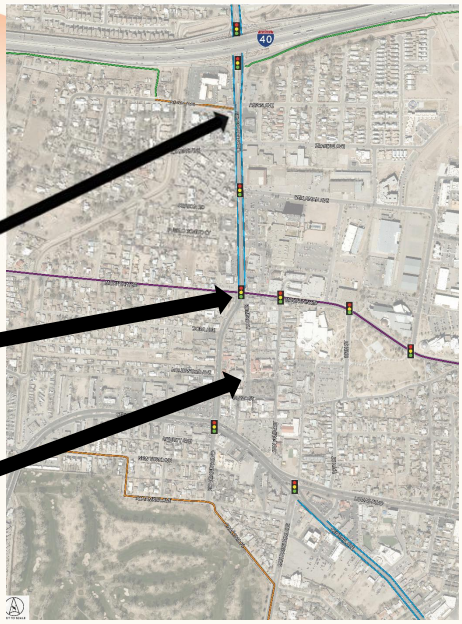
Existing Bike Circulation

- Gap in I-40 bike path
- Extensive bike activity near Mountain Rd ("Bike Boulevard")
- No connection into Old Town



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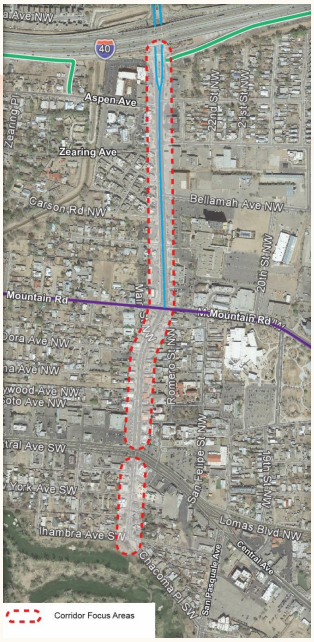
Corridor Focus Area

- North Area
  - I-40 Ramps to Central Avenue
- South Area
  - Central Avenue to Chacoma Place-San Pasquale Avenue



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North Area

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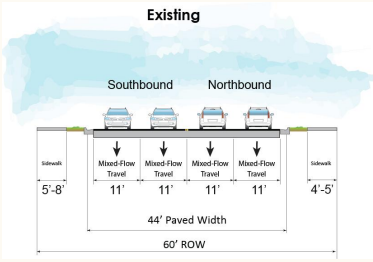
Road Diet Assessment

- High existing and future vehicular volumes make road diet infeasible



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Existing Aspen Avenue

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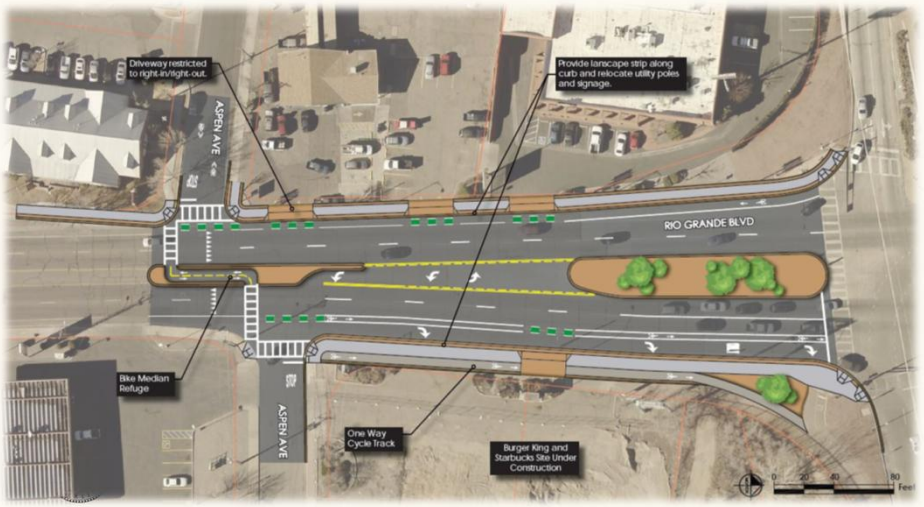
Rio Grande Blvd at Aspen Ave – Alternative 1



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Median Refuge Examples

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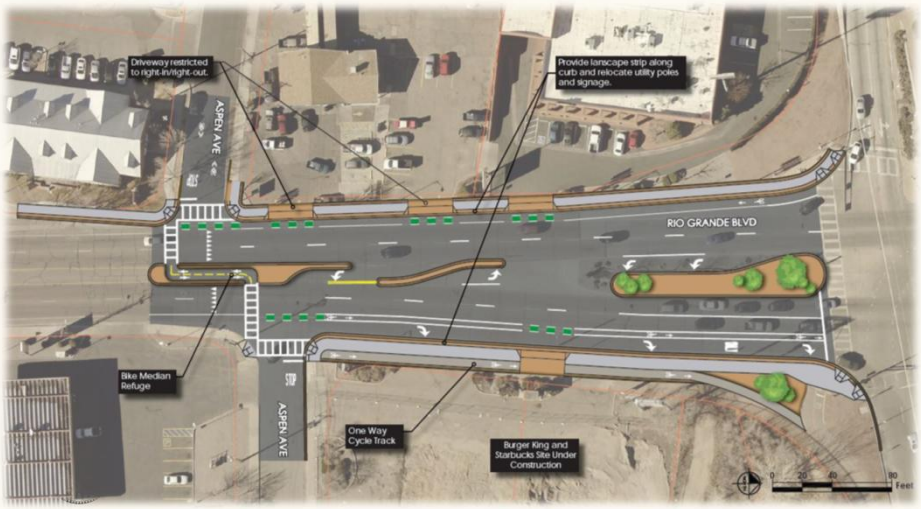
Rio Grande Blvd at Aspen Ave – Alternative 2



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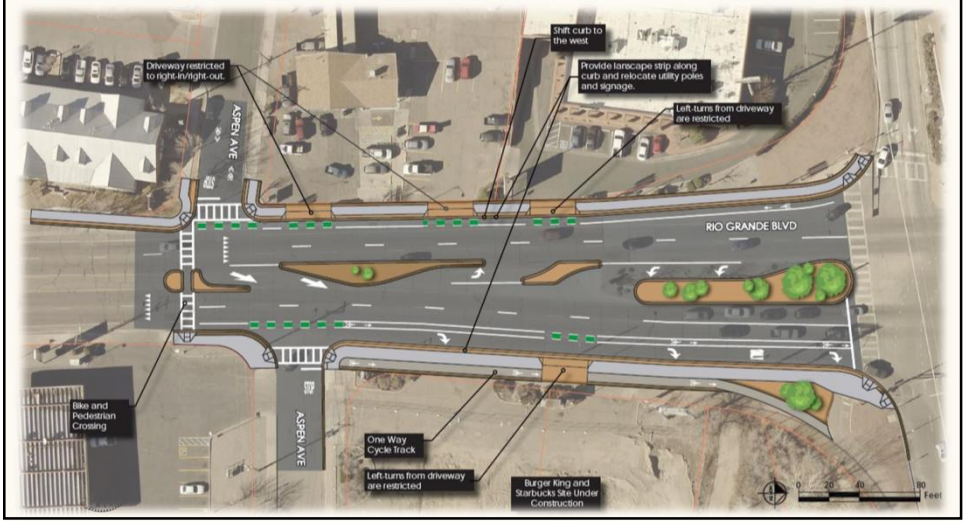
Rio Grande Blvd at Aspen Ave – Alternative 3



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Rio Grande Blvd - Aspen Ave to Mountain Rd Proposed Cross Section

- Will require easements and/or right-of-way acquisition

Note: Bike lanes will have dashed green paint at conflict zones

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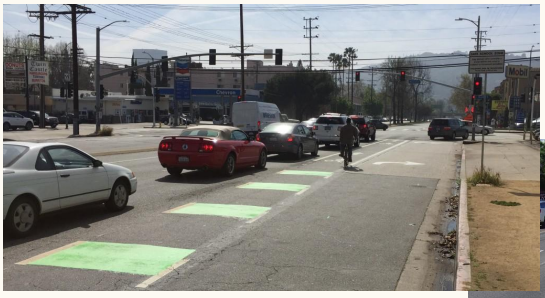
Dashed Green Bike Lanes



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Wider Sidewalks and Landscape Strip

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Existing Bellamah Ave

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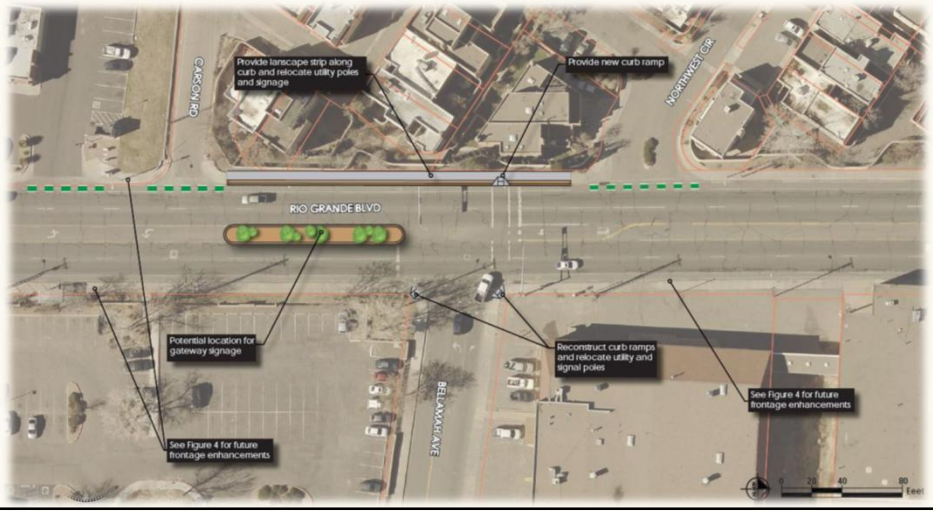
Rio Grande Blvd at Bellamah Ave



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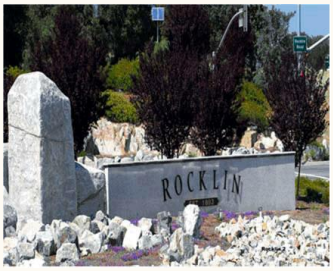
Gateway Signage Examples



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Existing Mountain Road

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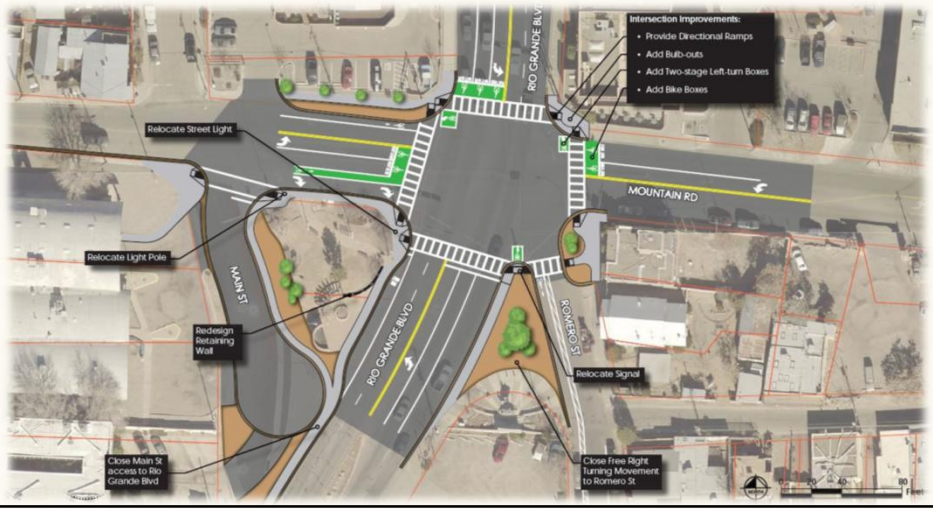
Rio Grande Blvd at Mountain Rd
Alternative 1 - Signalized Intersection



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Bicycle Treatment Examples

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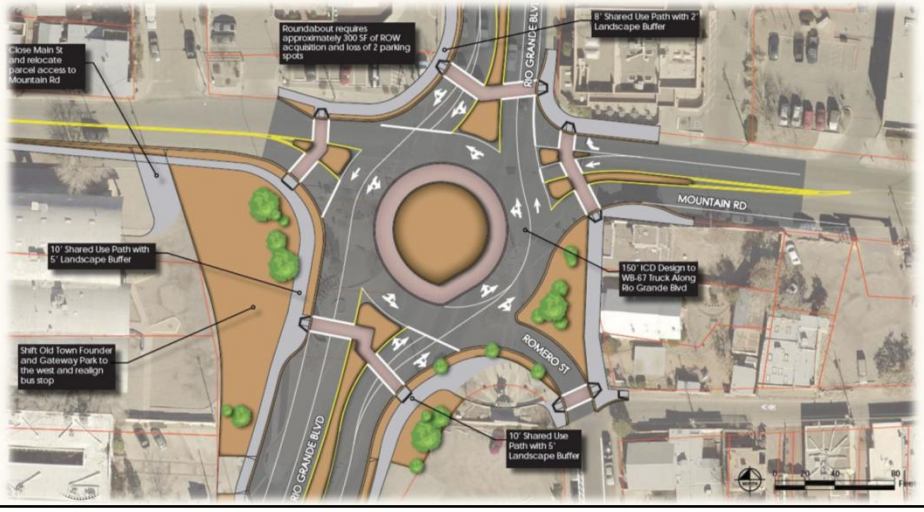
Rio Grande Blvd at Mountain Rd
Alternative 2 – Roundabout Intersection



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Existing Hollywood Ave

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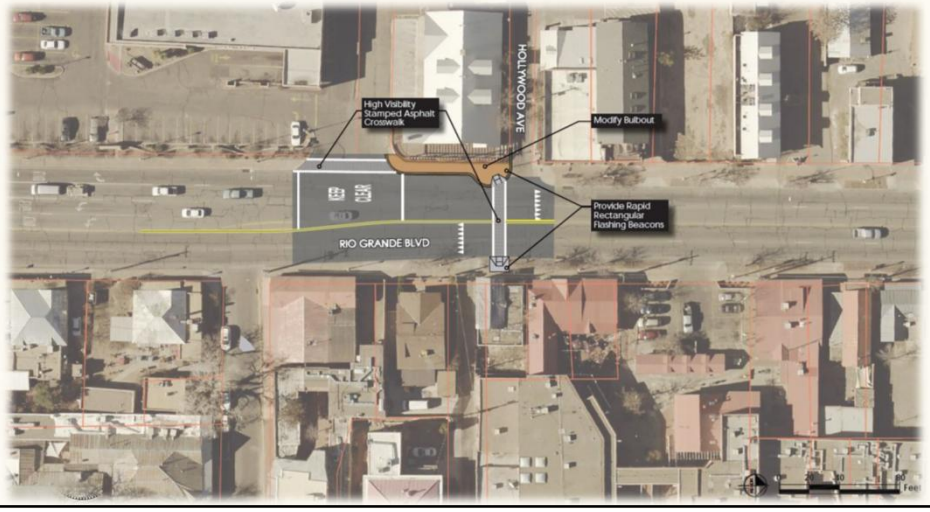
Rio Grande Blvd at Hollywood Ave



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Crosswalk Examples

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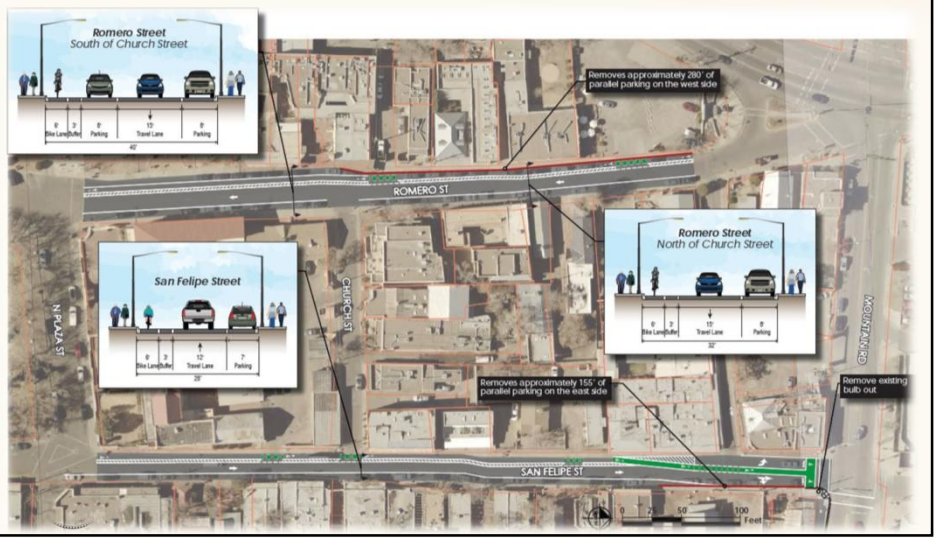
Old Town Plaza Bike Couplet



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South Area

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Related Project: Central Avenue / San Pasquale Avenue

- Simplify traffic movements
- Northbound left-turns prohibited at San Pasquale Avenue
- Improved pedestrian crossing treatments

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Existing Rio Grande Blvd/Chacoma Pl/Alhambra Ave Intersection

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Rio Grande Blvd at Alhambra Ave – Alternative 1

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Rio Grande Blvd at Alhambra Ave – Alternative 2

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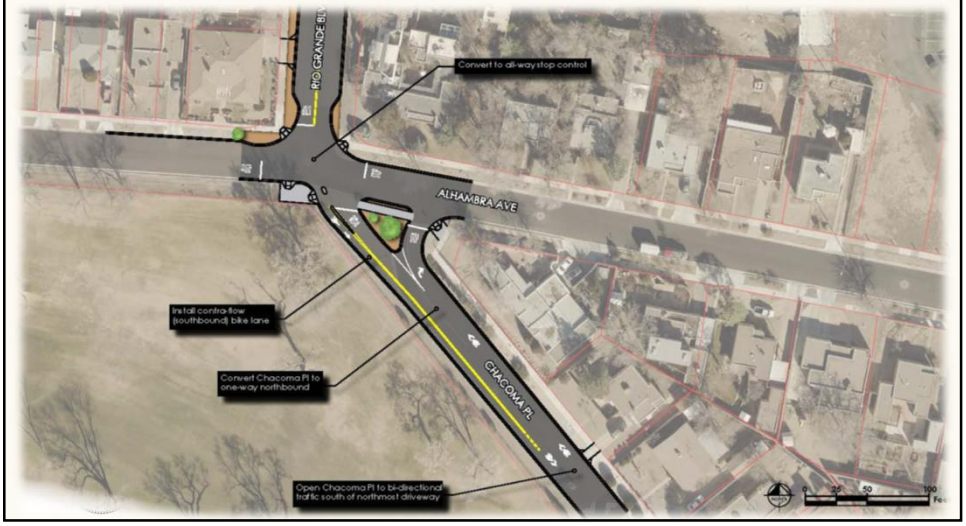
Rio Grande Blvd at Alhambra Ave – Alternative 3



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Variety of Existing Wayfinding/Signage

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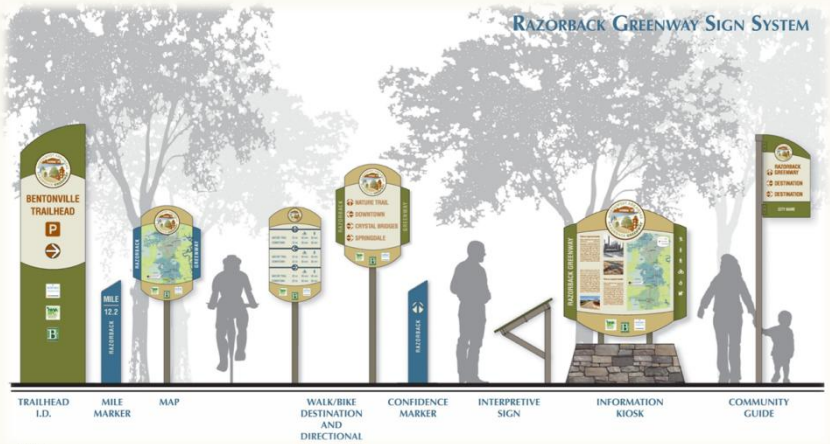
Develop Signage/Wayfinding Theme



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Improved Pedestrian Lighting




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Open House

- Review improvement alternatives
- Provide feedback on alternatives and indicate preferences
- Provide any additional feedback

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Contact Information

For questions or to send in additional comments, please contact:

Andrew Webb
Policy Analyst/Planning
awebb@cabq.gov

Shanna Schultz
Policy Analyst/Planning
smschultz@cabq.gov

Diane Dolan
District 2 Policy Analyst
ddolan@cabq.gov

Kimley»Horn