HT # J06D001

UPPER PETROGLYPHS PHASES 1 – 7

TRAFFIC IMPACT ANALYSIS

Initial Submittal

~~APRIL 24, 2018~~

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FEBRUARY 19, 2020

INITIAL SUBMITTAL

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UPPER PETROGLYPHS
TRAFFIC IMPACT ANALYSIS

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I. INTRODUCTION AND SUMMARY

The Upper Petroglyphs Sector Plan Area is a 3,371-acre development, which under full development will contain approximately 6,910 residential units on 1,412.70 acres. In full build-out, the development will also have approximately 115 acres of commercial development, 982 acres of office and business uses, 380 acres of open space, as well as recreational facilities, parks, stormwater detention facilities, and rights of way. A vicinity map is shown in Figure 1 and a conceptual site plan of the overall Sector Plan area is shown in Figure 2.

The Sector Plan area is anticipated to take decades to develop, which will provide opportunities for a phased approach and additional studies to plan and construct needed roadway infrastructure.

This traffic study evaluates the first seven phases, which is anticipated to develop in the next 10-15 years. Phases 1-7 consists of approximately 1,063 acres of residential development and will contain approximately 868 DU's of active adult residential, 2,891 DU's of multi-generational single-family homes, and 482 DU's of multi-family apartments. The site plan for Phases 1-7 is shown in Figure 5, on page 16.

The study will also add a small amount of employment uses to the Cordero Mesa employment area, consistent with job growth in the area since 2005 of approximately 33 jobs a year. For study purposes, these jobs will be assumed to be industrial park jobs.

Large economic development projects that may locate in the area will be evaluated under a separate TIA, when those projects move forward.

This Phase 1-7 traffic study will be broken in three (3) phases:

1) A 2022 Phase 1 analysis that will identify impacts and improvements needed to accommodate the first phase of development. This phase is expected to begin construction of backbone infrastructure in 2020, with home construction to begin in late 2020/early 2021. Phase 1 consists of 153 DU's of active adult residential and 301 DU's of multi-generational single-family homes, and 67 industrial park jobs. The site plan for Phase 1 is shown in Figure 3 on page 14.
2) A 2025 Phase 1-3 analysis: 404 active adults DU's, 1,159 multi-generational single-family homes, and 167 industrial park jobs. The site plan for Phase 1-3 is shown in Figure 4 on page 15.

3) A 2030 Phase 1-7 analysis: 868 active adults DU's, 2,891 multi-generational single-family homes, and 333 industrial park jobs. The site plan for Phase 1-7 is shown in Figure 5 on page 16.

A. STUDY PURPOSE

The purpose of the traffic study is to determine the impacts of the proposed development on the surrounding roadway network, evaluate the operation of proposed site entrances, and to recommend any mitigation measures that may be necessary to support the additional traffic generated by the proposed development.

B. EXECUTIVE SUMMARY

1. SITE LOCATION AND STUDY AREA

The "*existing*" intersections referenced in this study are intersections that exist today in 2019. These consist of the following intersections:

Unser Boulevard:	Tierra Pintada, Ladera, I-40 WB Ramp, I-40 EB Ramp
Arroyo Vista Boulevard:	Inspiration West, Inspiration East, Tierra Pintada, Ladera, I-40 WB Ramp, I-40 EB Ramp
Atrisco Vista Boulevard:	Comfort Way (aka Comfort Way), North Frontage Road, I-40 WB Ramp, I-40 EB Ramp, Central Avenue

The "*future major*" intersections are intersections that will be constructed as part of the development and access an existing City or County road: These intersections are:

Arroyo Vista Boulevard:	Future intersections with Atrisco Vista, Estancia Parkway (serves the multi-generational single-family housing) and Del Webb Parkway (serves the active-adult housing)
Atrisco Vista Boulevard:	Future intersections with Arroyo Vista, 118th Street", and Ladera
Ladera	Future intersection with Estancia Parkway

The "*future development*" intersections are those intersections that access either Estancia Parkway (15 intersections), Del Webb Parkway (10 intersections), or Ladera (4 intersections) and serve as direct entrances to the residential development.

In addition to the intersection analysis discussed above, it was requested to do an analysis of Interstate 40 from west of Atrisco Vista to east of Unser. This freeway analysis will be presented as a separate section of the report (Section VI, Freeway Analysis – 2019,

2022, 2025, and 2030, starting on page 150) which will discuss all development phases (2019, 2022, 2025, and 2030) and the impacts to interstate operations for both no build and build conditions.

The intersection evaluations include analysis for the AM and PM peak hours for the following traffic conditions:

- Existing traffic (2019)
- 2022, 2025, 2030 No Build (traffic without proposed development or future road network)
- 2022, 2025, 2030 Build (traffic with proposed development and future road network)

The intersections and freeway segments to be studied in this report are shown in Figure 6 on page 17.

2. PRINCIPAL FINDINGS

a) *Alternative Intersection Design Considerations*

It is understood that signalized intersections should not be the default solution for intersections that have more volume than can be accommodated with two-way or all-way stop control. However, the intersection of Central and Atrisco Vista has characteristics that make other alternatives, such as a roundabout, median U-turn (MUT), restricted crossing U-turn (RCUT), and displaced left-turn (DLT) undesirable. This is due to the relatively large number of large vehicles (City of Albuquerque garbage trucks destined to the Cerro Colorado landfill) and semi-trucks (destined to the Love's truck stop and repair facilities in the area) that are present (13% – 28% in the AM, Noon and PM peak hours).

These large vehicles, and the frequency they are present, would present challenges and possible safety concerns in the U-turn alternative intersection designs. The close proximity of the I-40 Eastbound ramp and Love's Truck Stop, as well as right-of-way constraints, also limits the viability of the displaced left turn alternative design.

A roundabout at Atrisco and Central is not recommended due the heavy truck traffic and the impact that would have truck tracking through the roundabout. Although that may be able to be overcome in design, it would severely limit the likelihood of progression from Central through the interchange.

The above concerns also pose the same challenge at the Atrisco Vista and North Frontage Road intersection north of the interchange, as that intersection is also in close proximity to the I-40 Westbound Ramp. However, that intersection (the North Frontage

Road) does not have the City of Albuquerque garbage trucks and has a lower truck volume, 6% – 20% in the AM, Noon, and PM peak hours.

The other intersections along Atrisco Vista could be considered for alternative intersection designs as development proceeds, although again, the lands to the west of Atrisco Vista is zoned for industrial, manufacturing, and warehouse uses that will need to be considered in any design.

b) *Existing Conditions*

Under existing 2019 conditions most intersections operate at acceptable levels of service with the exception of several existing intersections. At the signalized intersection of Unser and Tierra Pintada, the intersection operates at LOS E in the AM and LOC C in the PM peak hour with movements of LOS F in both peak hours and has six (6) 15-minute periods where the v/c value is above 1.0, meaning the intersection is over capacity. The intersection of Unser and eastbound ramp operates at LOS F in both AM and PM peak hours although this intersection meets signal warrants and operates at acceptable levels of service once signalized.

c) *2022 Build*

Under 2022 Build conditions most intersections continue to operate at acceptable levels of service although an existing intersection continues to operate poorly. At the signalized intersection of Unser and Tierra Pintada, the intersection operates at LOS F in the AM and LOS D in the PM peak hour although a signal timing optimization changes the level of service to LOS C in both AM and PM peak hours.

The unsignalized intersection of Atrisco Vista and westbound ramp operates at LOS A in the AM and LOS B in the PM peak hour with movements of LOS F in both peak hours. This intersection warrants a traffic signal in the 2022 Build conditions which improves the level of service to LOS B in both AM and PM peak hours.

The eastbound left turn at the unsignalized intersection of 98th Street and I-40 Eastbound ramp will operate at LOS F with either a one-stage or two-stage left turn in the PM peak hour. This intersection does not have sufficient volume to warrant a traffic signal in the peak hour

All unsignalized intersection, including roundabouts, in the development site on Estancia and Del Webb which are built during the 2022 Build year also operate at acceptable levels of service with LOS A in both AM and PM peak hours.

d) *2025 Build*

Under 2025 Build conditions most intersections continue to operate at acceptable levels of service although several intersections warrant traffic signals which improve those intersections levels of service. Signals are warranted at the intersection of Atrisco Vista and eastbound I-40, Atrisco Vista and Central and Arroyo Vista and eastbound I-40. At the signalized intersection of Unser and Tierra Pintada, the intersection operates at LOS F in the AM and LOS D in the PM peak hour although a signal timing optimization improves the level of service to LOS C in both AM and PM peak hours. The signalized intersection of Unser and Ladera has LOS D in both the AM and PM peak hours. A signal optimization was done but it did not improve this intersection.

All unsignalized intersection, including roundabouts, in the development site on Estancia and Del Webb which are built before or during the 2025 Build year also operate at acceptable overall levels of service with LOS A in both AM and PM peak hours.

e) *2030 Build*

Under 2030 Build conditions most intersections continue to operate at acceptable levels of service although several intersections warrant traffic signals which improve those intersections level of service. Signals are warranted along Atrisco Vista at Frontage, Comfort Way, and Ladera. All these warrants are the peak hour warrant which is appropriate under the conditions of the Manual on Uniform Traffic Control Devices due to large influx of traffic during the peak hours due to employments use. At the signalized intersection of Unser and Tierra Pintada, the intersection operates at LOS F in the AM and PM peak hour although a signal timing optimization improves the level of service to LOS C in both AM and PM peak hours. The signalized intersection of Unser and Ladera has LOS D in the AM and LOS F in the PM peak hour and has seven (7) 15-minute periods where the v/c value is above 1, meaning the intersection will be over capacity at full buildout of the development.

All unsignalized intersection, including roundabouts, in the development site on Estancia and Del Webb which are built before or during the 2030 Build year also operate at acceptable overall levels of service with LOS A in both AM and PM peak hours. The intersection of Estancia and Arroyo Vista does have the northbound left movement that is LOS E with delay of 37.3 seconds, but this intersection does not meet signal warrants.

Although many intersections operate at overall acceptable levels of service, some intersections will need approach lane modifications to achieve acceptable operations.

The intersection of Atrisco Vista and I-40 eastbound will require a second southbound left turn lane to achieve acceptable delay. This left turn lane exists on the overpass and only needs to be re-striped to allow the second southbound left. The intersection is expected to operate at overall acceptable levels of service with the second left turn lane.

The intersection of Atrisco Vista and I-40 westbound will require a third westbound right turn lane to be constructed. Westbound right will experience queueing of 650 feet in the PM and will likely require widening of the ramp to accommodate this queue. It is likely the proposed 118th Street interchange will reduce the right turn volume at this intersection, and hopefully lead to the third right turn lane not being required. Evaluation of this scenario is beyond the scope of the Upper Petroglyphs study.

The intersection of Atrisco Vista and Frontage will require a third northbound lane to be constructed to accommodate the third westbound right at the westbound ramp, if the 118th Street interchange is not constructed. A traffic signal will be warranted, primarily due to the large traffic volume of the Upper Petroglyphs development.

The intersection of Atrisco Vista and Comfort Way will require a second north and southbound lane to be constructed. The analysis includes the proposed lane configuration with a westbound leg consisting of a westbound left turn lane and a thru/right turn lane.

The intersection of Atrisco Vista and Ladera will require a second north and southbound lane to be constructed. The analysis includes the proposed lane configuration with a westbound leg consisting of two westbound left turn lanes and a thru/right turn lane.

f) *Freeway*

The existing PM peak hour conditions for westbound I-40 operates at LOS F, and even without additional development of Upper Petroglyphs eastbound I-40l have LOS F in the near future (2025 No Build as analyzed in this report).

3. RECOMMENDATIONS

a) *General*

- As traffic studies typically have no more than a four-year life due to changing conditions, it is recommended that detailed traffic studies be completed to evaluate this development as it proceeds, at approximately at 4-year intervals. A large phased analysis such as this can generally be replaced by the 4-year cycle of the MRCOG MTP analysis to identify large infrastructure needs, or as needed as significant changes occur, such as phasing of developments (much faster development than

anticipated). It is also recommended that future studies be limited to the Arroyo Vista and Atrisco Vista corridors, due to the limited traffic assigned to Unser Boulevard. These future studies should be used to develop the required mitigation at the time of the study.

- It is recommended the NMDOT initiate a West I-40 Corridor Study to perform a full and complete Locations Studies Procedures Study to evaluate options for improving freeway operations and to maintain acceptable levels of service. This study should include consideration of the 118th Street interchange as one of the alternatives to relieve congestion at the Atrisco Vista interchange and to reduce the improvements needed along Atrisco Vista. Recent studies also have found poor operation at 98th Street and Central, primarily due to north/south traffic that would likely benefit from additional access to I-40 to serve the land south and north of I-40 between 98th Street and Atrisco Vista.
- All recommended designs shall satisfy Bernalillo County Public Works, NMDOT, COA, and Manual on Uniform Traffic Control Devices (MUTCD) requirements.

b) *Existing Recommendations*

- A signal should be constructed at the intersection of Unser and I-40 eastbound off-ramp. This signal is warranted in existing conditions without the development generating traffic. This intersection should be evaluated for a possible “High-Tee” configuration to limit impacts to the northbound through traffic progression.

c) *2022 Recommendations*

- At minimum, a half section of Arroyo Vista should be constructed from the existing roadway up the escarpment to connect to Del Webb Parkway and Estancia Parkway. These intersections should be two-way stop controlled, with Arroyo Vista uncontrolled. Extension of Arroyo Vista to Atrisco Vista should be considered, as a two-way stop-controlled intersection, with Atrisco Vista uncontrolled.
- A signal should be constructed at the intersection of Atrisco Vista and I-40 westbound by 2022 buildout. Coordination between this development and the project Chico development should occur to construct both I-40 ramp signals concurrently to allow the signals to be coordinated through the Atrisco Vista corridor.
- Due to the high delay for the eastbound left turn movement at the 98th Street and I-40 eastbound ramp, is another location where a “High-Tee” configuration should be

considered to promote two-stage left turns in a safer manner than under the current configuration. The need for this improvement should be monitored to determine when it is best to construct this improvement.

d) *2025 Recommendations*

As the development proceeds, and future traffic studies are prepared, the need for improvements will continually be refined. The following improvement recommendations are general in nature and should be revised as future traffic studies are conducted.

- At minimum, a half section of Arroyo Vista should be constructed from the existing roadway up the escarpment to connect to Atrisco Vista with a two-way stop condition. A northbound right turn lane and a southbound left turn lane should be constructed on Atrisco Vista. A westbound-to-southbound acceleration should be considered.
- Whenever Arroyo Vista is connected to Atrisco Vista, it is recommended that advance signing be placed on Atrisco Vista to alert drivers to the changed condition. This should also be done when Arroyo Vista is used as a construction entrance, with the same improvements as discussed above (turn lanes and acceleration lane).
- A signal should be constructed at the intersection of Atrisco Vista and Central, and the intersection of Arroyo Vista and eastbound ramp. The signal on Atrisco Vista should be coordinated along the Atrisco Vista corridor to optimize the flow of traffic through the corridor.
- Optimization of existing signal timing should occur at the intersections of Unser and Tierra Pintada and Unser and Ladera. This optimization should not conflict with the coordination of the signals on Unser.
- Construction of "118th Street" to connect Estancia Parkway to Atrisco Vista with a two-way stop condition on 118th Street. The intersection approaches for the westbound leg should have a dedicated right and dedicated left lane. A northbound right turn lane and southbound left turn lane should be constructed.

e) *2030 Recommendations*

As the development proceeds, and future traffic studies are prepared, the need for improvements will continually be refined. The following improvements are general in nature and should be revised as future traffic studies are conducted.

- At minimum, A full section of Arroyo Vista should be constructed from the existing roadway through the intersections of Inspiration.
- The second southbound left turn lane should be provided at the intersection of Atrisco Vista and I-40 eastbound by re-striping the existing bridge that currently has the second left striped out.
- Three westbound right turn lanes should be constructed at the intersection of Atrisco Vista and I-40 westbound based on the generation of traffic as discussed. As mentioned, this improvement may not be necessary if the proposed 118th Street interchange is constructed to serve lands south and north of I-40. Other studies have found the intersection of 98th Street and Central operates at extremely poor service due to high north/south traffic volumes. A new interchange would also serve to improve regional traffic congestion along 98th Street.
- A third northbound lane should be constructed at the intersections of Atrisco Vista and Frontage based on the generation of traffic as discussed in this development. Again, this improvement may not be necessary if the proposed 118th Street interchange is constructed.
- Signals should be constructed at the intersections of Ladera, Comfort Way and Frontage along Atrisco Vista based on the generation of traffic. The signalized intersections on Atrisco Vista should be coordinated along the Atrisco Vista corridor to optimize the flow of traffic through the corridor.
- A southbound dedicated left turning lane should be constructed at the intersections of Atrisco Vista and Ladera and Atrisco Vista and Comfort Way.
- A northbound dedicated right turn lane and southbound left turn lane should be constructed at the intersections of Atrisco Vista and Ladera and Atrisco Vista and Comfort Way.

II. REPORT STRUCTURE

Due to the size, complexity, and extent of this project, the roadway network was evaluated according to roadway type and development phasing by year. Please note the parcel numbers listed below and used in this report refer to the Site Plans contained in this report, and ***do not*** reflect parcel numbers that may be on any plats submitted for this project.

Additionally, as the development is constructed, new roadway connections and access points will be added for each phase. To assist in presenting the study results and information, a naming convention was developed to distinguish between intersections that exist today, future major intersections that will added during each phase, as well as the future development intersections will provide access to each subdivision in each phase.

Therefore, each phase analysis will contain discussions of three intersection types:

1. Existing Intersections
2. Future Major Intersections
3. Future Development Intersections

This roadway network and associated intersections are shown in the site plans in the figures following this discussion.

A. INTERSECTIONS TO BE STUDIED

The "existing" intersections referenced in this study are intersections that exist today in 2019. These consist of the following intersections:

Unser Boulevard:	Tierra Pintada, Ladera, I-40 WB Ramp, I-40 EB Ramp
Arroyo Vista Boulevard:	Inspiration West, Inspiration East, Tierra Pintada, Ladera, I-40 WB Ramp, I-40 EB Ramp
Atrisco Vista Boulevard:	Comfort Way (aka Comfort Way), North Frontage Road, I-40 WB Ramp, I-40 EB Ramp, Central Avenue

The "future major" intersections are intersections that will be constructed as part of the development and access an existing City or County road: These intersections are:

Arroyo Vista Boulevard:	Future intersections with Atrisco Vista, Estancia Parkway (serves the multi-generational single-family housing) and Del Webb Parkway (serves the active-adult housing)
Atrisco Vista Boulevard:	Future intersections with Arroyo Vista, 118th Street", and Ladera
Ladera	Future intersection with Estancia Parkway

The “future development” intersections are those intersections that access either Estancia Parkway (15 intersections), Del Webb Parkway (10 intersections), or Ladera (4 intersections) and serve as direct entrances to the residential development.

In addition to the intersection analysis discussed above, it was requested to do an analysis of Interstate 40 from west of Atrisco Vista to east of Unser. This freeway analysis will be presented as a separate section of the report which will discuss all development phases (2019, 2022, 2025, and 2030) and the impacts to interstate operations for both no build and build conditions.

III. DISCUSSION OF EXISTING CONDITIONS

A. BACKGROUND

Roadway federal classification is updated approximately every four years. The classification process involves local governments, the Mid Region Council of Governments (MRCOG), New Mexico Department of Transportation (NMDOT), and the Federal Highway Administration (FHWA). The 2016 MRCOG Roadway Functional Classification Map classifies roadways based on their function. Roadways are subject to design guidance based on their functional classification, design speed, or based on Comprehensive Plan corridor designations.

Interstate 40 (I-40) is a major east-west Interstate Highway that travels through the city of Albuquerque. There are 2-3 travel lanes in each direction with a posted speed limit of 75 MPH.

Atrisco Vista Blvd is designated as a Principal Arterial with one (1) travel lane in each direction and a posted speed limit is 40 MPH. The roadway includes dedicated bicycle lanes. The average weekday traffic volume is approximately 2,700 vpd. Atrisco Vista is designated as a "Commuter Corridor" and has a full access interchange with I-40.

Arroyo Vista Blvd/98th Street has a posted speed limit is 35 miles per hour (MPH). Arroyo Vista Blvd has three (3) travel lanes in each direction south of Tierra Pintada Blvd with a center median. West of Tierra Pintada Blvd, the travel lanes drop to one (1) lane in the westbound direction. The MRCOG Average Weekday Traffic Map indicates in 2016 Arroyo Vista Blvd has an average weekday traffic volume of approximately 3,000 vehicles per day (vpd) south of Tierra Pintada Blvd. Arroyo Vista Blvd has a full access interchange with I-40. The 2016 MRCOG Roadway Functional Classification map classifies Arroyo Vista Blvd as a Major Collector between Tierra Pintada Blvd and Ladera Dr and a Minor Arterial south of Ladera Dr. Arroyo Vista Blvd is not classified west of Tierra Pintada, however, the 2040 Metropolitan Transportation Plan designates Arroyo Vista Blvd as a future Community Principal Arterial in the Long Range Roadway System (LRRS).

Unser Boulevard is classified as a Principal Arterial with a posted speed limit of 45 MPH. Unser Blvd has three (3) travel lanes in each direction with a center median and bicycle lanes. The average weekday traffic volume is nearly 30,000 vpd. The Albuquerque Bernalillo County Comprehensive Plan designates Unser Blvd as a "Commuter Corridor." Unser Blvd has a full access interchange with I-40.

Central Avenue is classified as a Principal Arterial with a posted speed limit of 55 MPH. Central Ave has two (2) travel lanes in each direction with a divided center median. "Premium Transit Corridor" and "Major Transit Corridor" until 98th Street. "Main Street Corridor" until Coors Boulevard. The average weekday traffic volume is 10,000 to 20,000 vpd.

Ladera Dr is classified as a Minor Arterial with a posted speed limit of 35 MPH. Ladera Dr has two (2) travel lanes in each direction with a divided center median. The average weekday traffic volume on Ladera Dr is approximately 8,000 vpd. Ladera Dr and Arroyo Vista Blvd is a signalized intersection.

Tierra Pintada Blvd is classified as a Major Collector with a posted speed limit of 35 MPH. Tierra Pintada Blvd has two (2) travel lanes in each direction with a center median. The average weekday traffic volume on Tierra Pintada Blvd is approximately 4,700 vpd. Tierra Pintada Blvd and Arroyo Vista Blvd is a signalized intersection.

Estancia Parkway is a future road that will extend from Arroyo Vista on the north, south past Ladera and extending back to Atrisco Vista to align with Comfort Way (see site plan). This road will be built as a four-lane road to its complete section in each phase. Estancia Parkway will serve the multi-generation housing developments.

Del Webb Parkway is a future two-lane road that extends from Arroyo Vista to Estancia Parkway. See site plan. This road will be built as a full section in each phase.

1. DATA SOURCES

The data used in this report consist of the traffic counts described below, aerial photography, information provided by Western Albuquerque Land Holdings, 2040 Socioeconomic Forecasts from MRCOG, and mapping from Google Earth®.

B. FUTURE ROADWAY PROJECTS

The NMDOT Electronic Statewide Transportation Improvement Program (eSTIP) does not indicate any future projects within the vicinity of the project area prior to 2024. Beginning in 2024, NMDOT has Project A302122 for pavement preservation on I-40 for 2 miles of I-40 west of milepost 149.

C. EXISTING TRAFFIC VOLUMES

Due to the large number of intersections requested to be studied, traffic counts from previous studies were used. The traffic counts collected for the Fed Ex project (October 2017) and the Inspiration TIA (September 2018) in the City of Albuquerque were

supplemented by new counts in December 2019. Traffic counts were generally recorded from 6:00 to 9:00 AM and 4:00 to 7:00 PM, though the focus of some of the studies ended the PM peak hour at 6 PM. Figure 7 is a summary of the existing peak hour traffic volumes, existing laneage, turning movements, and intersection level of service. Existing traffic counts are included in Appendix A.

This study and the traffic counts were begun prior to clarified TIA requirements of the NMDOT and therefore do not include demand volumes nor necessarily have sufficient data to analyze a complete multi-period analysis for all time periods evaluated.

All traffic counts were increased to reflect 2019 traffic volumes. The growth rate used will be discussed in Section IV.A.4.a), 2022 Trip Distribution and Assignment on page 31.

The traffic counts included counts for heavy vehicles, pedestrians, and bicyclists.

D. LOS DEFINITIONS

The *Sixth Edition of the Highway Capacity Manual* (HCM) defines Level of Service (LOS) for intersections as follows:

Table 1 – LOS Definitions

Level of Service	Definition	Signalized (sec/veh)	Unsignalized (sec/veh)
A	Most vehicles do not stop.	<10	<10
B	Some vehicles stop.	>10 and <20	>10 and <15
C	Significant numbers of vehicles stop.	>20 and <35	>15 and <25
D	Many vehicles stop.	>35 and <55	>25 and <35
E	Limit of acceptable delay.	>55 and <80	>35 and <50
F	Unacceptable delay.	>80	>50

Bernalillo County, the NMDOT, and the City of Albuquerque have established LOS D as the generally acceptable level of service in urban areas and when intersections operate below this level, improvements are generally considered, where feasible.

E. TRAFFIC ANALYSIS TOOLS

Both Highway Capacity Software version 7 (HCS7) and Synchro were used to evaluate operational performance. Existing and future signalized intersections were evaluated using the urban streets signalized procedures of the HCS7. Future signalized intersections approximated anticipated City signal timing based on our experience with actual City signal timing provided for various studies that have been performed.

Due to when the analysis was performed, the existing and future unsignalized intersection traffic volumes were analyzed using the Synchro version 10 software, that reportedly uses the unsignalized intersection methodology from the Sixth Edition of HCM. Existing intersections used actual signal timing data from the City of Albuquerque.

The results for each intersection are summarized in V Intersection Capacity Analysis starting on page 71.

Freeway facilities were analyzed using HCS7. The freeway analysis starts on page 150.

F. JOBS HOUSING BALANCE

There are approximately 500 existing jobs within Master Plan area which include Tempur Pedic, Shamrock, and Fed Ex. The jobs housing balance ratio will be reported for each scenario based on the historical job growth in the area of approximately 33 jobs per year. Future economic development projects will affect this ratio. The jobs housing balance for existing conditions is of limited usefulness due to the lack of housing in the area at the present time.

ATRISCO VISTA/TEMPURPEDIC

ATRISCO VISTA/FRONTAGE

ATRISCO VISTA/WB RAMPS

ATRISCO VISTA/EB RAMPS

ATRISCO VISTA/CENTRAL

ARROYO VISTA/INSPIRATION WEST

ARROYO VISTA/INSPIRATION EAST

TIERRA PINTADA/ARROYO VISTA

UNSER/TIERRA PINTADA

ARROYO VISTA/LADERA

UNSER/LADERA

ARROYO VISTA/WB RAMPS

UNSER/WB RAMPS

ARROYO VISTA/EB RAMPS

UNSER/EB RAMPS

LEGEND

- Thru Lanes (# as indicated)
- Turning Lanes (# as indicated)
- 1234(1234) AM(PM) Traffic Counts
- X(X) AM(PM) Level of Service (LOS)

FIGURE 7
2019 EXISTING AM (PM) PEAK HOUR TRAFFIC VOLUMES

UPPER PETROGLYPHS
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IV. PROJECTED TRAFFIC

A. SITE TRAFFIC FORECASTING

Due to the multiple phases evaluated in this report, each phase will have a separate discussion regarding future traffic projections.

1. TRIP GENERATION

Generated trips are broken down into three types; 1) primary, 2) pass-by trips, and 3) diverted link. The Trip Generation report defines these trips as follows:

- **Primary Trips** – These trips are made for the specific purpose of visiting the generator. The stop at that generator is the primary reason for the trip. For example, a home to shopping to home combination of trips is a primary trip set.
- **Pass-by Trips** – These trips are made as intermediate stops on the way from an origin to a primary trip generation. Pass-by trips are attracted from the traffic passing the site on an adjacent street that contains direct access to the generator site. These trips do not require a diversion from another roadway. For example, stopping at the store on the way home from work is an example of a pass-by trip. No pass-by trips were used in this analysis.
- **Diverted Linked Trips –** These trips are attracted from the traffic volume on the roadway within the vicinity of the generator, but which require a diversion from that roadway to another roadway to gain access to the site. The roadways could include streets or freeways adjacent to the generator, but without access to the generator. For this study, the diverted link trips have been included in with the primary trips.

The specific trips generated for each phase will be discussed in the Site Traffic Forecasting section when that phase is discussed in the report.

a) *2022 Trip Generation*

Phase 1 consists of both Active Adult Detached Housing as well as the traditional Multi-Generation Detached Single Family Housing. In addition to the housing component in Upper Petroglyphs, a small amount of employment was added to the Cordero Mesa/Comfort Way area to account for historical employment growth in the area (approximately 33 jobs per year since 2005).

The Phase 1 development area is shown in Figure 3. As shown in the figure, Phase 1 begins near Arroyo Vista Boulevard east of Atrisco Vista Boulevard.

Initial stub sections of Estancia Parkway and Del Webb Parkway will be constructed south of Arroyo Vista to serve the Phase 1 development. These roadways will be extended to serve future phases as required.

Phase 1 consists of Active Adult Parcels 16 and 17 North and 17 South, and Multi-Generation parcels 13B and 13C. The Active Adult parcels will be accessed via Del Webb Parkway, and the Multi-Generation parcels will have access from Estancia Parkway.

All Employment trips were assumed to have destinations off Comfort Way.

The Institute of Transportation Engineers Trip Generation Manual, 10th Edition was used to estimate the trips generated by the site.

Table 2 – Phase 1 Trip Generation

Land Use	Size	ITE Land Use Type Assumed	Daily	AM Enter	AM Exit	PM Enter	PM Exit
Residential	153 DU's	Senior Adult Housing Code 251	818	25	45	50	31
Residential	301 DU's	Single-Family Detached Housing Code 210	2,866	57	168	191	111
Employment	67 employees	Industrial Park Code 130	493	41	6	12	45
Trip Generation			**4,177**	**123**	**219**	**253**	**187**

b) *2022 Jobs Housing Balance*

The jobs housing ratio is expected to be 1.25 in 2022 with 567 jobs and 454 dwelling units. Please note this estimate does not include Project Chico. Including an estimated 1,100 jobs with Project Chico would result in a jobs housing balance of 3.67.

c) *2025 Trip Generation*

Phase 1-3 again consists of both Active Adult Detached Housing as well as the traditional Multi-Generation Detached Single Family Housing. As in the Phase 1 analysis, a small amount of employment was added to the Cordero Mesa/Comfort Way area to account for historical employment growth in the area (approximately 33 jobs per year since 2005).

A figure showing the Phase 1-3 development area is shown in Figure 4. As shown in the figure, Phase 1-3 begins near Arroyo Vista Boulevard east of Atrisco Vista Boulevard. As parcels within the Phase 1-3 development area are developed, Estancia Parkway and/or Del Webb Parkway will be extended incrementally as necessary to serve the parcels as needed.

All Employment trips were assumed to have destinations off Comfort Way.

The Institute of Transportation Engineers Trip Generation Manual, 10th Edition was used to estimate the trips generated by the site.

Table 3 – Phase 1-3 Trip Generation

Land Use	Size	ITE Land Use Type Assumed	Daily	AM Enter	AM Exit	PM Enter	PM Exit
Residential	404 DU's	Senior Adult Housing Code 251	1,923	59	109	121	75
Residential	1,158 DU's	Single-Family Detached Housing Code 210	9,899	223	652	745	430
Employment	167 employees	Industrial Park Code 130	917	86	13	23	89
Trip Generation			**12,739**	**368**	**774**	**889**	**594**

d) *2025 Jobs Housing Balance*

The jobs housing ratio is expected to be 0.43 in 2025 with 667 jobs and 1,562 dwelling units. Please note this estimate does not include Project Chico. Including the estimated 1,100 jobs in Project Chico would results in a jobs housing balance of 1.13.

e) *2030 Trip Generation*

Phase 1-7 again consists of both Active Adult Detached Housing as well as the traditional Multi-Generation Detached Single Family Housing. As in the previous analyses, a small amount of employment was added to the Cordero Mesa/Comfort Way area to account for historical employment growth in the area (approximately 33 jobs per year since 2005). In addition, Phases 1-7 add a multi-family apartment complex.

A figure showing the Phase 1-7 development area is shown in Figure 5. As shown in the figure, Phase 1-7 begins near Arroyo Vista Boulevard east of Atrisco Vista Boulevard and extends south past Ladera. As parcels within the Phase 1-7 development area are developed, Estancia Parkway and/or Del Webb Parkway will be extended incrementally as necessary to serve the parcels as needed.

All Employment trips were assumed to have destinations off Comfort Way.

The Institute of Transportation Engineers Trip Generation Manual, 10th Edition was used to estimate the trips generated by the site.

Table 4 – Phase 1-7 Trip Generation

Land Use	Size	ITE Land Use Type Assumed	Daily	AM Enter	AM Exit	PM Enter	PM Exit
Residential	868 DU's	Senior Adult Housing Code 251	3,768	117	224	247	153
Residential	2,891 DU's	Single-Family Detached Housing Code 210	22,967	555	1,629	1,857	1,072
Residential	482 DU's	Multi-Family Housing (Low-Rise) Code 220	3,604	49	164	152	88
Employment	333 employees	Industrial Park Code 130	1,465	149	24	38	149
Trip Generation			**31,804**	**870**	**2,041**	**2,294**	**1,462**

f) *2030 Jobs Housing Balance*

The jobs housing ratio is expected to be 0.20 in 2030 with 833 jobs and 4,241 dwelling units. Please note this estimate does not include Project Chico. With the approximately 1,100 jobs in Project Chico, the jobs housing balance would be 0.46.

2. ROAD NETWORK

a) *2022 Road Network*

Although Figure 3 does not show the extension of Arroyo Vista to Atrisco Vista, the 2022 build analysis will consider Arroyo Vista connected to Atrisco Vista. Also, for Phase 1, Arroyo Vista Boulevard will initially be constructed as a 2-lane roadway, with just the south half of a future 4-lane roadway being constructed. As the highest 2022 directional build volume on Atrisco Vista in the AM and PM peak hours is 213 and 241 respectively, a 2-lane section will accommodate the expected volume.

The figure also shows the locations of the proposed entrances to the subdivisions. The initial sections of Estancia Parkway and Del Webb Parkway will be constructed with their full roadway section starting in Phase 1.

Any improvements needed for the 2022 road network will be discussed in Section V, Intersection Capacity Analysis, beginning on page 71.

b) *Atrisco Vista Traffic Diversion to Arroyo Vista*

Modeling estimates provided to Bernalillo County from MRCOG indicate that approximately 25% of the trips on Atrisco Vista would divert to the Arroyo Vista extension if Arroyo Vista were to be extended to Atrisco Vista. Therefore the 2022 No Build (and all future analyses) will assume that 25% of the Atrisco Vista traffic will use Arroyo Vista to access I-40.

c) *2025 Road Network*

The initial sections of Estancia Parkway and Del Webb Parkway constructed to serve Phase 1 will be extended south to serve the Phase 1-3 development. These roadways will continue to be extended to serve future phases as required.

Phases 1-3 consists of Active Adult Parcels 16, 17 North, 17 South, 18 East, and 18 West. Multi-Generation parcels 13A, 13B, 13C, 14A, 14B, 15 North, 15 South, and 23A, B, and C. The Active Adult parcels will be accessed via Del Webb Parkway, and the Multi-

Generation parcels will have access from Estancia Parkway and via a "118th Street" extension from Atrisco Vista as shown in Figure 4.

The figure also shows the locations of the entrances to the subdivisions.

As mentioned previously, the 2025 No Build (and all future analyses) will assume that 25% of the Atrisco Vista traffic will use Arroyo Vista to access I-40.

Any improvements needed for the 2025 road network will be discussed in Section V, Intersection Capacity Analysis, beginning on page 71.

d) *2030 Road Network*

The initial sections of Estancia Parkway and Del Webb Parkway constructed to serve Phase 1-3 will be extended south to serve the Phase 1-7 development. With the construction of Phases 1-7, the main roadway backbone infrastructure will be constructed for Upper Petroglyphs from Arroyo Vista south to Comfort Way (aka Comfort Way), with connections to Atrisco Vista at future 118th Street and Ladera Drive.

The Active Adult parcels will continue to be accessed via Del Webb Parkway, and the Multi-Generation parcels will have access from Estancia Parkway and via a "118th Street" extension from Atrisco Vista. The Multi-Family apartments will have access from Ladera and Estancia Parkway.

Arroyo Vista Boulevard will be constructed as a 4-lane section prior to Phase 3 construction.

The figure also shows the locations of the entrances to the subdivisions.

As mentioned previously, the 2030 No Build (and all future analyses) will assume that 25% of the Atrisco Vista traffic will use Arroyo Vista to access I-40.

Any improvements needed for the 2030 road network will be discussed in Section V, Intersection Capacity Analysis, beginning on page 71.

3. NO BUILD TRAFFIC PROJECTIONS

An annual growth rate of 2% per year was used to determine all future background volumes for the intersection analysis. Although this may appear to be low, it was determined that due to the size of the development considered in this study, a substantial amount of the future growth expected would result from the proposed development, and that it would be inappropriate to overstate the expected growth on the roadways. The data and calculations for future year no-build traffic projections are summarized in spreadsheets in the appropriate appendix for each scenario. These are also shown graphically in Figure 8 on page 30 (2022

No Build), Figure 16 on page 40 (2025 No Build), and Figure 24 on page 53 (2030 No Build).

Please note the No Build traffic analyses presented in the following pages are a true no build, and do not include development traffic from the previous phases.

ATRISCO VISTA/TEMPURPEDIC

ATRISCO VISTA/FRONTAGE

ATRISCO VISTA/WB RAMPS

ATRISCO VISTA/EB RAMPS

ATRISCO VISTA/CENTRAL

ARROYO VISTA/INSPIRATION WEST

ARROYO VISTA/INSPIRATION EAST

TIERRA PINTADA/ARROYO VISTA

UNSER/TIERRA PINTADA

ARROYO VISTA/LADERA

UNSER/LADERA

ARROYO VISTA/WB RAMPS

UNSER/WB RAMPS

ARROYO VISTA/EB RAMPS

UNSER/EB RAMPS

LEGEND

- Thru Lanes (# as indicated)
- Turning Lanes (# as indicated)
- 1234(1234) AM(PM) Traffic Counts
- X(X) AM(PM) Level of Service (LOS)

FIGURE 8
2022 NO-BUILD AM (PM) PEAK HOUR TRAFFIC VOLUMES

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4. TRIP DISTRIBUTION AND ASSIGNMENT

Trip distribution and assignment was based on standard gravity model methodology using logical trip routing for each land use type. The gravity model utilized socioeconomic data obtained from the Mid-Region Council of Governments, which included population and employment estimates for each subarea within the Albuquerque Metropolitan Planning Area to develop the trip distribution.

Spreadsheets showing the development of the trips at each intersection for each of the build scenarios are also included in the respective appendix as discussed under each Phase narrative. The trip distribution percentages and assigned traffic volumes for each Build analysis will also be presented in the sections discussing the particular phase.

a) *2022 Trip Distribution and Assignment*

Trip distribution and assignment was developed using a modified gravity model and MRCOG employment and population data. Separate distributions were developed for the three land uses: employment, active adult, and multi-generational residential. These are shown in Figure 9 through Figure 14. Overall 2022 build volumes for each intersection are shown in Figure 15. Spreadsheets showing the development of the 2022 Build volumes are in Appendix B.

LEGEND

- Thru Lanes (# as indicated)
- Turning Lanes (# as indicated)
- 1234(1234) Trip Assignment Percentages
- N Entering
- X Exiting

FIGURE 9
2022 TRIP DISTRIBUTION & ASSIGNMENT
PERCENTAGES-EMPLOYMENT

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FIGURE 10
2022 TRIP DISTRIBUTION &
ASSIGNMENT VOLUMES AM (PM) -
EMPLOYMENT

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FIGURE 11
2022 TRIP DISTRIBUTION & ASSIGNMENT PERCENTAGES - ACTIVE ADULT

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FIGURE 12
2022 TRIP DISTRIBUTION &
ASSIGNMENT VOLUMES AM (PM) -
ACTIVE ADULT

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ATRISCO VISTA/Arroyo Vista

Estancia/Arroyo Vista

Del Webb/Arroyo Vista

ARROYO VISTA/INSPIRATION WEST

ARROYO VISTA/INSPIRATION EAST

ATRISCO VISTA/TEMPURPEDIC

ATRISCO VISTA/118th

Estancia/Parcel 13B/Parcel 15

Del Webb/Parcel 16/Parcel 17N

TIERRA PINTADA/ARROYO VISTA

UNSER/TIERRA PINTADA

ATRISCO VISTA/FRONTAGE

ATRISCO VISTA/Parcel 23C

Parcel 13C/Estancia

Del Webb/Amenity

ARROYO VISTA/LADERA

UNSER/LADERA

ATRISCO VISTA/WB RAMPS

Parcel 17 South/Del Webb

ARROYO VISTA/WB RAMPS

UNSER/WB RAMPS

ATRISCO VISTA/EB RAMPS

ARROYO VISTA/EB RAMPS

UNSER/EB RAMPS

ATRISCO VISTA/CENTRAL

LEGEND

- Thru Lanes (# as indicated)
- Turning Lanes (# as indicated)
- 1234(1234) Trip Assignment Percentages
- N Entering
- X Exiting

FIGURE 13
2022 TRIP DISTRIBUTION & ASSIGNMENT PERCENTAGES - MULTI-GEN RESIDENTIAL

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FIGURE 14
2022 TRIP DISTRIBUTION &
ASSIGNMENT VOLUMES AM (PM) -
MULTI-GEN RESIDENTIAL

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FIGURE 15
2022 BUILD VOLUMES AM (PM)

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b) *2025 Trip Distribution and Assignment*

Trip distribution and assignment was developed using a modified gravity model and MRCOG employment and population data. Separate distributions were developed for the three land uses: employment, active adult, and multi-generational residential. The trip distributions for the various Phase years evaluated were comparable, so a single distribution was used for 2022, 2025, and 2030, however the trip assignments to individual intersections were modified to account for the roadway networks available for each analysis year. For the 2025 year, this distribution and assignment are shown in Figure 17 through Figure 22. Overall 2025 build volumes for each intersection are shown in Figure 23.

Spreadsheets showing the development of the 2025 Build volumes are in Appendix C.

ATRISCO VISTA/TEMPURPEDIC

ATRISCO VISTA/FRONTAGE

ATRISCO VISTA/WB RAMPS

ATRISCO VISTA/EB RAMPS

ATRISCO VISTA/CENTRAL

ARROYO VISTA/INSPIRATION WEST

ARROYO VISTA/INSPIRATION EAST

TIERRA PINTADA/ARROYO VISTA

UNSER/TIERRA PINTADA

ARROYO VISTA/LADERA

UNSER/LADERA

ARROYO VISTA/WB RAMPS

UNSER/WB RAMPS

ARROYO VISTA/EB RAMPS

UNSER/EB RAMPS

LEGEND

- Thru Lanes (# as indicated)
- Turning Lanes (# as indicated)
- 1234(1234) AM(PM) Traffic Counts
- X(X) AM(PM) Level of Service (LOS)

FIGURE 16
2025 NO-BUILD AM (PM) PEAK HOUR TRAFFIC VOLUMES

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FIGURE 17
2025 TRIP DISTRIBUTION & ASSIGNMENT PERCENTAGES - EMPLOYMENT

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ATRISCO VISTA/Arroyo Vista

Estancia/Arroyo Vista

Del Webb/Arroyo Vista

ARROYO VISTA/INSPIRATION WEST

ARROYO VISTA/INSPIRATION EAST

ATRISCO VISTA/TEMPURPEDIC

ATRISCO VISTA/118th

TIERRA PINTADA/ARROYO VISTA

UNSER/TIERRA PINTADA

ATRISCO VISTA/FRONTAGE

ATRISCO VISTA/Parcel 23C

ARROYO VISTA/LADERA

UNSER/LADERA

ATRISCO VISTA/WB RAMPS

ARROYO VISTA/WB RAMPS

UNSER/WB RAMPS

ATRISCO VISTA/EB RAMPS

ARROYO VISTA/EB RAMPS

UNSER/EB RAMPS

ATRISCO VISTA/CENTRAL

LEGEND

Thru Lanes (# as indicated)

Turning Lanes (# as indicated)

1234(1234) AM(PM) Traffic Counts

FIGURE 18
2025 TRIP DISTRIBUTION & ASSIGNMENT VOLUMES AM (PM) - EMPLOYMENT

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FIGURE 19A
2025 TRIP DISTRIBUTION & ASSIGNMENT PERCENTAGES - ACTIVE ADULT

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LEGEND

- Thru Lanes (# as indicated)
- Turning Lanes (# as indicated)
- 1234(1234) Trip Assignment Percentages
- N Entering
- X Exiting

FIGURE 19B
2025 TRIP DISTRIBUTION & ASSIGNMENT PERCENTAGES - ACTIVE ADULT

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ATRISCO VISTA/Arroyo Vista

Estancia/Arroyo Vista

Del Webb/Arroyo Vista

ARROYO VISTA/INSIPRATION WEST

ARROYO VISTA/INSPIRATION EAST

ATRISCO VISTA/TEMPURPEDIC

ATRISCO VISTA/118th

ATRISCO VISTA/FRONTAGE

ATRISCO VISTA/Parcel 23C

ATRISCO VISTA/WB RAMPS

ATRISCO VISTA/EB RAMPS

ATRISCO VISTA/CENTRAL

TIERRA PINTADA/ARROYO VISTA

UNSER/TIERRA PINTADA

ARROYO VISTA/LADERA

UNSER/LADERA

ARROYO VISTA/WB RAMPS

UNSER/WB RAMPS

ARROYO VISTA/EB RAMPS

UNSER/EB RAMPS

LEGEND

Thru Lanes
(# as indicated)

Turning Lanes
(# as indicated)

1234(1234) AM(PM) Traffic Counts

FIGURE 20A
2025 TRIP DISTRIBUTION & ASSIGNMENT VOLUMES AM (PM) - ACTIVE ADULT

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LEGEND

- Thru Lanes (# as indicated)
- Turning Lanes (# as indicated)
- 1234(1234) AM(PM) Traffic Counts

FIGURE 20B
2025 TRIP DISTRIBUTION & ASSIGNMENT VOLUMES AM (PM) - ACTIVE ADULT

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ATRISCO VISTA/Arroyo Vista

Estancia/Arroyo Vista

Del Webb/Arroyo Vista

ARROYO VISTA/INSPIRATION WEST

ARROYO VISTA/INSPIRATION EAST

ATRISCO VISTA/TEMPURPEDIC

ATRISCO VISTA/118th

ATRISCO VISTA/FRONTAGE

ATRISCO VISTA/Parcel 23C

ATRISCO VISTA/WB RAMPS

ATRISCO VISTA/EB RAMPS

ATRISCO VISTA/CENTRAL

TIERRA PINTADA/ARROYO VISTA

UNSER/TIERRA PINTADA

ARROYO VISTA/LADERA

UNSER/LADERA

ARROYO VISTA/WB RAMPS

UNSER/WB RAMPS

ARROYO VISTA/EB RAMPS

UNSER/EB RAMPS

LEGEND

- Thru Lanes (# as indicated)
- Turning Lanes (# as indicated)
- 1234(1234) Trip Assignment Percentages
- N Entering
- X Exiting

FIGURE 21A
2025 TRIP DISTRIBUTION & ASSIGNMENT PERCENTAGES - MULTI-GEN RESIDENTIAL

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LEGEND

- Thru Lanes (# as indicated)
- Turning Lanes (# as indicated)
- 1234(1234) Trip Assignment Percentages
- N Entering
- X Exiting

FIGURE 21B
2025 TRIP DISTRIBUTION & ASSIGNMENT PERCENTAGES - MULTI-GEN RESIDENTIAL

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ATRISCO VISTA/Arroyo Vista

Estancia/Arroyo Vista

Del Webb/Arroyo Vista

ARROYO VISTA/INSPIRATION WEST

ARROYO VISTA/INSPIRATION EAST

ATRISCO VISTA/TEMPURPEDIC

ATRISCO VISTA/118th

TIERRA PINTADA/ARROYO VISTA

UNSER/TIERRA PINTADA

ATRISCO VISTA/FRONTAGE

ATRISCO VISTA/Parcel 23C

ARROYO VISTA/LADERA

UNSER/LADERA

ATRISCO VISTA/WB RAMPS

ARROYO VISTA/WB RAMPS

UNSER/WB RAMPS

ATRISCO VISTA/EB RAMPS

ARROYO VISTA/EB RAMPS

UNSER/EB RAMPS

ATRISCO VISTA/CENTRAL

LEGEND

Thru Lanes (# as indicated)

Turning Lanes (# as indicated)

1234(1234) AM(PM) Traffic Counts

FIGURE 22A
2025 TRIP DISTRIBUTION & ASSIGNMENT VOLUMES AM (PM) - RESIDENTIAL

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LEGEND

Thru Lanes (# as indicated)

Turning Lanes (# as indicated)

1234(1234) AM(PM) Traffic Counts

FIGURE 22B
2025 TRIP DISTRIBUTION & ASSIGNMENT VOLUMES AM (PM) - RESIDENTIAL

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ATRISCO VISTA/Arroyo Vista

Estancia/Arroyo Vista

Del Webb/Arroyo Vista

ARROYO VISTA/INSPIRATION WEST

ARROYO VISTA/INSPIRATION EAST

ATRISCO VISTA/TEMPURPEDIC

ATRISCO VISTA/118th

TIERRA PINTADA/ARROYO VISTA

UNSER/TIERRA PINTADA

ATRISCO VISTA/FRONTAGE

ATRISCO VISTA/Parcel 23C

ARROYO VISTA/LADERA

UNSER/LADERA

ATRISCO VISTA/WB RAMPS

ARROYO VISTA/WB RAMPS

UNSER/WB RAMPS

ATRISCO VISTA/EB RAMPS

ARROYO VISTA/EB RAMPS

UNSER/EB RAMPS

ATRISCO VISTA/CENTRAL

LEGEND

- Thru Lanes (# as indicated)
- Turning Lanes (# as indicated)
- 1234(1234) AM(PM) Traffic Counts
- X(X) AM(PM) Level of Service (LOS)

FIGURE 23A
2025 BUILD AM (PM) PEAK HOUR TRAFFIC VOLUMES

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Estancia/Parcel 13A/Parcel 15N

Estancia/Parcel 23A

Del Webb/Parcel 16/Parcel 17N

Estancia/Parcel 13B/Parcel 15

Estancia/Parcel 23B

Del Webb/Parcel 18

Estancia/Parcel 13C/Parcel 15 South

Estancia/Del Webb

Del Webb/Parcel 18/Amenity

Estancia/Parcel 14A

Del Webb/Parcel 17 South

Estancia/Parcel 14B

Estancia/118th Street

LEGEND

- Thru Lanes (# as indicated)
- Turning Lanes (# as indicated)
- 1234(1234) AM(PM) Traffic Counts
- X(X) AM(PM) Level of Service (LOS)

FIGURE 23B
2025 BUILD AM (PM) PEAK HOUR TRAFFIC VOLUMES

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ARROYO VISTA/DRIVEWAY 1

ARROYO VISTA/DRIVEWAY 2

ATRISCO VISTA/TEMPURPEDIC

ATRISCO VISTA/FRONTAGE

ATRISCO VISTA/WB RAMPS

ATRISCO VISTA/EB RAMPS

ATRISCO VISTA/CENTRAL

TIERRA PINTADA/ARROYO VISTA

UNSER/TIERRA PINTADA

ARROYO VISTA/LADERA

UNSER/LADERA

UNSER/WB RAMPS

ARROYO VISTA/WB RAMPS

ARROYO VISTA/EB RAMPS

UNSER/EB RAMPS

LEGEND

- Thru Lanes (# as indicated)
- Turning Lanes (# as indicated)
- 1234(1234) AM(PM) Traffic Counts
- X(X) AM(PM) Level of Service (LOS)

FIGURE 24
2030 NO-BUILD AM (PM) PEAK HOUR TRAFFIC VOLUMES

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c) *2030 Trip Distribution and Assignment*

The trip distribution and assignment for the 2030 analysis is shown in Figure 25 through Figure 32. Overall 2030 build volumes for each intersection are shown in Figure 33.

Spreadsheets showing the development of the 2030 Build volumes are in Appendix D.

FIGURE 25
2030 TRIP DISTRIBUTION & ASSIGNMENT PERCENTAGES - EMPLOYMENT

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FIGURE 26
2030 TRIP DISTRIBUTION &
ASSIGNMENT VOLUMES AM (PM) -
EMPLOYMENT

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Atrisco Vista/Arroyo Vista

Estancia Pkwy/Arroyo Vista

Del Webb/Arroyo Vista

ARROYO VISTA/DRIVEWAY 1

ARROYO VISTA/DRIVEWAY 2

ATRISCO VISTA/TEMPURPEDIC

Atrisco Vista/118th Street

ATRISCO VISTA/FRONTAGE

Atrisco Vista/Parcel 23

ATRISCO VISTA/WB RAMPS

Atrisco Vista/Ladera

ATRISCO VISTA/EB RAMPS

Ladera/Parcel 24C

ATRISCO VISTA/CENTRAL

Parcel 37/Parcel 25C/Ladera

TIERRA PINTADA/ARROYO VISTA

UNSER/TIERRA PINTADA

ARROYO VISTA/LADERA

UNSER/LADERA

ARROYO VISTA/WB RAMPS

UNSER/WB RAMPS

ARROYO VISTA/EB RAMPS

UNSER/EB RAMPS

LEGEND

- Thru Lanes (# as indicated)
- Turning Lanes (# as indicated)
- 1234(1234) Trip Assignment Percentages
- N Entering
- X Exiting

FIGURE 27A
2030 TRIP DISTRIBUTION & ASSIGNMENT PERCENTAGES - ACTIVE ADULT

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Estancia Pkwy/Ladera

Estancia/Parcel 13A/Parcel 15N

Estancia/Parcel 23A

Estancia/Parcel 36A/Parcel 29A

Del Webb/Parcel 16/Parcel 17N

Parcel 22B/Parcel 20B/Del Webb

Parcel 29A/Parcel 26S/Ladera

Estancia/Parcel 13B/Parcel 15

Estancia/Parcel 23B

Estancia/Parcel 36B/Parcel 32

Del Webb/Parcel 18A

Parcel 22C/Del Webb

Parcel 29B/Parcel 27/Ladera

Estancia/Parcel 13C/Parcel 15S

Estancia/Del Webb

Estancia/Parcel 36C

Del Webb/Parcel 18B/Amenity

Del Webb/Parcel 19

Estancia/Parcel 14A

Estancia/Parcel 25A/24A/Parcel 26N

Del Webb/Parcel 20A/Parcel 17S

Parcel 22D/Del Webb

Estancia/Parcel 14B

Estancia/Parcel 25/24/Parcel 26S/26N

Del Webb/Amenity

Estancia/118th Street

Estancia/Parcel 25B/24B/Parcel 26S

Parcel 22A/Del Webb

LEGEND

- Thru Lanes (# as indicated)
- Turning Lanes (# as indicated)
- 1234(1234) Trip Assignment Percentages
- N Entering
- X Exiting

FIGURE 27B
2030 TRIP DISTRIBUTION & ASSIGNMENT PERCENTAGES - ACTIVE ADULT

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FIGURE 28A
2030 TRIP DISTRIBUTION & ASSIGNMENT VOLUMES AM (PM) - ACTIVE ADULT

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LEGEND

- Thru Lanes (# as indicated)
- Turning Lanes (# as indicated)
- 1234(1234) AM(PM) Traffic Counts
- X(X) AM(PM) Level of Service (LOS)

FIGURE 28B
2030 TRIP DISTRIBUTION & ASSIGNMENT VOLUMES AM (PM) - ACTIVE ADULT

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LEGEND

- Thru Lanes (# as indicated)
- Turning Lanes (# as indicated)
- 1234(1234) Trip Assignment Percentages
- N Entering
- X Exiting

FIGURE 29A
2030 TRIP DISTRIBUTION & ASSIGNMENT PERCENTAGES - MULTI-GEN RESIDENTIAL

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Estancia Pkwy/Ladera

Estancia/Parcel 13A/Parcel 15N

Estancia/Parcel 23A

Estancia/Parcel 36A/Parcel 29A

Del Webb/Parcel 16/Parcel 17N

Parcel 22B/Parcel 20B/Del Webb

Parcel 29A/Parcel 26S/Ladera

Estancia/Parcel 13B/Parcel 15

Estancia/Parcel 23B

Estancia/Parcel 36B/Parcel 32

Del Webb/Parcel 18A

Parcel 22C/Del Webb

Parcel 29B/Parcel 27/Ladera

Estancia/Parcel 13C/Parcel 15S

Estancia/Del Webb

Estancia/Parcel 36C

Del Webb/Parcel 18B/Amenity

Del Webb/Parcel 19

Estancia/Parcel 14A

Estancia/Parcel 25A/24A/Parcel 26N

Del Webb/Parcel 20A/Parcel 17S

Parcel 22D/Del Webb

Estancia/Parcel 14B

Estancia/Parcel 25/24/Parcel 26S/26N

Del Webb/Amenity

Estancia/118th Street

Estancia/Parcel 25B/24B/Parcel 26S

Parcel 22A/Del Webb

LEGEND

- Thru Lanes (# as indicated)
- Turning Lanes (# as indicated)
- 1234(1234) Trip Assignment Percentages
- N Entering
- X Exiting

FIGURE 29B
2030 TRIP DISTRIBUTION & ASSIGNMENT PERCENTAGES - MULTI-GEN RESIDENTIAL

UPPER PETROGLYPHS
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LEGEND

- Thru Lanes (# as indicated)
- Turning Lanes (# as indicated)
- 1234(1234) AM(PM) Traffic Counts
- X(X) AM(PM) Level of Service (LOS)

FIGURE 30A
2030 TRIP DISTRIBUTION & ASSIGNMENT VOLUMES AM (PM) - RESIDENTIAL

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Estancia Pkwy/Ladera

Estancia/Parcel 13A/Parcel 15N

Estancia/Parcel 23A

Estancia/Parcel 36A/Parcel 29A

Del Webb/Parcel 16/Parcel 17N

Parcel 22B/Parcel 20B/Del Webb

Parcel 29A/Parcel 26S/Ladera

Estancia/Parcel 13B/Parcel 15

Estancia/Parcel 23B

Estancia/Parcel 36B/Parcel 32

Del Webb/Parcel 18A

Parcel 22C/Del Webb

Parcel 29B/Parcel 27/Ladera

Estancia/Parcel 13C/Parcel 15S

Estancia/Del Webb

Estancia/Parcel 36C

Del Webb/Parcel 18B/Amenity

Del Webb/Parcel 19

Estancia/Parcel 14A

Estancia/Parcel 25A/24A/Parcel 26N

Del Webb/Parcel 20A/Parcel 17S

Parcel 22D/Del Webb

Estancia/Parcel 14B

Estancia/Parcel 25/24/Parcel 26S/26N

Del Webb/Amenity

Estancia/118th Street

Estancia/Parcel 25B/24B/Parcel 26S

Parcel 22A/Del Webb

LEGEND

- Thru Lanes (# as indicated)
- Turning Lanes (# as indicated)
- 1234(1234) AM(PM) Traffic Counts
- X(X) AM(PM) Level of Service (LOS)

FIGURE 30B
2030 TRIP DISTRIBUTION & ASSIGNMENT VOLUMES AM (PM) - RESIDENTIAL

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FIGURE 31A
2030 TRIP DISTRIBUTION & ASSIGNMENT PERCENTAGES - MULTI-GEN RESIDENTIAL

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FIGURE 31B
2030 TRIP DISTRIBUTION & ASSIGNMENT PERCENTAGES - MULTI-GEN RESIDENTIAL

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LEGEND

- Thru Lanes (# as indicated)
- Turning Lanes (# as indicated)
- 1234(1234) AM(PM) Traffic Counts
- X(X) AM(PM) Level of Service (LOS)

FIGURE 32A
2030 TRIP DISTRIBUTION & ASSIGNMENT VOLUMES AM (PM) - MULTI-GEN RESIDENTIAL

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FIGURE 32B
2030 TRIP DISTRIBUTION & ASSIGNMENT VOLUMES AM (PM) - MULTI-GEN RESIDENTIAL

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Atrisco Vista/Arroyo Vista

Estancia Pkwy/Arroyo Vista

Del Webb/Arroyo Vista

ARROYO VISTA/INSPIRATION WEST

ARROYO VISTA/INSPIRATION EAST

ATRISCO VISTA/TEMPURPEDIC

Atrisco Vista/118th Street

TIERRA PINTADA/ARROYO VISTA

UNSER/TIERRA PINTADA

ATRISCO VISTA/FRONTAGE

Atrisco Vista/Parcel 23

ARROYO VISTA/LADERA

UNSER/LADERA

ATRISCO VISTA/WB RAMPS

Atrisco Vista/Ladera

ARROYO VISTA/WB RAMPS

UNSER/WB RAMPS

ATRISCO VISTA/EB RAMPS

Ladera/Parcel 24C

ARROYO VISTA/EB RAMPS

UNSER/EB RAMPS

ATRISCO VISTA/CENTRAL

Parcel 37/Parcel 25C/Ladera

LEGEND

- Thru Lanes (# as indicated)
- Turning Lanes (# as indicated)
- 1234(1234) AM(PM) Traffic Counts
- X(X) AM(PM) Level of Service (LOS)

FIGURE 33A
2030 BUILD AM (PM) PEAK HOUR TRAFFIC VOLUMES

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LEGEND

- Thru Lanes (# as indicated)
- Turning Lanes (# as indicated)
- 1234(1234) AM(PM) Traffic Counts
- X(X) AM(PM) Level of Service (LOS)

FIGURE 33B
2030 BUILD AM (PM) PEAK HOUR TRAFFIC VOLUMES

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V. INTERSECTION CAPACITY ANALYSIS

The following section will discuss the intersection capacity analysis for all intersections studied. It will start on the west at Atrisco Vista and Central and go north to discuss all existing intersections, then to Arroyo Vista andI-40 Eastbound Ramp and go north, then to Unser and the I-40 Eastbound Ramp and go north. The "future, major" intersections that intersect with City or County streets will follow after the existing intersections. The last sections will discuss the intersections along the subdivision roadways (Estancia Parkway and Del Webb Parkway) that provide access to each individual development.

Each discussion will include all scenarios so the impacts at each intersection can be discussed in one section. 2022 Build volumes are shown in Figure 15 on page 38. 2025 Build volumes are shown in Figure 23 on page 51. 2030 Build volumes are shown in Figure 33, on page 69.

A. ATRISCO VISTA AND CENTRAL

Atrisco Vista and Central is currently an existing all-way stop controlled intersection.

1. EXISTING

Under existing conditions with all-way stop control, the intersection was analyzed with each leg having a single dedicated left, single thru lane, and one shared thru/right lane. This was done due to the HCM methodology not allowing the full approach lanes that exist to be analyzed using an all-way stop condition.

The intersection operates at acceptable levels of service with LOS B in the AM and LOS C in the PM. The intersection output for the existing conditions all-way stop controlled analysis is included in Appendix E. The results are summarized below in Table 5.

Table 5 – Atrisco Vista and Central 2019 Existing Unsignalized Intersection Results								
Intersection/Movement	2019 AM Peak				2019 PM Peak			
	Delay	v/c	Queue* (ft)	LOS	Delay	v/c	Queue* (ft)	LOS
Atrisco Vista and Central	12.6	-	-	B	17.3	-	-	C
EB Left	12.9	0.17	25	B	13.7	0.17	25	B
EB Thru	10.9	0.03	25	B	11.8	0.05	25	B
EB Right	10.5	0.03	25	B	11.4	0.07	25	B
WB Left	11.2	0.06	25	B	13.5	0.23	25	B
WB Thru	10.6	0.05	25	B	10.8	0.04	25	B
WB Right	14.2	0.42	50	B	20	0.59	100	C
NB Left	10.4	0.04	25	B	11.3	0.02	25	B
NB Thru	12.7	0.32	50	B	13.2	0.24	25	B
NB Right	12.6	0.36	50	B	13.5	0.31	50	B
SB Left	12.9	0.27	50	B	25.3	0.67	125	D
SB Approach	11.6	0.21	25	B	13	0.28	50	B
* – HCM 95th percentile queue rounded to next 25-foot increment								

2. 2022 NO BUILD

The intersection is expected to operate at acceptable levels of service in the 2022 No Build scenario with LOS B in the AM and LOS C in the PM peak hour. The intersection output for the 2022 No Build analysis is included in Appendix F. The results are summarized below in Table 6.

Table 6 – Atrisco Vista and Central 2022 No Build Unsignalized Intersection Results								
Intersection/Movement	2022 No Build AM Peak				2022 No Build PM Peak			
	Delay	v/c	Queue* (ft)	LOS	Delay	v/c	Queue* (ft)	LOS
Atrisco Vista and Central	13.1	-	-	B	18.9	-	-	C
EB Left	13.4	0.19	25	B	14.2	0.19	25	B
EB Thru	11.2	0.03	25	B	12.1	0.06	25	B
EB Right	10.8	0.04	25	B	11.8	0.07	25	B
WB Left	11.5	0.07	25	B	14.1	0.25	25	B
WB Thru	0.09	0.09	25	B	11.2	0.05	25	B
WB Right	14.7	0.42	75	B	21.9	0.63	125	C
NB Left	10.6	0.04	25	B	11.6	0.02	25	B
NB Thru	13.5	0.35	50	B	13.8	0.26	25	B
NB Right	13.5	0.39	50	B	14.3	0.34	50	B
SB Left	13.5	0.29	50	B	29.4	0.72	150	D
SB Approach	12.1	0.23	25	B	13.7	0.30	50	B
* – HCM 95th percentile queue rounded to next 25-foot increment								

3. 2022 BUILD

The intersection is expected to operate at acceptable levels of service in the 2022 Build scenario with LOS B in the AM and LOS C in the PM, although the southbound left is forecast to operate at LOS E in the PM peak hour. The intersection output for the 2022 Build analysis is included in Appendix G. The results are summarized below in Table 7.

For ease of reading the Phase 1 2022 Build site plan is repeated on the following page.

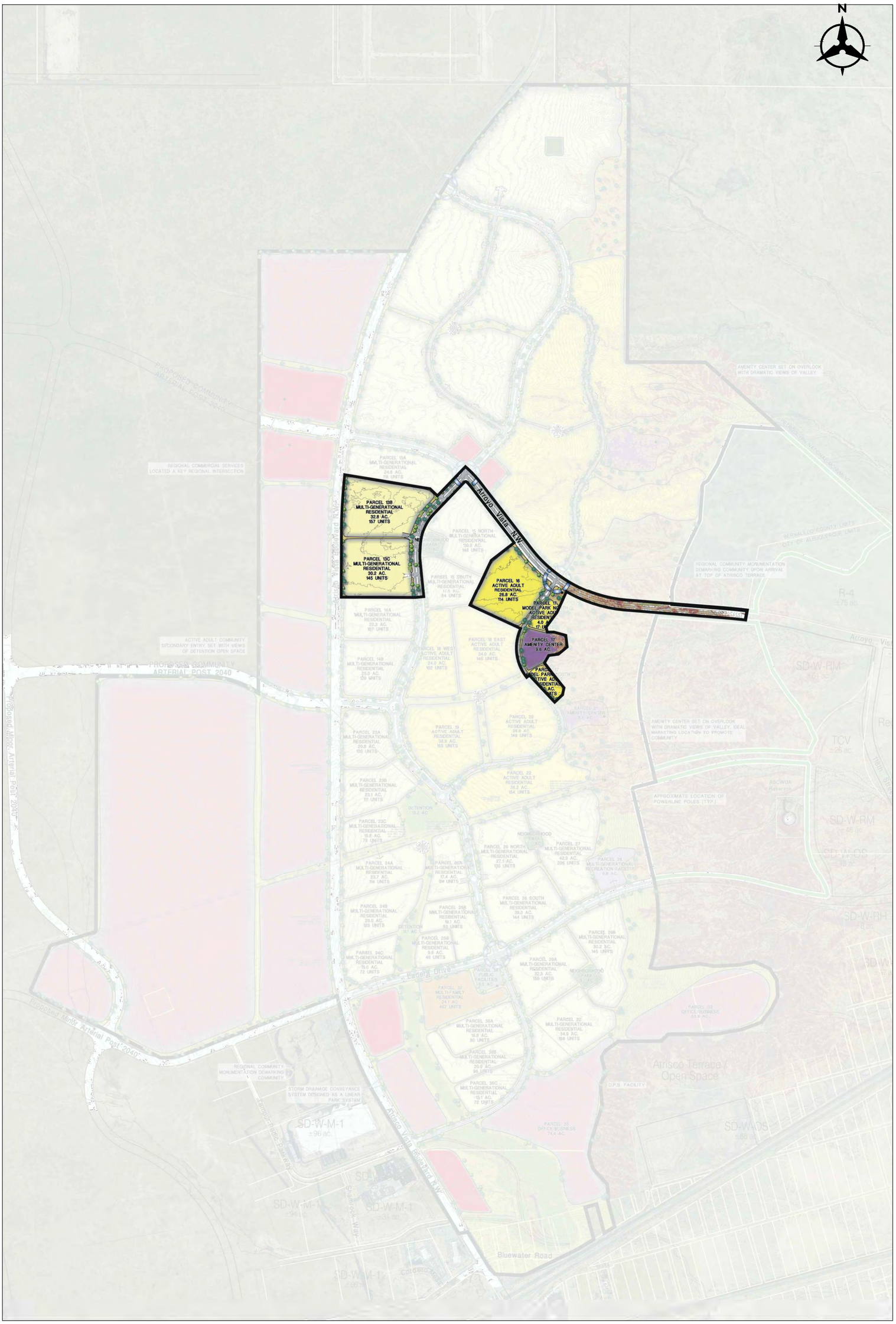

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FIGURE 34
PHASE I SITE PLAN

Table 7 – Atrisco Vista and Central 2022 Build Unsignalized Intersection Results								
Intersection/Movement	2022 Build AM Peak				2022 Build PM Peak			
	Delay	v/c	Queue* (ft)	LOS	Delay	v/c	Queue* (ft)	LOS
Atrisco Vista and Central	13.4	-	-	B	19.9	-	-	C
EB Left	13.5	0.19	25	B	14.4	0.19	25	B
EB Thru	11.3	0.03	25	B	12.2	0.06	25	B
EB Right	10.9	0.04	25	B	11.9	0.07	25	B
WB Left	11.6	0.07	25	B	14.2	0.25	25	B
WB Thru	11.2	0.09	25	B	11.3	0.05	25	B
WB Right	15.3	0.44	25	C	22.8	0.65	125	C
NB Left	10.7	0.04	25	B	11.7	0.02	25	B
NB Thru	13.7	0.36	50	B	14.1	0.28	50	B
NB Right	13.7	0.39	50	B	14.6	0.34	50	B
SB Left	13.7	0.29	50	B	32.1	0.75	175	D
SB Approach	12.3	0.24	25	B	13.9	0.31	50	B
* – HCM 95th percentile queue rounded to next 25-foot increment								

4. 2025 NO BUILD

The intersection is expected to operate at acceptable levels of service in the 2025 No Build scenario with LOS B in the AM and LOS C in the PM. The intersection output for the 2025 No Build analysis is included in Appendix H. The results are summarized below in Table 8.

Table 8 – Atrisco Vista and Central 2025 No Build Unsignalized Intersection Results								
Intersection/Movement	2025 No Build AM Peak				2025 No Build PM Peak			
	Delay	v/c	Queue* (ft)	LOS	Delay	v/c	Queue* (ft)	LOS
Atrisco Vista and Central	14	-	-	B	21.7	-	-	C
EB Left	13.9	0.20	25	B	14.8	020	25	B
EB Thru	11.4	0.04	25	B	12.5	0.06	25	B
EB Right	11.0	0.04	25	B	12.2	0.08	25	B
WB Left	11.8	0.08	25	B	14.7	0.27	25	B
WB Thru	11.1	0.06	25	B	11.3	0.04	25	B
WB Right	16.6	0.49	75	C	26.6	0.70	100	C
NB Left	10.8	0.05	25	B	11.8	0.02	25	B
NB Thru	14.2	0.38	50	B	14.5	0.29	50	B
NB Right	14.4	0.42	75	B	15.3	0.37	50	C
SB Left	14.1	0.31	50	B	35.2	0.78	175	E
SB Approach	12.6	0.25	25	B	14.4	0.33	50	B
* – HCM 95th percentile queue rounded to next 25-foot increment								

5. 2025 BUILD

The intersection is expected to operate at acceptable levels of service in the AM. However, the southbound left and westbound right movements will begin to fail in the PM peak hour. The intersection output for the 2025 Build scenario is included in Appendix I.

The intersection was evaluated for a warranted traffic signal based on peak hour volumes and delay. The intersection is warranted for warrant 3A but only warrants a signal for the PM peak hour with warrant 3B therefore the traffic signal is warranted in the 2025 Build scenario. The signal warrant results are also included in Appendix I.

Table 9 – Atrisco Vista and Central
2025 Build Unsignalized Intersection Results

Intersection/Movement	2025 Build AM Peak				2025 Build PM Peak			
	Delay	v/c	Queue* (ft)	LOS	Delay	v/c	Queue* (ft)	LOS
Atrisco Vista and Central	16.9	-	-	C	45.6	-	-	E
EB Left	14.9	0.22	25	B	16.3	0.22	25	C
EB Thru	12.1	0.04	25	B	13.5	0.07	25	B
EB Right	11.7	0.04	25	B	13.3	0.08	25	B
WB Left	12.3	0.08	25	B	15.7	0.28	25	C
WB Thru	11.6	0.07	25	B	11.9	0.04	25	B
WB Right	22.1	0.62	125	C	65.6	0.97	325	F
NB Left	11.4	0.05	25	B	12.7	0.02	25	B
NB Thru	15.9	0.42	50	C	16.8	0.34	50	C
NB Right	16.2	0.46	75	C	16.8	0.34	50	C
SB Left	19.2	0.51	75	C	86.1	1.02	300	F
SB Approach	13.5	0.28	50	B	16.2	0.38	50	C

* – HCM 95th percentile queue rounded to next 25-foot increment

A single period signalized analysis was completed for the 2025 Build scenario (Phases 1-3). The signalized analysis allows consideration of all existing lanes. The intersection is expected to operate at an overall acceptable level of service in the AM and PM peak hours. The volume to capacity values calculated were less than one (1.0), which confirms the intersection is not over capacity. Intersection output for the 2025 Build analysis is included in Appendix I. The results are summarized in Table 10.

The site plan for Phases 1-3, 2025 Build is repeated on the following page.

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FIGURE 35
PHASE I - III SITE PLAN

Table 10 – Atrisco Vista and Central 2025 Build Signalized Intersection Capacity Analysis Result						
Signalized Intersections	2025 Build AM Peak			2025 Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Atrisco Vista and Central	14.6	0.34	B	16.7	0.58	B

6. 2030 NO BUILD

Under 2030 No Build with signalized control, the intersection was analyzed using the existing approach lanes. As the intersection warranted a signal in 2025 Build, the 2030 No Build analysis also considered it signalized for analysis purposes.

A single period analysis was completed for the 2030 No Build scenario (Phases 1-7). The intersection is expected to operate at an overall acceptable level of service in the AM and PM peak hours. The volume to capacity values calculated were less than one (1.0), which confirms the intersection is not over capacity.

Intersection output for the 2030 No Build analysis is included in Appendix J. The results are summarized in Table 11.

Table 11 – Atrisco Vista and Central 2030 No Build Signalized Intersection Capacity Analysis Result						
Signalized Intersections	2030 No Build AM Peak			2030 No Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Atrisco Vista and Central	14.5	0.27	B	16.0	0.49	B

7. 2030 BUILD

Under 2030 build with signalized control, the intersection was analyzed using the existing approach lanes. The Phase 1-7, 2030 Build site plan is shown on the next page.

A single period analysis was completed for the 2030 Build scenario (Phases 1-7). The intersection is expected to operate at an overall acceptable level of service in the AM and PM peak hours. The volume to capacity values calculated were less than one (1.0), which confirms the intersection is not over capacity.

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ALBUQUERQUE, NEW MEXICO

FIGURE 36
PHASE I - VII SITE PLAN

Intersection output for the 2030 Build analysis is included in Appendix K. The results are summarized in Table 12.

Table 12 – Atrisco Vista and Central
2030 Build Signalized Intersection Capacity Analysis Result

Signalized Intersections	2030 Build AM Peak			2030 Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Atrisco Vista and Central	17.7	0.60	B	23.9	0.90	C

B. ALTERNATIVE INTERSECTION DESIGN CONSIDERATIONS

It is understood that signalized intersections should not be the default solution for intersections that have more volume than can be accommodated with two-way or all-way stop control. However, the intersection of Central and Atrisco Vista has characteristics that make other alternatives, such as a roundabout, median U-turn (MUT), restricted crossing U-turn (RCUT), or displaced left-turn (DLT) intersection designs undesirable. This is due to the relatively high number of large vehicles (City of Albuquerque garbage trucks destined to the Cerro Colorado landfill) and semi-trucks (destined to the Love's truck stop and repair facilities in the area) that are present (13% – 28% in the AM, Noon and PM peak hours).

These large vehicles, and the frequency they are present, would present challenges and possible safety concerns with the U-turn alternative intersection designs. The close proximity of the I-40 Eastbound ramp and Love's Truck Stop, as well as right-of-way constraints, also limits the viability of the displaced left turn alternative design as well.

A roundabout at this location is also problematic at Atrisco and Central due to the heavy truck traffic and the impact that would have truck tracking through the roundabout. Although that may be able to be overcome in design, it would severely limit the likelihood of progression from Central through the interchange.

The above concerns also pose the same challenge at the Atrisco Vista and North Frontage Road intersection north of the interchange, as that intersection is also in close proximity to the I-40 Westbound Ramp. However, that intersection (the North Frontage Road) does not have high numbers of City of Albuquerque garbage trucks and also has a lower truck volume, 6% – 20% in the AM, Noon, and PM peak hours.

The other intersections along Atrisco Vista to be discussed shortly could be considered for alternative intersection designs as development proceeds, although again,

the lands to the west of Atrisco Vista is zoned for industrial, manufacturing, and warehouse uses that will need to be considered in any design.

C. ATRISCO VISTA AND I-40 EASTBOUND RAMPS

Atrisco Vista and I-40 Eastbound Ramp is an existing unsignalized two-way stop-controlled intersection.

1. EXISTING

Under existing conditions with two-way stop control, the intersection was analyzed using existing approach lanes.

The existing intersection operates at acceptable levels of service with LOS A in both the AM and PM peak hours. The intersection output for the existing conditions analysis is included in Appendix E. The results are summarized below in Table 13.

Table 13 – Atrisco Vista and EB Ramps
2019 Existing Unsignalized Intersection Results

Intersection/Movement	2019 AM Peak				2019 PM Peak			
	Delay	v/c	Queue* (ft)	LOS	Delay	v/c	Queue* (ft)	LOS
Atrisco Vista and EB Ramps	1.4	-	-	A	4.1	-	-	A
EB Thru/Left	14.7	0.04	25	B	30.3	0.33	50	D
EB Right	9.9	0.07	25	A	10.7	0.18	25	B
SB Left	9	0.06	25	A	9.3	0.17	25	A

* – HCM 95th percentile queue rounded to next 25-foot increment

2. 2022 NO BUILD

The intersection operates at acceptable levels of service with LOS A in both the AM and PM peak hours in the 2022 No Build scenario, though the eastbound shared through/left is expected to operate at LOS E in the PM peak hour. The intersection output for the 2022 No Build scenario with two-way stop-control is included in Appendix F. The results are summarized below in Table 14.

Table 14 – Atrisco Vista and EB Ramps 2022 No Build Existing Unsignalized Intersection Results								
Intersection/Movement	2022 No Build AM Peak				2022 No Build PM Peak			
	Delay	v/c	Queue* (ft)	LOS	Delay	v/c	Queue* (ft)	LOS
Atrisco Vista and EB Ramps	1.4	-	-	A	4.5	-	-	A
EB Thru/Left	15.3	0.05	25	C	35.1	0.39	50	E
EB Right	10	0.08	25	B	10.9	0.20	25	B
SB Left	9.1	0.07	25	A	9.4	0.19	25	A
* – HCM 95th percentile queue rounded to next 25-foot increment								

3. 2022 BUILD

The intersection operates at an overall acceptable level of service with LOS A in both the AM and PM peak hours in the 2022 Build scenario, though the eastbound shared thru/left movement is expected to operate at LOS E in the PM peak hour. The intersection output for the 2022 Build scenario with two-way stop-control is included in Appendix G. The results are summarized below in Table 15.

Table 15 – Atrisco Vista and EB Ramps 2022 Build Existing Unsignalized Intersection Results								
Intersection/Movement	2022 Build AM Peak				2022 Build PM Peak			
	Delay	v/c	Queue* (ft)	LOS	Delay	v/c	Queue* (ft)	LOS
Atrisco Vista and EB Ramps	1.4	-	-	A	5	-	-	A
EB Thru/Left	15.6	0.05	25	C	43.5	0.45	50	E
EB Right	10	0.08	25	B	11	0.20	25	B
SB Left	9.2	0.08	25	A	9.6	0.22	25	A
* – HCM 95th percentile queue rounded to next 25-foot increment								

4. 2025 NO BUILD

The intersection operates at acceptable levels of service with LOS A in both the AM and PM peak hours in the 2025 No Build scenario. The intersection output for the 2025 No Build scenario with two-way stop-control is included in Appendix H. The results are summarized below in Table 16.

Table 16 – Atrisco Vista and EB Ramps 2025 No Build Existing Unsignalized Intersection Results								
Intersection/Movement	2025 No Build AM Peak				2025 No Build PM Peak			
	Delay	v/c	Queue* (ft)	LOS	Delay	v/c	Queue* (ft)	LOS
Atrisco Vista and EB Ramps	1.4	-	-	A	4.8	-	-	A
EB Thru/Left	15.9	0.05	25	C	41.3	0.45	50	E
EB Right	10.1	0.08	25	B	11.1	0.21	25	B
SB Left	9.2	0.07	25	A	9.6	0.2	25	A
* – HCM 95th percentile queue rounded to next 25-foot increment								

5. 2025 BUILD

The intersection operates at acceptable levels of service with LOS A in both the AM and PM peak hours in the 2025 Build scenario. The intersection output for the 2025 Build scenario with two-way stop-control is included in Appendix I. The results are summarized below in Table 17.

Table 17 – Atrisco Vista and EB Ramps 2025 Build Existing Unsignalized Intersection Results								
Intersection/Movement	2025 Build AM Peak				2025 Build PM Peak			
	Delay	v/c	Queue* (ft)	LOS	Delay	v/c	Queue* (ft)	LOS
Atrisco Vista and EB Ramps	2.4	-	-	A	15.2	-	-	C
EB Thru/Left	30.5	0.12	25	D	255	1.15	175	F
EB Right	10.5	0.09	25	B	11.7	0.23	25	B
SB Left	10.3	0.22	25	B	11.5	0.37	50	B
* – HCM 95th percentile queue rounded to next 25-foot increment								

The intersection was evaluated for a warranted traffic signal based on peak hour volumes and delay. The intersection is warranted in the PM for both warrants 3A and 3B but only warrants 3B in the AM peak hour. The traffic signal is warranted in the 2025 Build scenario. The signal warrant results are included in Appendix I.

A single period analysis was completed for the 2025 Build scenario (Phases 1-3). The intersection is expected to operate at an overall acceptable level of service in the AM and PM peak hours with movements of LOS E in both peak hours. The volume to capacity values calculated were less than one (1.0), which confirms the intersection is not over capacity.

Intersection output for the 2025 Build analysis is included in Appendix I. The results are summarized in Table 18.

Table 18 – Atrisco Vista and EB Ramps 2025 Build Signalized Intersection Capacity Analysis Result						
Signalized Intersections	2025 Build AM Peak			2025 Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Atrisco Vista and EB Ramps	8.1	0.646	A	13.4	0.769	B

6. 2030 NO BUILD

Under 2030 No Build with signalized control, the intersection was analyzed using existing approach lanes.

A single period analysis was completed for the 2030 No Build scenario (Phases 1-7). The intersection is expected to operate at an overall acceptable level of service in the AM and PM peak hours with movements of LOS E in both peak hours. The volume to capacity values calculated were less than one (1.0), which confirms the intersection is not over capacity.

Intersection output for the 2030 No Build analysis is included in Appendix J. The results are summarized in Table 19.

Table 19 – Atrisco Vista and EB Ramps 2030 No Build Signalized Intersection Capacity Analysis Result						
Signalized Intersections	2030 No Build AM Peak			2030 No Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Atrisco Vista and EB Ramps	7.1	0.637	A	12.3	0.841	B

7. 2030 BUILD

A single period analysis was completed for the 2030 Build scenario (Phases 1-7) using existing approach lanes.

The intersection is expected to operate at an overall acceptable level of service in the AM and PM peak hours with movements of LOS E in both peak hours. The volume to capacity values calculated were less than one (1.0), which confirms the intersection is not over capacity.

Intersection output for the 2030 Build analysis is included in Appendix K. The results are summarized in Table 20.

A single period analysis was also completed with the addition of dual southbound left turn lanes, since the roadway has adequate room for this expansion with no roadway geometric changes.

The intersection is expected to operate at an overall acceptable level of service in the AM and PM peak hours with movements of LOS E in both peak hours. The volume to capacity values calculated were less than one (1.0), which confirms the intersection is not over capacity.

Intersection output for the 2030 Build analysis with dual southbound left turn lanes is included in Appendix K. The results are summarized in Table 20.

Table 20 – Atrisco Vista and EB Ramps
2030 Build Signalized Intersection Capacity Analysis Result

Signalized Intersections	2030 Build AM Peak			2030 Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Atrisco Vista and EB Ramps	27.1	0.978	C*	35.6	0.975	D*
Atrisco Vista and EB Ramps (with dual SBL)	6.0	0.753	A*	13.8	0.865	B*
*Movement LOS E						

D. ATRISCO VISTA AND I-40 WESTBOUND RAMPS

Atrisco Vista and WB Ramp is an existing unsignalized two-way stop-controlled intersection.

1. EXISTING

Under existing conditions with two-way stop control, the intersection was analyzed using existing approach lanes.

The existing intersection operates at acceptable levels of service with LOS A in the AM, however due to the westbound approach high delay and LOS F, the intersection operates at LOS F in the PM peak hour. The intersection output for the existing conditions analysis is included in Appendix E. The results are summarized below in Table 21.

The intersection was evaluated for a warranted traffic signal based on peak hour volumes and delay. This evaluation showed that only the PM peak hour satisfied the Peak Hour Volume signal warrant

Table 21 – Atrisco Vista and WB Ramps 2019 Existing Unsignalized Intersection Results								
Intersection/Movement	2019 AM Peak				2019 PM Peak			
	Delay	v/c	Queue* (ft)	LOS	Delay	v/c	Queue* (ft)	LOS
Atrisco Vista and WB Ramps	7.3	-	-	A	12.8	-	-	B
NB Left	8.1	0.07	25	A	8.7	0.15	25	A
WB Thru/Left	18.4	0.44	75	C	53.1	0.79	175	F
WB Right	9.6	0.14	25	A	9.6	0.12	25	A
* – HCM 95th percentile queue rounded to next 25-foot increment								

2. 2022 NO BUILD

The intersection operates at acceptable levels of service in both the AM and PM peak hours in the 2022 No Build scenario however the westbound thru/left movement is expected to fail with LOS F in the PM peak hour. The intersection output for the 2022 No Build scenario with two-way stop-control is included in Appendix F. The results are summarized below in Table 22.

The intersection was evaluated for a warranted traffic signal based on peak hour volumes and delay. As in existing conditions, this evaluation showed that only the PM peak hour satisfied the Peak Hour Volume signal warrant. This peak hour signal warrant is also included in Appendix F.

Table 22 – Atrisco Vista and WB Ramps 2022 No Build Existing Unsignalized Intersection Results								
Intersection/Movement	2022 No Build AM Peak				2022 No Build PM Peak			
	Delay	v/c	Queue* (ft)	LOS	Delay	v/c	Queue* (ft)	LOS
Atrisco Vista and WB Ramps	7.8	-	-	A	16.7	-	-	C
NB Left	8.1	0.07	25	A	8.8	0.16	25	A
WB Thru/Left	20.1	0.48	75	C	72.3	0.89	200	F
WB Right	9.7	0.15	25	A	9.7	0.12	25	A
* – HCM 95th percentile queue rounded to next 25-foot increment								

3. 2022 BUILD

Under 2022 Build conditions with two-way stop control, the intersection was analyzed using existing approach lanes.

The intersection is expected to operate at overall acceptable levels of service in the AM and PM peak hours however, the westbound thru/left movement will continue to fail in the PM peak hour. The intersection output is included in Appendix G.

The intersection was evaluated for a warranted traffic signal based on peak hour volumes and delay. The intersection is warranted for warrant 3A but only warrants a signal for the PM peak hour with warrant 3B. A traffic signal is warranted in the 2022 Build scenario. The signal warrant results are included in Appendix G.

Table 23 – Atrisco Vista and WB Ramps
2022 Build Existing Unsignalized Intersection Results

Intersection/Movement	2022 Build AM Peak				2022 Build PM Peak			
	Delay	v/c	Queue* (ft)	LOS	Delay	v/c	Queue* (ft)	LOS
Atrisco Vista and WB Ramps	8	-	-	A	18.7	-	-	B
NB Left	8.1	0.07	25	A	9	0.16	25	A
WB Thru/Left	21.1	0.51	75	C	85.5	0.94	225	F
WB Right	9.9	0.18	25	A	9.7	0.13	25	A

* – HCM 95th percentile queue rounded to next 25-foot increment

A single period analysis was completed for the 2022 Build scenario (Phases 1-3) using existing approach lanes. The intersection is expected to operate at an overall acceptable level of service in the AM and PM peak hours. The volume to capacity values calculated were less than one (1.0), which confirms the intersection is not over capacity.

Signalized intersection output for the 2022 Build analysis is included in Appendix G. The results are summarized in Table 24.

Table 24 – Atrisco Vista and WB Ramps
2022 Build Signalized Intersection Capacity Analysis Result

Signalized Intersections	2022 Build AM Peak			2022 Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Atrisco Vista and WB Ramps	19.5	0.471	B	16.3	0.467	B

4. 2025 NO BUILD

A single period analysis was completed for the 2025 No Build scenario (Phases 1-3) using existing approach lanes. The intersection is expected to operate at an acceptable

level of service in the AM and PM peak hours. The volume to capacity values calculated were less than one (1.0), which confirms the intersection is not over capacity.

Intersection output for the 2025 No Build analysis is included in Appendix H. The results are summarized in Table 25.

Table 25 – Atrisco Vista and WB Ramps
2025 No Build Signalized Intersection Capacity Analysis Result

Signalized Intersections	2025 No Build AM Peak			2025 No Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Atrisco Vista and WB Ramps	20.0	0.498	C	17.4	0.493	B

5. 2025 BUILD

A single period analysis was completed for the 2025 Build scenario (Phases 1-3) using existing approach lanes. The intersection is expected to operate at an acceptable level of service in the AM and PM peak hours. The volume to capacity values calculated were less than one (1.0), which confirms the intersection is not over capacity.

Intersection output for the 2025 Build analysis is included in Appendix I. The results are summarized in Table 26.

Table 26 – Atrisco Vista and WB Ramps
2025 Build Signalized Intersection Capacity Analysis Result

Signalized Intersections	2025 Build AM Peak			2025 Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Atrisco Vista and WB Ramps	19.7	0.498	B	19.3	0.690	B

6. 2030 NO BUILD

A single period analysis was completed for the 2030 No Build scenario (Phases 1-7) using existing approach lanes. The intersection is expected to operate at an acceptable level of service in the AM and PM peak hours. The volume to capacity values calculated were less than one (1.0), which confirms the intersection is not over capacity.

Intersection output for the 2030 No Build analysis is included in Appendix J. The results are summarized in Table 27.

Table 27 – Atrisco Vista and WB Ramps 2030 No Build Signalized Intersection Capacity Analysis Result						
Signalized Intersections	2030 No Build AM Peak			2030 No Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Atrisco Vista and WB Ramps	20.3	0.540	C	16.9	0.425	B

7. 2030 BUILD

A single period analysis was completed for the 2030 Build scenario (Phases 1-7) using existing approach lanes. The intersection is not expected to operate at an acceptable level of service in the AM or PM peak hours with LOS E in the AM and LOS F in the PM peak hour. The volume to capacity values calculated were greater than one (1.0), which shows that the intersection is over capacity in the westbound right lane.

Intersection output for the 2030 Build analysis is included in Appendix K. The results are summarized in Table 28.

To improve the intersection, lane configuration changes were made to the intersection to improve delay and intersection performance. A westbound triple dedicated right turn was analyzed as part of this scenario which improved the overall delay of the intersection.

A single period analysis was also completed using the updated lane configurations with the westbound dedicated triple right. The intersection is expected to operate at an overall acceptable level of service in the AM and PM peak hour with movements LOS E in the PM peak hour. The volume to capacity values calculated were less than one (1.0), which shows that this intersection configuration will not be over capacity.

Intersection output for 2030 Build conditions analysis with westbound triple right is included in Appendix K. The results are summarized in Table 27.

Table 28 – Atrisco Vista and WB Ramps 2030 Build Signalized Intersection Capacity Analysis Result						
Signalized Intersections	2030 Build AM Peak			2030 Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Atrisco Vista and WB Ramps	67.7	1.289	E**	290.3	2.636	F**
Atrisco Vista and WB Ramps (Triple Right westbound)	28.4	0.842	C	37.9	0.934	D
*Movement of LOS E **Movements of LOS F						

E. ATRISCO VISTA AND FRONTAGE

Atrisco Vista and the Frontage is an existing unsignalized two-way stop-controlled intersection.

1. EXISTING

Under Existing scenario with two-way stop control, the intersection was analyzed with existing approach lanes.

The intersection operates at acceptable levels of service with LOS A in the AM and PM peak hours. The intersection output for the existing conditions analysis is included in Appendix E. The results are summarized below in Table 29.

Table 29 – Atrisco Vista and Frontage 2019 Existing Unsignalized Intersection Results								
Intersection/Movement	2019 AM Peak				2019 PM Peak			
	Delay	v/c	Queue* (ft)	LOS	Delay	v/c	Queue* (ft)	LOS
Atrisco Vista and Frontage	2.4	-	-	A	3.7	-	-	A
NB Left	8	0.09	25	A	8	0.08	25	A
EB Approach	9.7	0.06	25	A	11.4	0.24	25	B
* – HCM 95th percentile queue rounded to next 25-foot increment								

2. 2022 NO BUILD

Under 2022 No Build scenario with two-way stop control, the intersection was analyzed with existing approach lanes.

The intersection is expected to operate at acceptable levels of service in the 2022 No Build scenario with LOS A in the AM and PM peak hours. The intersection output for the

2022 No Build analysis is included in Appendix F. The results are summarized below in Table 30.

Table 30 – Atrisco Vista and Frontage
2022 No Build Unsignalized Intersection Results

Intersection/Movement	2022 No Build AM Peak				2022 No Build PM Peak			
	Delay	v/c	Queue* (ft)	LOS	Delay	v/c	Queue* (ft)	LOS
Atrisco Vista and Frontage	2.4	-	-	A	3.8	-	-	A
NB Left	8.1	0.09	25	A	8.1	0.09	25	A
EB Approach	9.8	0.07	25	A	11.7	0.26	50	B
* – HCM 95th percentile queue rounded to next 25-foot increment								

3. 2022 BUILD

Under 2022 Build scenario with two-way stop control, the intersection was analyzed with existing approach lanes.

The intersection is expected to operate at acceptable levels of service in the 2022 Build scenario with LOS A in the AM and PM peak hours. The intersection output for the 2022 Build analysis is included in Appendix G. The results are summarized below in Table 31.

Table 31 – Atrisco Vista and Frontage
2022 Build Unsignalized Intersection Results

Intersection/Movement	2022 Build AM Peak				2022 Build PM Peak			
	Delay	v/c	Queue* (ft)	LOS	Delay	v/c	Queue* (ft)	LOS
Atrisco Vista and Frontage	2.2	-	-	A	3.7	-	-	A
NB Left	8.1	0.09	25	A	8.2	0.09	25	A
EB Approach	9.8	0.07	25	A	12.2	0.28	50	B
* – HCM 95th percentile queue rounded to next 25-foot increment								

4. 2025 NO BUILD

Under 2025 No Build scenario with two-way stop control, the intersection was analyzed with existing approach lanes.

The intersection is expected to operate at acceptable levels of service in the 2025 No Build scenario with LOS A in the AM and PM peak hours. The intersection output for the 2025 No Build analysis is included in Appendix H. The results are summarized below in Table 32.

Table 32 – Atrisco Vista and Frontage 2025 No Build Unsignalized Intersection Results								
Intersection/Movement	2025 No Build AM Peak				2025 No Build PM Peak			
	Delay	v/c	Queue* (ft)	LOS	Delay	v/c	Queue* (ft)	LOS
Atrisco Vista and Frontage	2.4	-	-	A	3.9	-	-	A
NB Left	8.1	0.10	25	A	8.1	0.09	25	A
EB Approach	9.8	0.07	25	A	12.1	0.29	50	B
* – HCM 95th percentile queue rounded to next 25-foot increment								

5. 2025 BUILD

Under 2025 Build scenario with two-way stop control, the intersection was analyzed with existing approach lanes.

The intersection is expected to operate at acceptable levels of service in the 2025 Build scenario with LOS A in the AM and PM peak hours. The intersection output for the 2025 Build analysis is included in Appendix I. The results are summarized below in Table 33.

Table 33 – Atrisco Vista and Frontage 2025 Build Unsignalized Intersection Results								
Intersection/Movement	2025 Build AM Peak				2025 Build PM Peak			
	Delay	v/c	Queue* (ft)	LOS	Delay	v/c	Queue* (ft)	LOS
Atrisco Vista and Frontage	1.7	-	-	A	3.2	-	-	A
NB Left	9	0.12	25	A	9	0.12	25	A
EB Approach	11.3	0.09	25	B	17	0.41	50	C
* – HCM 95th percentile queue rounded to next 25-foot increment								

6. 2030 NO BUILD

Under 2030 No Build scenario with two-way stop control, the intersection was analyzed with existing approach lanes.

The intersection is expected to operate at acceptable levels of service in the 2030 No Build scenario with LOS A in the AM and PM peak hours. The intersection output for the 2030 No Build analysis is included in Appendix J. The results are summarized below in Table 34.

Table 34 – Atrisco Vista and Frontage 2030 No Build Unsignalized Intersection Results								
Intersection/Movement	2030 No Build AM Peak				2030 No Build PM Peak			
	Delay	v/c	Queue* (ft)	LOS	Delay	v/c	Queue* (ft)	LOS
Atrisco Vista and Frontage	2.5	-	-	A	4	-	-	A
NB Left	8.2	0.11	25	A	8.2	0.10	25	A
EB Approach	10.1	0.08	25	B	12.7	0.32	50	B
* – HCM 95th percentile queue rounded to next 25-foot increment								

7. 2030 BUILD

Under 2030 No Build scenario with two-way stop control, the intersection was analyzed with existing approach lanes.

The intersection is expected to operate at an overall acceptable level of service in the AM, however the overall LOS in the PM in expected to degrade to LOS F. The eastbound approach is expected to fail in both the AM and PM.

The intersection was evaluated for a warranted traffic signal based on peak hour volumes and delay. The intersection is warranted for warrant 3A but only warrants a signal for the PM peak hour with warrant 3B therefore, the traffic signal is warranted in the 2030 Build scenario. The intersection output and signal warrant results are included in Appendix K.

Table 35 – Atrisco Vista and Frontage 2030 Build Unsignalized Intersection Results								
Intersection/Movement	2030 Build AM Peak				2030 Build PM Peak			
	Delay	v/c	Queue* (ft)	LOS	Delay	v/c	Queue* (ft)	LOS
Atrisco Vista and Frontage	2.6	-	-	A	62.3	-	-	F
NB Left	20.2	0.36	50	C	14.7	0.26	25	B
EB Approach	65.3	0.52	75	F	1008	2.97	550	F
* – HCM 95th percentile queue rounded to next 25-foot increment								

Under 2030 Build scenario with signalized control, the intersection was analyzed with existing approach lanes with a change to the northbound dedicated right being updated to a combination through/right for appropriate flow between the westbound off ramp and this intersection.

A single period analysis was completed for the 2030 Build scenario (Phases 1-7). The intersection is expected to operate at an overall acceptable level of service with LOS A in

the AM and LOS B in the PM. The volume to capacity values calculated were less than one (1.0), which confirms the intersection is not over capacity.

Intersection output for the 2030 Build analysis is included in Appendix K. The results are summarized in Table 36.

Table 36 – Atrisco Vista and Frontage
2030 Build Signalized Intersection Capacity Analysis Result

Signalized Intersections	2030 Build AM Peak			2030 Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Atrisco Vista and Frontage	9.5	0.658	A	11.1	0.874	B

In order to accept the westbound triple left from the I-40 Westbound Ramp analysis described in Section V.D.7 would require widening of Atrisco Vista that was not included in the above analysis. As the development proceeds, and future traffic studies are prepared, the need for improvements will continually be refined.

F. ATRISCO VISTA AND COMFORT WAY

Atrisco Vista and Comfort Way is an existing unsignalized two-way stop-controlled T-intersection.

1. EXISTING

Under existing scenario with two-way stop control, the intersection was analyzed using the existing approach lanes.

The intersection operates at acceptable levels of service with LOS A in the AM and PM peak hours. The intersection output for the existing conditions analysis is included in Appendix E. The results are summarized below in Table 37.

Table 37 – Atrisco Vista and Comfort Way 2019 Existing Unsignalized Intersection Results								
Intersection/Movement	2019 AM Peak				2019 PM Peak			
	Delay	v/c	Queue* (ft)	LOS	Delay	v/c	Queue* (ft)	LOS
Atrisco Vista and Tempur Pedic	2	-	-	A	3.9	-	-	A
EB Left	13.7	0.01	25	A	12.4	0.06	25	B
EB Right	10.3	0.04	25	A	9.7	0.18	25	A
NB Left	8	0.07	25	A	7.6	0.04	25	A
* – HCM 95th percentile queue rounded to next 25-foot increment								

2. 2022 NO BUILD

The intersection is expected to operate at acceptable levels of service in the 2022 No Build scenario with LOS A in the AM and PM peak hours. The intersection output for the 2022 No Build analysis is included in Appendix F. The results are summarized below in Table 38.

Table 38 – Atrisco Vista and Comfort Way 2022 No Build Unsignalized Intersection Results								
Intersection/Movement	2022 No Build AM Peak				2022 No Build PM Peak			
	Delay	v/c	Queue* (ft)	LOS	Delay	v/c	Queue* (ft)	LOS
Atrisco Vista and Comfort Way	2	-	-	A	3.9	-	-	A
EB Left	14	0.01	25	A	12.7	0.07	25	B
EB Right	10.4	0.04	25	A	9.8	0.19	25	A
NB Left	8.1	0.07	25	A	7.6	0.04	25	A
* – HCM 95th percentile queue rounded to next 25-foot increment								

3. 2022 BUILD

In 2022 Build Comfort Way does not serve the development.

The intersection is expected to operate at acceptable levels of service in the 2022 Build scenario with LOS A in the AM and LOS B in the PM. The intersection output for the 2022 Build analysis is included in Appendix G. The results are summarized below in Table 39.

Table 39 – Atrisco Vista and Comfort Way 2022 Build Unsignalized Intersection Results								
Intersection/Movement	2022 Build AM Peak				2022 Build PM Peak			
	Delay	v/c	Queue* (ft)	LOS	Delay	v/c	Queue* (ft)	LOS
Atrisco Vista and Comfort Way	2.6	-	-	A	4.6	-	-	B
EB Left	15.7	0.01	0	C	13.2	0.08	25	B
EB Right	10.5	0.05	25	B	10.2	0.24	25	B
NB Left	8.2	0.10	25	A	7.6	0.05	25	A
* – HCM 95th percentile queue rounded to next 25-foot increment								

4. 2025 NO BUILD

Under 2025 No Build scenario with two-way stop control, the intersection was analyzed using the existing approach lanes.

The intersection is expected to operate at acceptable levels of service in the 2025 No Build scenario with LOS A in the AM and PM peak hours. The intersection output for the 2025 No Build analysis is included in Appendix H. The results are summarized below in Table 40.

Table 40 – Atrisco Vista and Comfort Way 2025 No Build Unsignalized Intersection Results								
Intersection/Movement	2025 No Build AM Peak				2025 No Build PM Peak			
	Delay	v/c	Queue* (ft)	LOS	Delay	v/c	Queue* (ft)	LOS
Atrisco Vista and Comfort Way	2	-	-	A	4	-	-	A
EB Left	14.4	0.01	25	B	13	0.07	25	B
EB Right	10.5	0.04	25	B	9.9	0.22	25	A
NB Left	8.1	0.07	25	A	7.6	0.05	25	A
* – HCM 95th percentile queue rounded to next 25-foot increment								

5. 2025 BUILD

In 2025 Build Comfort Way does not serve the development.

The intersection is expected to operate at acceptable levels of service in the 2025 Build scenario with LOS A in the AM and LOS B in the PM. The intersection output for the 2025 Build analysis is included in Appendix I. The results are summarized below in Table 41.

Table 41 – Atrisco Vista and Comfort Way 2025 Build Unsignalized Intersection Results								
Intersection/Movement	2025 Build AM Peak				2025 Build PM Peak			
	Delay	v/c	Queue* (ft)	LOS	Delay	v/c	Queue* (ft)	LOS
Atrisco Vista and Comfort Way	2.3	-	-	A	4.4	-	-	A
EB Left	25.9	0.03	25	D	27.2	0.29	50	D
EB Right	13.1	0.08	25	B	12.9	0.36	50	B
NB Left	9.3	0.16	25	A	8.2	0.07	25	A
* – HCM 95th percentile queue rounded to next 25-foot increment								

6. 2030 NO BUILD

The intersection is expected to operate at acceptable levels of service in the 2030 No Build scenario with LOS A in the AM and PM peak hours. The intersection output for the 2030 No Build analysis is included in Appendix J. The results are summarized below in Table 42.

Table 42 – Atrisco Vista and Comfort Way 2030 No Build Unsignalized Intersection Results								
Intersection/Movement	2030 No Build AM Peak				2030 No Build PM Peak			
	Delay	v/c	Queue* (ft)	LOS	Delay	v/c	Queue* (ft)	LOS
Atrisco Vista and Comfort Way	2	-	-	A	4	-	-	A
EB Left	15.1	0.01	0	C	13.6	0.08	25	B
EB Right	10.7	0.05	25	B	10.1	0.22	25	B
NB Left	8.2	0.08	25	A	7.7	0.05	25	A
* – HCM 95th percentile queue rounded to next 25-foot increment								

7. 2030 BUILD

Under 2030 Build scenario, the intersection will consist of the existing lanes with inclusion of new lanes for the development. This includes a dedicated left turn lane with a shared thru/right lane for all northbound, southbound, eastbound, and westbound approaches.

The intersection is not expected to operate at an overall acceptable level of service in the AM or the PM peak hours with LOS F. The eastbound left and westbound left movements are expected to fail in both the AM and PM peak hours.

The intersection was evaluated for a warranted traffic signal based on peak hour volumes and delay. The intersection is warranted using both warrants 3A and 3B in both AM

and PM peak hours therefore, a traffic signal is warranted in the 2030 Build scenario. The signal warrant results are included in Appendix K.

Table 43 – Atrisco Vista and Comfort Way
2030 Build Unsignalized Intersection Results

Intersection/Movement	2030 Build AM Peak				2030 Build PM Peak			
	Delay	v/c	Queue* (ft)	LOS	Delay	v/c	Queue* (ft)	LOS
Atrisco Vista and Comfort Way	1512	-	-	F	746.2	-	-	F
EB Left	578	0.77	50	F	888	2.43	250	F
EB Approach	41.5	0.34	50	E	20.7	0.60	100	C
WB Left	2142	26.6	1050	F	12316	26.4	725	F
WB Approach	11.3	0.02	0	B	15.8	0.02	0	C
SB Left	8.7	0.01	0	A	17.4	0.03	25	C
NB Left	18.9	0.46	75	C	10.6	0.14	25	B
* – HCM 95th percentile queue rounded to next 25-foot increment								

A single period analysis was completed for the 2030 Build scenario (Phases 1-7) using the approach lanes as described above. The intersection is expected to operate at an overall acceptable level of service, however the westbound left and eastbound through movements are expected to operate at LOS E in the PM. The volume to capacity values calculated were less than one (1.0), which confirms the intersection is not over capacity.

Intersection output for the 2030 Build analysis is included in Appendix K. The results are summarized in Table 44.

Table 44 – Atrisco Vista and Comfort Way
2030 Build Signalized Intersection Capacity Analysis Result

Signalized Intersections	2030 Build AM Peak			2030 Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Atrisco Vista and Comfort Way	20.6	0.769	C	25.5	0.89	C

G. ATRISCO VISTA AND LADERA

The intersection of Atrisco Vista and Ladera is expected to be constructed in 2030.

1. 2030 BUILD

In the 2030 Build scenario, the intersection will consist of the proposed lane configuration. This includes a dedicated left turn lane with one thru lanes for both

southbound, two thru lanes with a dedicated right turn lane northbound and one dedicated westbound left turn lane with a shared thru/right lane.

The intersection is expected to operate at an unacceptable level of service in the AM and PM peak hours with overall LOS of F. The westbound left movement is expected to fail in both the AM and PM. Intersection output for the 2030 Build scenario is included in Appendix K.

Table 45 – Atrisco Vista and Ladera
2030 Build Future Unsignalized Intersection Results

Intersection/Movement	2030 Build AM Peak				2030 Build PM Peak			
	Delay	v/c	Queue* (ft)	LOS	Delay	v/c	Queue* (ft)	LOS
Atrisco Vista and Ladera	238.9	-	-	F	89	-	-	F
SB Left	8.4	0.01	0	A	13.1	0.06	25	B
WB Left	515.2	2.08	1500	F	375.6	1.74	875	F
WB Right	8.9	0.03	25	B	9.9	0.02	25	A

* – HCM 95th percentile queue rounded to next 25-foot increment

The intersection was evaluated for a warranted traffic signal based on peak hour volumes and delay. The intersection is warranted using both warrants 3A and 3B in both AM and PM peak hours therefore, a traffic signal is warranted in the 2030 Build scenario. The signal warrant results are included in Appendix K.

A single period analysis was completed for the 2030 Build scenario (Phases 1-7). The intersection is expected to operate at an overall acceptable level of service with LOS A in the AM and LOS B in the PM. The volume to capacity values calculated were less than one (1.0), which confirms the intersection is not over capacity.

Signalized intersection output for the 2030 Build analysis is included in Appendix K. The results are summarized in Table 46.

Table 46 – Atrisco Vista and Ladera
2030 Build Signalized Intersection Capacity Analysis Result

Signalized Intersections	2030 Build AM Peak			2030 Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Atrisco Vista and Ladera	22.2	0.893	C	15.7	0.858	B

H. ARROYO VISTA AND WB RAMPS

Arroyo Vista and WB Ramps is an existing signalized intersection

1. EXISTING

A single-period analysis was completed for the existing scenario. This analysis was performed using the existing signal timing provided from the City of Albuquerque with no signal optimization performed. The existing signal timing for this intersection in included in Appendix A. The volume to capacity values calculated were all less than one, which indicates the intersection is not over capacity. The intersection is expected to operate at an overall acceptable level of service in both the AM and PM peak hours with movements of LOS E in the AM peak hour.

Intersection output for existing conditions analysis is included in Appendix E. The results are summarized in Table 47.

Table 47 – Arroyo Vista and WB Ramps
2019 Existing Signalized Intersection Capacity Analysis Result

Signalized Intersections	2019 AM Peak			2019 PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Arroyo Vista and WB I-40	18.6	0.833	B*	26.5	0.879	C
* Movements of E						

2. 2022 NO BUILD

A single period analysis was completed for the 2022 No Build scenario (Phases 1-3). This analysis was performed using the existing signal timing provided from the City of Albuquerque with no signal optimization performed. The intersection is expected to operate at an overall acceptable level of service in both the AM and PM peak hour with movements of LOS E in the AM peak hour. The volume to capacity values calculated were less than one (1.0), which indicates that the intersection is not over capacity.

The intersection output for the 2022 No Build analysis is included in Appendix F. The results are summarized below in Table 48.

Table 48 – Arroyo Vista and WB Ramps 2022 No Build Signalized Intersection Capacity Analysis Result						
Signalized Intersections	2022 No Build AM Peak			2022 No Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Arroyo Vista and WB I-40	18.9	0.838	B*	27.1	0.885	C
* Movements of E						

3. 2022 BUILD

A single period analysis was completed for the 2022 Build scenario (Phases 1-3). This analysis was performed using the existing signal timing provided from the City of Albuquerque with no signal optimization performed. The intersection is expected to operate at overall acceptable levels of service in both AM and PM peak hours with movements of LOS E in the AM peak hour. The volume to capacity values calculated were less than one (1.0), which indicates that the intersection is not over capacity.

The Intersection output for the 2022 Build analysis is included in Appendix G. The results are summarized below in Table 49.

Table 49 – Arroyo Vista and WB Ramps 2022 Build Signalized Intersection Capacity Analysis Result						
Signalized Intersections	2022 Build AM Peak			2022 Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Arroyo Vista and WB I-40	17.4	0.827	B*	25.5	0.873	C
* Movements of E						

4. 2025 NO BUILD

A single period analysis was completed for the 2025 No Build scenario (Phases 1-3). This analysis was performed using the existing signal timing provided from the City of Albuquerque with no signal optimization performed. The intersection is expected to operate at an overall acceptable level of service in both the AM and PM peak hour with some movement LOS E in AM. The volume to capacity values calculated were less than one (1.0), which indicates that the intersection is not over capacity.

The intersection output for the 2025 No Build analysis is included in Appendix H. The results are summarized below in Table 50.

Table 50 – Arroyo Vista and WB Ramps
2025 No Build Signalized Intersection Capacity Analysis Result

Signalized Intersections	2025 No Build AM Peak			2025 No Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Arroyo Vista and WB I-40	19.1	0.843	B*	28.0	0.893	C
* Movements of E						

5. 2025 BUILD

A single period analysis was completed for the 2025 Build scenario (Phases 1-3). This analysis was performed using the existing signal timing provided from the City of Albuquerque with no signal optimization performed. The intersection is expected to operate at an overall acceptable level of service in both the AM and PM peak hour with movements of LOS E in the AM peak hour. The volume to capacity values calculated were less than one (1.0), which indicates that the intersection is not over capacity.

The intersection output for the 2025 Build analysis is included in Appendix I. The results are summarized below in Table 51.

Table 51 – Arroyo Vista and WB Ramps
2025 Build Signalized Intersection Capacity Analysis Result

Signalized Intersections	2025 Build AM Peak			2025 Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Arroyo Vista and WB I-40	16.9	0.822	B*	25.8	0.872	C
* Movements of E						

6. 2030 NO BUILD

A single period analysis was completed for the 2030 No Build scenario (Phases 1-7). This analysis was performed using the existing signal timing provided from the City of Albuquerque with no signal optimization performed. The intersection is expected to operate at an overall acceptable level of service in both the AM and PM peak hours with movements

of LOS E in the AM peak hour. The volume to capacity values calculated were less than one (1.0), which indicates that the intersection is not over capacity.

The intersection output for the 2030 No Build analysis is included in Appendix J. The results are summarized below in Table 52.

Table 52 – Arroyo Vista and WB Ramps
2030 No Build Signalized Intersection Capacity Analysis Result

Signalized Intersections	2030 No Build AM Peak			2030 No Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Arroyo Vista and WB I-40	19.6	0.849	B*	30.0	0.909	C
* Movements of E						

7. 2030 BUILD

A single period analysis was completed for the 2030 Build scenario (Phases 1-7). This analysis was performed using the existing signal timing provided from the City of Albuquerque with no signal optimization performed. The intersection is expected to operate at an overall acceptable level of service in both the AM and PM peak hour with movements of LOS E in the AM peak hour. The volume to capacity values calculated were less than one (1.0), which indicates that the intersection is not over capacity.

The intersection output for the 2030 Build analysis is included in Appendix K. The results are summarized below in Table 53.

Table 53 – Arroyo Vista and WB Ramps
2030 Build Signalized Intersection Capacity Analysis Result

Signalized Intersections	2030 Build AM Peak			2030 Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Arroyo Vista and WB I-40	30.7	0.943	C*	30.5	0.899	C
* Movements of E						

I. ARROYO VISTA AND LADERA

Arroyo Vista and Ladera is an existing signalized intersection.

1. EXISTING

A single period analysis was completed for the existing traffic volumes. This analysis was performed using the existing signal timing provided from the City of Albuquerque with no signal optimization performed. The existing signal timing for this intersection in included in Appendix A. The intersection is expected to operate at an acceptable level of service in the AM and PM peak hours. The volume to capacity values calculated were less than one (1.0), which confirms the intersection is not over capacity.

Intersection output for the existing conditions analysis is included in Appendix E. The results are summarized below in Table 54.

Table 54 – Arroyo Vista and Ladera
2019 Existing Signalized Intersection Capacity Analysis Result

Signalized Intersections	2019 AM Peak			2019 PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Arroyo Vista and Ladera	8.4	0.412	A	9.0	0.393	A

2. 2022 NO BUILD

A single period analysis was completed for the 2022 No Build scenario (Phase 1). This analysis was performed using the existing signal timing provided from the City of Albuquerque with no signal optimization performed. The intersection is expected to operate at an acceptable level of service in the AM and PM peak hours. The volume to capacity values calculated were less than one (1.0), which confirms the intersection is not over capacity.

Intersection output for the 2022 No Build analysis is included in Appendix F. The results are summarized below in Table 55.

Table 55 – Arroyo Vista and Ladera
2022 No Build Signalized Intersection Capacity Analysis Result

Signalized Intersections	2022 No Build AM Peak			2022 No Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Arroyo Vista and Ladera	8.6	0.429	A	9.3	0.411	A

3. 2022 BUILD

A single period analysis was completed for the 2022 Build scenario (Phase 1). This analysis was performed using the existing signal timing provided from the City of Albuquerque with no signal optimization performed. The intersection is expected to operate at an overall acceptable level of service in both AM and PM peak hours. The volume to capacity values calculated were less than one (1.0), which confirms the intersection is not over capacity.

Intersection output for the 2022 Build analysis is included in Appendix G. The results are summarized below in Table 56.

Table 56 – Arroyo Vista and Ladera
2022 Build Signalized Intersection Capacity Analysis Result

Signalized Intersections	2022 Build AM Peak			2022 Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Arroyo Vista and Ladera	8.9	0.440	A	9.8	0.419	A

4. 2025 NO BUILD

A single period analysis was completed for the 2025 No Build scenario (Phases 1-3). This analysis was performed using the existing signal timing provided from the City of Albuquerque with no signal optimization performed. The intersection is expected to operate at an acceptable level of service in the AM and PM peak hours. The volume to capacity values calculated were less than one (1.0), which confirms the intersection is not over capacity.

Intersection output for the 2025 No Build analysis is included in Appendix H. The results are summarized below in Table 57.

Table 57 – Arroyo Vista and Ladera
2025 No Build Signalized Intersection Capacity Analysis Result

Signalized Intersections	2025 No Build AM Peak			2025 No Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Arroyo Vista and Ladera	8.8	0.445	A	9.5	0.43	A

5. 2025 BUILD

A single period analysis was completed for the 2025 Build scenario (Phases 1-3). This analysis was performed using the existing signal timing provided from the City of Albuquerque with no signal optimization performed. The intersection is expected to operate at an overall acceptable level of service in the AM and PM peak hours. The volume to capacity values calculated were less than one (1.0), which confirms the intersection is not over capacity.

Intersection output for the 2025 Build analysis is included in Appendix I. The results are summarized below in Table 58.

Table 58 – Arroyo Vista and Ladera
2025 Build Signalized Intersection Capacity Analysis Result

Signalized Intersections	2025 Build AM Peak			2025 Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Arroyo Vista and Ladera	9.8	0.470	A	10.7	0.552	B

6. 2030 NO BUILD

A single period analysis was completed for the 2030 No Build scenario (Phases 1-7). This analysis was performed using the existing signal timing provided from the City of Albuquerque with no signal optimization performed. The intersection is expected to operate at an acceptable level of service in the AM and PM peak hours. The volume to capacity values calculated were less than one (1.0), which confirms the intersection is not over capacity.

Intersection output for the 2030 No Build analysis is included in Appendix J. The results are summarized below in Table 59.

Table 59 – Arroyo Vista and Ladera
2030 No Build Signalized Intersection Capacity Analysis Result

Signalized Intersections	2030 No Build AM Peak			2030 No Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Arroyo Vista and Ladera	9.6	0.504	A	8.7	0.440	A

7. 2030 BUILD

A single period analysis was completed for the 2030 Build scenario (Phases 1-7). This analysis was performed using the existing signal timing provided from the City of Albuquerque with no signal optimization performed. The intersection is expected to operate at an overall acceptable level of service in both the AM and PM peak hours. The volume to capacity values calculated were less than one (1.0), which indicates that the intersection is not over capacity.

The intersection output for the 2030 Build analysis is included in Appendix K. The results are summarized below in Table 60.

Table 60 – Arroyo Vista and Ladera
2030 Build Signalized Intersection Capacity Analysis Result

Signalized Intersections	2030 Build AM Peak			2030 Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Arroyo Vista and Ladera	11.1	0.525	B	13.8	0.625	B

J. ARROYO VISTA AND TIERRA PINTADA

Arroyo Vista and Tierra Pintada is an existing signalized intersection

1. EXISTING

A single-period analysis was completed for the existing scenario. This analysis was performed using the existing signal timing provided from the City of Albuquerque with no signal optimization performed. The existing signal timing for this intersection in included in Appendix A. The volume to capacity values calculated were all less than one, which indicates the intersection is not over capacity. The intersection is expected to operate at an overall acceptable level of service in both the AM and PM peak hours.

Intersection output for existing conditions analysis is included in Appendix E. The results are summarized in Table 61.

Table 61 – Arroyo Vista and Tierra Pintada 2019 Existing Signalized Intersection Capacity Analysis Result						
Signalized Intersections	**2019 AM Peak**			**2019 PM Peak**		
	Delay (sec.)	**Max V/C**	**LOS**	**Delay (sec.)**	**Max V/C**	**LOS**
Arroyo Vista and Tierra Pintada	20.5	0.724	C	19.3	0.702	B

2. 2022 NO BUILD

A single period analysis was completed for the 2022 No Build scenario (Phases 1-3). This analysis was performed using the existing signal timing provided from the City of Albuquerque with no signal optimization performed. The intersection is expected to operate at an overall acceptable level of service in both the AM and PM peak hour. The volume to capacity values calculated were less than one (1.0), which indicates that the intersection is not over capacity.

The intersection output for the 2022 No Build analysis is included in Appendix F. The results are summarized below in Table 62.

Table 62 – Arroyo Vista and Tierra Pintada 2022 No Build Signalized Intersection Capacity Analysis Result						
Signalized Intersections	**2022 No Build AM Peak**			**2022 No Build PM Peak**		
	Delay (sec.)	**Max V/C**	**LOS**	**Delay (sec.)**	**Max V/C**	**LOS**
Arroyo Vista and Tierra Pintada	21.1	0.743	C	19.7	0.723	B

3. 2022 BUILD

A single period analysis was completed for the 2022 Build scenario (Phases 1-3). This analysis was performed using the existing signal timing provided from the City of Albuquerque with no signal optimization performed. The intersection is expected to operate at overall acceptable levels of service in both AM and PM peak hours. The volume to capacity values calculated were less than one (1.0), which indicates that the intersection is not over capacity.

The Intersection output for the 2022 Build analysis is included in Appendix G. The results are summarized below in Table 63.

Table 63 – Arroyo Vista and Tierra Pintada 2022 Build Signalized Intersection Capacity Analysis Result						
Signalized Intersections	2022 Build AM Peak			2022 Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Arroyo Vista and Tierra Pintada	20.1	0.711	C	20.9	0.744	C

4. 2025 NO BUILD

A single period analysis was completed for the 2025 No Build scenario (Phases 1-3). This analysis was performed using the existing signal timing provided from the City of Albuquerque with no signal optimization performed. The intersection is expected to operate at an overall acceptable level of service in both the AM and PM peak hour with some movement LOS E in AM and LOS F in PM. The volume to capacity values calculated were less than one (1.0), which indicates that the intersection is not over capacity.

The intersection output for the 2025 No Build analysis is included in Appendix H. The results are summarized below in Table 64.

Table 64 – Arroyo Vista and Tierra Pintada 2025 No Build Signalized Intersection Capacity Analysis Result						
Signalized Intersections	2025 No Build AM Peak			2025 No Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Arroyo Vista and Tierra Pintada	21.8	0.761	C	20.1	0.744	C

5. 2025 BUILD

A single period analysis was completed for the 2025 Build scenario (Phases 1-3). This analysis was performed using the existing signal timing provided from the City of Albuquerque with no signal optimization performed. The intersection is expected to operate at an overall acceptable level of service in both the AM and PM peak hour. The volume to capacity values calculated were less than one (1.0), which indicates that the intersection is not over capacity.

The intersection output for the 2025 Build analysis is included in Appendix I. The results are summarized below in Table 65.

Table 65 – Arroyo Vista and Tierra Pintada 2025 Build Signalized Intersection Capacity Analysis Result						
Signalized Intersections	2025 Build AM Peak			2025 Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Arroyo Vista and Tierra Pintada	20.6	0.729	C	20.2	0.746	C

6. 2030 NO BUILD

A single period analysis was completed for the 2030 No Build scenario (Phases 1-7). This analysis was performed using the existing signal timing provided from the City of Albuquerque with no signal optimization performed. The intersection is expected to operate at an overall acceptable level of service in both the AM and PM peak hours. The volume to capacity values calculated were less than one (1.0), which indicates that the intersection is not over capacity.

The intersection output for the 2030 No Build analysis is included in Appendix J. The results are summarized below in Table 66.

Table 66 – Arroyo Vista and Tierra Pintada 2030 No Build Signalized Intersection Capacity Analysis Result						
Signalized Intersections	2030 No Build AM Peak			2030 No Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Arroyo Vista and Tierra Pintada	23.0	0.790	C	20.9	0.778	C

7. 2030 BUILD

A single period analysis was completed for the 2030 Build scenario (Phases 1-7). This analysis was performed using the existing signal timing provided from the City of Albuquerque with no signal optimization performed. The intersection is expected to operate at an overall acceptable level of service in both the AM and PM peak hour with northbound left operating at LOS E in the PM peak hour. The volume to capacity values calculated were less than one (1.0), which indicates that the intersection is not over capacity.

The intersection output for the 2030 Build analysis is included in Appendix K. The results are summarized below in Table 67.

Table 67 – Arroyo Vista and Tierra Pintada 2030 Build Signalized Intersection Capacity Analysis Result						
Signalized Intersections	2030 Build AM Peak			2030 Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Arroyo Vista and Tierra Pintada	21.9	0.809	C	21.9	0.763	C*
* Movements of E						

K. UNSER AND EB RAMPS

Unser and EB ramp is an existing unsignalized intersection with two-way stop control.

1. EXISTING

An analysis was completed for the existing two-way stop-controlled intersection using existing traffic volumes. The intersection is not expected to operate at an acceptable level of service with LOS F in both the AM and PM peak hours. Intersection output for the existing two way stop controlled conditions analysis is included in Appendix E. The results are summarized below in Table 68.

Table 68 – Unser and EB Ramps 2019 Existing Unsignalized Intersection Results								
Intersection/Movement	2019 AM Peak				2019 PM Peak			
	Delay	v/c	Queue* (ft)	LOS	Delay	v/c	Queue* (ft)	LOS
Unser and EB Ramps	22.9	-	-	F	15.1	-	-	F
EB Left	416.9	1.61	275	F	400.4	1.49	225	F
* – HCM 95th percentile queue rounded to next 25-foot increment								

The intersection was evaluated for a warranted traffic signal based on peak hour volumes and delay. The intersection is warranted for both warrants 3A and 3B. A traffic signal is warranted in the 2019 Existing scenario. The signal warrant results are included in Appendix E. The possibility of converting this intersection to a “High-Tee” should be considered when alternatives are evaluated for design. The analysis presented below does not include evaluation of the “High-Tee” configuration.

A single period analysis was completed for the existing traffic volumes. The Unser corridor has a coordinated system between the signals which requires specific signal optimization settings to establish a signal timing plan. Optimization was done on the uncoordinated phases of the signal timing with updates to the coordinated phases to match

the existing signal timing splits at the WB-I-40 off ramp intersection. This was done to match the existing green band that is present for the Unser corridor based on the signal at the westbound I-40 off ramp intersection.

The intersection is expected to operate at an acceptable level of service in the AM and PM peak hours. The volume to capacity values calculated were less than one (1.0), which confirms the intersection is not over capacity.

Signalized intersection output for the existing conditions analysis is included in Appendix E. The results are summarized below in Table 69.

Table 69 – Unser and EB Ramps
2019 Existing Signalized Intersection Capacity Analysis Result

Signalized Intersections	2019 AM Peak			2019 PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Unser and EB I-40 Ramp	8.2	0.524	A	10.4	0.628	B

2. 2022 NO BUILD

As the intersection warranted a traffic signal in existing conditions, signalized intersection analysis will be the only analysis completed in horizon years.

A single period analysis was completed for the 2022 No Build scenario (Phase 1). The intersection is expected to operate at an acceptable level of service in the AM and PM peak hours. The volume to capacity values calculated were less than one (1.0), which confirms the intersection is not over capacity.

Intersection output for the 2022 No Build analysis is included in Appendix F. The results are summarized below in Table 70.

Table 70 – Unser and EB Ramps
2022 No Build Signalized Intersection Capacity Analysis Result

Signalized Intersections	2022 No Build AM Peak			2022 No Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Unser and EB I-40 Ramp	9.4	0.617	A	10.9	0.666	B

3. 2022 BUILD

A single period analysis was completed for the 2022 Build scenario (Phase 1). The intersection is expected to operate at an overall acceptable level of service; however, the southbound left movement will operate at LOS E in the PM. The volume to capacity values calculated were less than one (1.0), which confirms the intersection is not over capacity.

Intersection output for the 2022 Build analysis is included in Appendix G. The results are summarized below in Table 71.

Table 71 – Unser and EB Ramps
2022 Build Signalized Intersection Capacity Analysis Result

Signalized Intersections	2022 Build AM Peak			2022 Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Unser and EB I-40 Ramp	11.9	0.68	B	10.9	0.667	B

4. 2025 NO BUILD

A single period analysis was completed for the 2025 No Build scenario (Phases 1-3). The intersection is expected to operate at an acceptable level of service in the AM and PM peak hours. The volume to capacity values calculated were less than one (1.0), which confirms the intersection is not over capacity.

Intersection output for the 2025 No Build analysis is included in Appendix H. The results are summarized below in Table 72.

Table 72 – Unser and EB Ramps
2025 No Build Signalized Intersection Capacity Analysis Result

Signalized Intersections	2025 No Build AM Peak			2025 No Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Unser and EB I-40 Ramp	9.8	0.652	A	10.6	0.647	B

5. 2025 BUILD

A single period analysis was completed for the 2025 Build scenario (Phases 1-3). The intersection is expected to operate at an acceptable level of service in the AM and PM peak

hours. The volume to capacity values calculated were less than one (1.0), which confirms the intersection is not over capacity.

Intersection output for the 2025 Build analysis is included in Appendix I. The results are summarized below in Table 73.

Table 73 – Unser and EB Ramps
2025 Build Signalized Intersection Capacity Analysis Result

Signalized Intersections	2025 Build AM Peak			2025 Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Unser and EB I-40 Ramp	9.8	0.652	A	10.7	0.647	B

6. 2030 NO BUILD

A single period analysis was completed for the 2030 No Build scenario (Phases 1-7). The intersection is expected to operate at an acceptable level of service in the AM and PM peak hours. The volume to capacity values calculated were less than one (1.0), which confirms the intersection is not over capacity.

Intersection output for the 2030 No Build analysis is included in Appendix J. The results are summarized below in Table 74.

Table 74 – Unser and EB Ramps
2030 No Build Signalized Intersection Capacity Analysis Result

Signalized Intersections	2030 No Build AM Peak			2030 No Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Unser and EB I-40 Ramp	9.3	0.650	A	11.4	0.704	B

7. 2030 BUILD

A single period analysis was completed for the 2030 Build scenario (Phases 1-7). The intersection is expected to operate at an acceptable level of service in the AM and PM peak hours. The volume to capacity values calculated were less than one (1.0), which confirms the intersection is not over capacity.

Intersection output for the 2030 Build analysis is included in Appendix K. The results are summarized below in Table 75.

Table 75 – Unser and EB Ramps 2030 Build Signalized Intersection Capacity Analysis Result						
Signalized Intersections	2030 Build AM Peak			2030 Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Unser and EB I-40 Ramp	10.5	0.709	B	11.5	0.705	B

L. UNSER AND WB RAMPS

Unser and WB Ramps is an existing signalized intersection

1. EXISTING

A single-period analysis was completed for the existing scenario. This analysis was performed using the existing signal timing provided from the City of Albuquerque with no signal optimization performed. The existing signal timing for this intersection in included in Appendix A. The volume to capacity values calculated were all less than one, which indicates the intersection is not over capacity. The intersection is expected to operate at an overall acceptable level of service in both the AM and PM peak hours.

Intersection output for existing conditions analysis is included in Appendix E. The results are summarized in Table 76.

Table 76 – Unser and WB Ramps 2019 Existing Signalized Intersection Capacity Analysis Result						
Signalized Intersections	2019 AM Peak			2019 PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Unser and WB I-40	10.5	0.574	B	16.3	0.518	B

2. 2022 NO BUILD

A single period analysis was completed for the 2022 No Build scenario (Phases 1-3). This analysis was performed using the existing signal timing provided from the City of Albuquerque with no signal optimization performed. The intersection is expected to operate at an overall acceptable level of service in both the AM and PM peak hours. The volume to capacity values calculated were less than one (1.0), which indicates that the intersection is not over capacity.

The intersection output for the 2022 No Build analysis is included in Appendix F. The results are summarized below in Table 77.

Table 77 – Unser and WB Ramps
2022 No Build Signalized Intersection Capacity Analysis Result

Signalized Intersections	2022 No Build AM Peak			2022 No Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Unser and WB I-40	11.4	0.592	B	16.5	0.520	B

3. 2022 BUILD

A single period analysis was completed for the 2022 Build scenario (Phases 1-3). This analysis was performed using the existing signal timing provided from the City of Albuquerque with no signal optimization performed. The intersection is expected to operate at overall acceptable levels of service in both AM and PM peak hours. The volume to capacity values calculated were less than one (1.0), which indicates that the intersection is not over capacity.

The Intersection output for the 2022 Build analysis is included in Appendix G. The results are summarized below in Table 78.

Table 78 – Unser and WB Ramps
2022 Build Signalized Intersection Capacity Analysis Result

Signalized Intersections	2022 Build AM Peak			2022 Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Unser and WB I-40	8.2	0.593	A	18.3	0.551	B

4. 2025 NO BUILD

A single period analysis was completed for the 2025 No Build scenario (Phases 1-3). This analysis was performed using the existing signal timing provided from the City of Albuquerque with no signal optimization performed. The intersection is expected to operate at an overall acceptable level of service in both the AM and PM peak hours. The volume to capacity values calculated were less than one (1.0), which indicates that the intersection is not over capacity.

The intersection output for the 2025 No Build analysis is included in Appendix H. The results are summarized below in Table 79.

Table 79 – Unser and WB Ramps
2025 No Build Signalized Intersection Capacity Analysis Result

Signalized Intersections	2025 No Build AM Peak			2025 No Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Unser and WB I-40	11.9	0.632	B	16.9	0.580	B

5. 2025 BUILD

A single period analysis was completed for the 2025 Build scenario (Phases 1-3). This analysis was performed using the existing signal timing provided from the City of Albuquerque with no signal optimization performed. The intersection is expected to operate at an overall acceptable level of service in both the AM and PM peak hours. The volume to capacity values calculated were less than one (1.0), which indicates that the intersection is not over capacity.

The intersection output for the 2025 Build analysis is included in Appendix I. The results are summarized below in Table 80.

Table 80 – Unser and WB Ramps
2025 Build Signalized Intersection Capacity Analysis Result

Signalized Intersections	2025 Build AM Peak			2025 Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Unser and WB I-40	8.7	0.632	A	19.6	0.705	B

6. 2030 NO BUILD

A single period analysis was completed for the 2030 No Build scenario (Phases 1-7). This analysis was performed using the existing signal timing provided from the City of Albuquerque with no signal optimization performed. The intersection is expected to operate at an overall acceptable level of service in both the AM and PM peak hours. The volume to capacity values calculated were less than one (1.0), which indicates that the intersection is not over capacity.

The intersection output for the 2030 No Build analysis is included in Appendix J. The results are summarized below in Table 81.

Table 81 – Unser and WB Ramps
2030 No Build Signalized Intersection Capacity Analysis Result

Signalized Intersections	2030 No Build AM Peak			2030 No Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Unser and WB I-40	13.6	0.702	B	14.2	0.629	B

7. 2030 BUILD

A single period analysis was completed for the 2030 Build scenario (Phases 1-7). This analysis was performed using the existing signal timing provided from the City of Albuquerque with no signal optimization performed. The intersection is expected to operate at an overall acceptable level of service in both the AM and PM peak hours. The volume to capacity values calculated were less than one (1.0), which indicates that the intersection is not over capacity.

The intersection output for the 2030 Build analysis is included in Appendix K. The results are summarized below in Table 82.

Table 82 – Unser and WB Ramps
2030 Build Signalized Intersection Capacity Analysis Result

Signalized Intersections	2030 Build AM Peak			2030 Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Unser and WB I-40	12.6	0.702	B	20.4	0.772	C

M. UNSER AND LADERA

Unser and Ladera is an existing signalized intersection.

1. EXISTING

A single-period analysis was completed for the existing scenario. This analysis was performed using the existing signal timing provided from the City of Albuquerque with no signal optimization performed. The existing signal timing for this intersection in included in

Appendix A. The volume to capacity values calculated were all less than one, which indicates the intersection is not over capacity. The intersection is expected to operate at an overall acceptable level of service in both the AM and PM peak hours with movements of LOS E.

Intersection output for existing conditions analysis is included in Appendix E. The results are summarized in Table 83.

Table 83 – Unser and Ladera
2019 Existing Signalized Intersection Capacity Analysis Result

Signalized Intersections	2019 AM Peak			2019 PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Unser and Ladera	36.9	0.890	D*	36.8	0.904	D*
* Movements of E						

2. 2022 NO BUILD

A single period analysis was completed for the 2022 No Build scenario (Phases 1-3). This analysis was performed using the existing signal timing provided from the City of Albuquerque with no signal optimization performed. The intersection is expected to operate at an overall acceptable level of service in both the AM and PM peak hour with movements of LOS E. The volume to capacity values calculated were less than one (1.0), which indicates that the intersection is not over capacity.

The intersection output for the 2022 No Build analysis is included in Appendix F. The results are summarized below in Table 84.

Table 84 – Unser and Ladera
2022 No Build Signalized Intersection Capacity Analysis Result

Signalized Intersections	2022 No Build AM Peak			2022 No Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Unser and Ladera	37.6	0.900	D*	36.5	0.907	D*
* Movements of E						

3. 2022 BUILD

A single period analysis was completed for the 2022 Build scenario (Phases 1-3). The intersection is expected to operate at overall acceptable levels of service in the 2022 Build scenario using existing signal timing in the AM and PM peak hours with LOS D with some movements as LOS F. Intersection output for 2022 Build conditions analysis with existing signal timing is included in Appendix G.

To improve the intersection LOS and delay, optimization of the signal timing was preferred in this scenario. The Unser corridor has a coordinated system between the signals which requires that the coordinated phase split timing remain with no modifications. Optimization was done on the uncoordinated phases of the signal timing which improved the overall delay of the intersection slightly.

A single period analysis was also completed for the optimized signal timing. This showed that the volume to capacity values calculated were less than one which confirms that the intersection is not over capacity. The intersection is expected to operate at an overall acceptable level of service in the AM and PM peak hours with the exception of movements of LOS E in both peak hours.

Intersection output for 2022 Build conditions analysis with optimized signal timing is included in Appendix G. The results are summarized in Table 85.

Table 85 – Unser and Ladera
2022 Build Signalized Intersection Capacity Analysis Result

Signalized Intersections	2022 Build AM Peak			2022 Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Unser and Ladera (Existing Signal Timing)	35.0	0.900	D*	44.9	0.915	D**
Unser and Ladera (Optimized Signal Timing)	33.6	0.882	C*	44.5	0.917	D*
* Movements of E **Movements of F						

4. 2025 NO BUILD

A single period analysis was completed for the 2025 No Build scenario (Phases 1-3). This analysis was performed using the existing signal timing provided from the City of Albuquerque with no signal optimization performed. The intersection is expected to operate

at an overall acceptable level of service in both the AM and PM peak hour with some movement LOS E in AM and LOS F in PM. The volume to capacity values calculated were less than one (1.0), which indicates that the intersection is not over capacity.

The intersection output for the 2025 No Build analysis is included in Appendix H. The results are summarized below in Table 86.

Table 86 – Unser and Ladera
2025 No Build Signalized Intersection Capacity Analysis Result

Signalized Intersections	2025 No Build AM Peak			2025 No Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Unser and Ladera	38.8	0.910	D*	40.1	0.927	D**

* Movements of E
** Movements of F

5. 2025 BUILD

A single period analysis was completed for the 2025 Build scenario (Phases 1-3). The intersection is expected to operate at overall acceptable levels of service using existing signal timing in the AM and PM peak hours with LOS D. Intersection output for 2025 Build conditions analysis with existing signal timing is included in Appendix I.

To improve the intersection LOS and delay, optimization of the signal timing was preferred in this scenario. The Unser corridor has a coordinated system between the signals which requires that the coordinated phase split timing remain with no modifications. Optimization was done on the uncoordinated phases of the signal timing which improved the overall delay of the intersection slightly.

A single period analysis was also completed to include the optimized signal timing. This showed that the volume to capacity values calculated were less than one which confirms that the intersection is not over capacity. The intersection is expected to operate at an overall acceptable level of service in the AM and PM peak hours with the exception of movements of LOS F in PM and LOS E in AM peak hour.

Intersection output for 2025 Build conditions analysis with optimized signal timing is included in Appendix I. The results are summarized in Table 87.

Table 87 – Unser and Ladera 2025 Build Signalized Intersection Capacity Analysis Result						
Signalized Intersections	2025 Build AM Peak			2025 Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Unser and Ladera (Existing Signal Timing)	36.8	0.911	D*	46.5	0.930	D**
Unser and Ladera (Optimized Signal Timing)	35.1	0.890	D*	45.4	0.913	D**
* Movements of E ** Movements of F						

6. 2030 NO BUILD

A single period analysis was completed for the 2030 No Build scenario (Phases 1-7). This analysis was performed using the existing signal timing provided from the City of Albuquerque. The intersection is expected to operate at an overall acceptable level of service in both the AM and PM peak hour with movements of LOS F. The PM peak hour volume to capacity value calculated was greater than one (1.0), which indicates that the intersection is over capacity in the PM peak hour but not in the AM peak hour.

The intersection output for the 2030 No Build analysis is included in Appendix J. The results are summarized below in Table 88.

Table 88 – Unser and Ladera 2030 No Build Signalized Intersection Capacity Analysis Result						
Signalized Intersections	2030 No Build AM Peak			2030 No Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Unser and Ladera	42.6	0.949	D**	51.7	1.009	D**
* Movements of E ** Movements of F						

7. 2030 BUILD

A single-period analysis was completed for the 2030 Build scenario. This analysis was performed using the existing signal timing provided from the City of Albuquerque. The intersection is expected to operate at an overall acceptable level of service in the AM peak hour with movements LOS F, but LOS F for overall PM peak hour. The volume to capacity

values calculated were 1.462 in the PM, which indicates the intersection is over capacity during the PM peak period. Single-period intersection output for 2030 Build analysis is included in Appendix K. The results are summarized in Table 89.

To improve the intersection, optimization of the signal timing was preferred in this scenario. The Unser corridor has a coordinated system between the signals which requires that the coordinated phase split timing remain with no modifications. Optimization was done on the uncoordinated phases of the signal which improved the overall delay of the intersection slightly.

A single period analysis was also completed using the optimized signal timing. The intersection is expected to operate at an overall acceptable level of service in the AM peak hour with movements LOS E, but LOS E for overall PM peak hour with movements of LOS F. The volume to capacity values calculated was 1.077 in the PM peak hour which confirms that the intersection remains over capacity during the PM peak hour.

Intersection output for 2030 Build conditions analysis with optimized signal timing is included in Appendix K. The results are summarized in Table 89.

Table 89 – Unser and Ladera
2030 Build Signalized Intersection Capacity Analysis Result

Signalized Intersections	2030 Build AM Peak			2030 Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Unser and Ladera (Existing Signal Timing)	47.8	0.955	D**	93.0	1.462	F**
Unser and Ladera (Optimized Signal Timing)	47.2	0.972	D*	72.3	1.077	E**

* Movements of E

** Movements of F

A multi-period analysis was conducted for the PM peak period with optimized signal timing, and results show the intersection is over capacity for seven 15-minute periods (4:30 – 6:15 PM) and is at its worst at 5:15 PM with a 1.585 v/c. The intersection operates under capacity beginning at 6:15 PM.

Multi-period intersection output with optimized signal timing in 2030 Build condition is included in Appendix K. The results are summarized below in Table 90.

Table 90 – Unser and Ladera
2030 Build Signalized Multi-Period Intersection Capacity Analysis Result

Demand (veh/p)

Time Period	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
4:30	53	105	45	97	143	77	86	345	89	56	213	45
4:45	38	87	37	86	154	78	82	384	73	60	222	51
5:00	56	104	55	107	152	62	77	407	74	63	259	52
5:15	43	99	29	93	143	52	99	415	87	68	240	55
5:30	42	61	35	76	98	61	97	322	73	56	241	63
5:45	56	73	55	82	86	52	91	305	69	64	241	45
6:00	45	47	22	92	99	61	93	289	79	56	234	64
6:15	43	55	32	79	89	48	86	272	68	64	186	32
6:30	32	40	38	87	94	60	69	203	52	46	164	46
6:45	46	43	36	84	62	52	62	188	55	46	118	32

Delay (s)

Time Period	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
4:30	60.8	43.4	40.6	90.5	102.7	44.9	248.6	48.4	0.0	108.1	24.8	23.1
4:45	61.9	41.9	39.7	74.2	157.4	42.0	560.9	58.2	42.7	97.1	42.0	44.6
5:00	60.6	43.3	41.3	117.6	261.3	41.0	811.1	70.5	42.9	87.2	42.7	44.4
5:15	61.5	43.0	39.5	99.1	333.6	37.5	1167.3	88.0	47.2	119.2	41.6	43.9
5:30	61.6	41.1	40.3	70.4	179.0	40.5	1679.4	43.1	40.8	81.5	38.9	40.5
5:45	60.6	47.8	47.7	72.6	56.2	46.8	1385.6	39.0	37.2	70.1	43.0	46.0
6:00	61.4	46.2	45.1	80.0	60.0	46.2	1448.6	36.6	37.6	75.1	44.4	48.5
6:15	61.5	47.9	47.0	71.5	57.2	45.9	1281.9	35.5	35.2	73.9	39.4	41.3
6:30	62.4	48.2	48.9	74.6	56.8	46.7	1069.9	28.5	28.4	59.2	39.1	41.0
6:45	61.3	54.2	54.7	73.4	55.5	55.8	552.1	23.7	24.2	65.5	36.8	38.2

Level of Service (LOS)

Time Period	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
4:30	E	D	D	F	F	D	F	D	A	F	C	C
4:45	E	D	D	E	F	D	F	E	D	F	D	D
5:00	E	D	D	F	F	D	F	F	D	F	D	D
5:15	E	D	D	F	F	D	F	F	D	F	D	D
5:30	E	D	D	E	F	D	F	D	D	F	D	D
5:45	E	D	D	E	E	D	F	D	D	E	D	D
6:00	E	D	D	F	E	D	F	D	D	E	D	D
6:15	E	D	D	E	E	D	F	D	D	E	D	D
6:30	E	D	D	E	E	D	F	C	C	E	D	D
6:45	E	D	D	E	E	E	F	C	C	E	D	D

Queue Storage Ratio (QSR)

Time Period	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
4:30	0.56	0	0.53	1.11	0	0	1.84	0	1.54	0.8	0	0
4:45	0.4	0	0.43	0.92	0	0	2.98	0	1.22	0.76	0	0
5:00	0.59	0	0.66	1.34	0	0	3.87	0	1.24	0.65	0	0
5:15	0.45	0	0.34	1.15	0	0	5.59	0	1.49	0.86	0	0
5:30	0.44	0	0.41	0.81	0	0	7.57	0	1.2	0.68	0	0
5:45	0.59	0	0.72	0.87	0	0	8.45	0	1.09	0.72	0	0
6:00	0.48	0	0.27	1	0	0	8.6	0	1.24	0.65	0	0
6:15	0.45	0	0.41	0.84	0	0	8.37	0	1.05	0.74	0	0
6:30	0.34	0	0.5	0.93	0	0	7.17	0	0.76	0.51	0	0
6:45	0.49	0	0.5	0.9	0	0	4.93	0	0.74	0.53	0	0

Intersection Delay and LOS

Time Period		
4:30	64.3	E
4:45	97.6	F
5:00	123.9	F
5:15	175.5	F
5:30	187.6	F
5:45	148.5	F
6:00	158.0	F
6:15	146.9	F
6:30	122.1	F
6:45	81.9	F

N. UNSER AND TIERRA PINTADA

Unser and Tierra Pintada is an existing signalized intersection.

1. EXISTING

A single-period analysis was completed for the existing scenario. This analysis was performed using the existing signal timing provided from the City of Albuquerque with no signal optimization performed. The existing signal timing for this intersection in included in Appendix A. The volume to capacity values calculated were 1.394 in the AM, which indicates the intersection is over capacity during the AM peak period.

Single-period intersection output for existing conditions is included in Appendix E. The results are summarized in Table 91.

Table 91 – Unser and Tierra Pintada
2019 Existing Signalized Intersection Capacity Analysis Result

Signalized Intersections	2019 AM Peak			2019 PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Unser and Tierra Pintada	72.5	1.394	E**	28.9	0.947	C**

* Movements of E
**Movements of F

A multi-period analysis was conducted for the AM peak period, and results show the intersection is over capacity for six 15-minute periods (7:15 – 8:30 AM) and is at its worst at 8:15 AM with a 1.786 v/c. The intersection operates under capacity from 7:00 to 7:15 AM and again beginning at 8:30 AM.

Multi-period intersection output for existing condition is included in Appendix E. The results are summarized below in Table 92.

Table 92 – Unser and Tierra Pintada
2019 Existing Signalized Multi-Period Intersection Capacity Analysis Result

Demand (veh/p)

Time Period	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
7:00	33	1	103	7	1	0	23	215	6	5	269	16
7:15	57	1	84	13	0	4	26	223	7	13	329	27
7:30	67	3	89	7	4	4	35	266	5	18	334	24
7:45	45	6	63	21	6	10	28	217	9	28	363	31
8:00	41	6	59	51	4	13	39	167	8	11	221	24
8:15	26	5	63	69	3	11	38	175	6	12	215	31
8:30	49	2	66	23	0	5	36	157	10	10	186	24
8:45	34	9	54	16	3	4	16	118	11	11	195	16

Delay (s)

Time Period	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
7:00	95.2	34.2	0.0	77.2	40.6	0.0	64.9	17.8	0.0	85.1	23.1	0.0
7:15	305.0	39.1	62.5	68.8	0.0	44.5	64.0	17.0	14.2	68.6	22.1	17.4
7:30	843.6	38.0	61.6	76.7	44.9	45.0	62.5	18.5	14.6	66.2	23.7	18.4
7:45	1272.3	45.0	56.8	70.0	48.0	48.6	63.6	17.5	14.8	63.6	20.7	15.9
8:00	1386.9	46.1	58.0	241.6	45.8	47.1	61.8	14.8	13.1	70.2	20.9	18.4
8:15	1214.4	44.9	60.3	726.3	44.7	45.7	62.0	15.8	13.7	69.4	21.4	19.4
8:30	1220.2	43.9	59.0	877.7	0.0	44.2	62.3	15.6	14.0	71.3	21.0	19.1
8:45	1284.9	47.8	58.4	428.4	47.2	47.4	67.0	13.3	12.4	70.2	15.3	13.5

Level of Service (LOS)

Time Period	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
7:00	F	C	A	E	D		E	B	A	F	C	A
7:15	F	D	E	E		D	E	B	B	E	C	B
7:30	F	D	E	E	D	D	E	B	B	E	C	B
7:45	F	D	E	E	D	D	E	B	B	E	C	B
8:00	F	D	E	F	D	D	E	B	B	E	C	B
8:15	F	D	E	F	D	D	E	B	B	E	C	B
8:30	F	D	E	F		D	E	B	B	E	C	B
8:45	F	D	E	F	D	D	E	B	B	E	B	B

Queue Storage Ratio (QSR)

Time Period	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
7:00	1.38	0	0	0.19	0.02	0	0.31	0	0	0.09	0	0.13
7:15	3.46	0	0	0.32	0	0.08	0.33	0	0	0.19	0	0.2
7:30	7.06	0	0	0.19	0.08	0.08	0.43	0	0	0.26	0	0.18
7:45	8.79	0	0	0.53	0.12	0.2	0.35	0	0	0.4	0	0.22
8:00	9.34	0	0	2.02	0.08	0.26	0.47	0	0	0.16	0	0.18
8:15	8.12	0	0	4.54	0.06	0.21	0.46	0	0	0.18	0	0.25
8:30	8.62	0	0	4.31	0	0.1	0.44	0	0	0.15	0	0.19
8:45	8.6	0	0	2.41	0.06	0.08	0.21	0	0	0.16	0	0.1

Intersection Delay and LOS

Time Period		
7:00	23.1	C
7:15	48.4	D
7:30	93.2	F
7:45	95.3	F
8:00	131.2	F
8:15	149.2	F
8:30	165.6	F
8:45	125.7	F

2. 2022 NO BUILD

A single period analysis was completed for the 2022 No Build scenario (Phases 1-3). This analysis was performed using the existing signal timing provided from the City of Albuquerque with no signal optimization performed. The intersection is expected to operate at an overall acceptable level of service in the PM peak hour with movements of LOS F. The intersection is not expected to operate at an overall acceptable level of service in the AM peak hour with several movements of LOS F. The volume to capacity values calculated were greater than one (1.0), which indicates that the intersection is over capacity.

The intersection output for the 2022 No Build analysis is included in Appendix F. The results are summarized below in Table 93.

Table 93 – Unser and Tierra Pintada
2022 No Build Signalized Intersection Capacity Analysis Result

Signalized Intersections	2022 No Build AM Peak			2022 No Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Unser and Tierra Pintada	82.7	1.473	F**	28.9	0.947	C**

* Movements of E
** Movements of F

3. 2022 BUILD

A single period analysis was completed for the 2022 Build scenario (Phases 1-3). The intersection is not expected to operate at acceptable levels of service in the 2022 Build scenario using existing signal timing in the AM or PM peak hours with LOS F in the AM and LOS D in the PM peak hours.

Intersection output for 2022 Build conditions analysis with existing signal timing is included in Appendix G. The results are summarized in Table 94.

To improve the intersection, optimization of the signal timing was preferred in this scenario. The Unser corridor has a coordinated system between the signals which requires that the coordinated phase split timing remain with no modifications. Optimization was done on the uncoordinated phases of the signal timing which improved the overall delay of the intersection drastically.

A single period analysis was also completed for the optimized signal timing. This showed that the volume to capacity values calculated were less than one which confirms

that the intersection is not over capacity. The intersection is expected to operate at an overall acceptable level of service in the AM and PM peak hours with the exception of movements of LOS F in the AM peak hour.

Intersection output for 2022 Build conditions analysis with optimized signal timing is included in Appendix G. The results are summarized in Table 94.

Table 94 – Unser and Tierra Pintada
2022 Build Signalized Intersection Capacity Analysis Result

Signalized Intersections	2022 Build AM Peak			2022 Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Unser and Tierra Pintada (Existing Signal Timing)	93.6	1.539	F**	37.4	0.999	D**
Unser and Tierra Pintada (Optimized Signal Timing)	24.7	0.903	C**	25.7	0.927	C*

* Movements of E

** Movements of F

4. 2025 NO BUILD

A single period analysis was completed for the 2025 No Build scenario (Phases 1-3). This analysis was performed using the existing signal timing provided from the City of Albuquerque with no signal optimization performed. The intersection is expected to operate at an overall acceptable level of service in the PM peak hour with movements of LOS F. The intersection is not expected to operate at an overall acceptable level of service in the AM peak hour with and overall LOS F with several movements of LOS F. The volume to capacity values calculated were greater than one (1.0), which indicates that the intersection is over capacity.

The intersection output for the 2025 No Build analysis is included in Appendix H. The results are summarized below in Table 95.

Table 95 – Unser and Tierra Pintada 2025 No Build Signalized Intersection Capacity Analysis Result						
Signalized Intersections	2025 No Build AM Peak			2025 No Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Unser and Tierra Pintada	92.6	1.552	F**	38.4	1.059	D**
* Movements of E ** Movements of F						

5. 2025 BUILD

A single period analysis was completed for the 2025 Build scenario (Phases 1-3). The intersection is not expected to operate at acceptable levels of service in the 2025 Build scenario using existing signal timing in the AM or PM peak hours with LOS F in the AM and LOS D in the PM peak hours.

Intersection output for 2025 Build conditions analysis with existing signal timing is included in Appendix I. The results are summarized in Table 96.

To improve the intersection, optimization of the signal timing was preferred in this scenario. The Unser corridor has a coordinated system between the signals which requires that the coordinated phase split timing remain with no modifications. Optimization was done on the uncoordinated phases of the signal timing which improved the overall delay of the intersection drastically.

A single period analysis was also completed to include the optimized signal timing. This showed that the volume to capacity values calculated were less than one which confirms that the intersection is not over capacity. The intersection is expected to operate at an overall acceptable level of service in the AM and PM peak hours with the exception of movements of LOS F in both AM and PM peak hours.

Intersection output for 2025 Build conditions analysis with optimized signal timing is included in Appendix I. The results are summarized in Table 96.

Table 96 – Unser and Tierra Pintada 2025 Build Signalized Intersection Capacity Analysis Result						
Signalized Intersections	2025 Build AM Peak			2025 Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Unser and Tierra Pintada (Existing Signal Timing)	133.6	1.788	F**	51.6	1.177	D**
Unser and Tierra Pintada (Optimized Signal Timing)	30.5	0.921	C**	25.7	0.905	C**
* Movements of E ** Movements of F						

6. 2030 NO BUILD

A single period analysis was completed for the 2030 No Build scenario (Phases 1-7). This analysis was performed using the existing signal timing provided from the City of Albuquerque with no signal optimization performed. The intersection is expected to operate at an overall acceptable level of service in the PM peak hour with movements of LOS F. The intersection is not expected to operate at an overall acceptable level of service in the AM peak hour with an overall LOS F with several movements of LOS F. The volume to capacity values calculated were greater than one (1.0), which indicates that the intersection is over capacity.

The intersection output for the 2030 No Build analysis is included in Appendix J. The results are summarized below in Table 97.

Table 97 – Unser and Tierra Pintada 2030 No Build Signalized Intersection Capacity Analysis Result						
Signalized Intersections	2030 No Build AM Peak			2030 No Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Unser and Tierra Pintada	110.6	1.683	F**	53.6	1.151	D**
* Movements of E ** Movements of F						

7. 2030 BUILD

A single period analysis was completed for the 2030 Build scenario (Phases 1-7). The intersection is not expected to operate at acceptable levels of service in the 2030 Build

scenario using existing signal timing in the AM or PM peak hours with LOS F in both the AM and PM peak hours.

Intersection output for 2030 Build conditions analysis with existing signal timing is included in Appendix K. The results are summarized in Table 98.

To improve the intersection, optimization of the signal timing was preferred in this scenario. The Unser corridor has a coordinated system between the signals which requires that the coordinated phase split timing remain with no modifications. Manual optimization was done on the uncoordinated phases of the signal timing which improved the overall delay of the intersection drastically.

A single period analysis was also completed to include the optimized signal timing. This showed that the volume to capacity values calculated were less than one which confirms that the intersection is not over capacity. The intersection is expected to operate at an overall acceptable level of service in the AM and PM peak hours with the exception of movements of LOS F in both AM and PM peak hours.

Intersection output for 2030 Build conditions analysis with optimized signal timing is included in Appendix K. The results are summarized in Table 98.

Table 98 – Unser and Tierra Pintada
2030 Build Signalized Intersection Capacity Analysis Result

Signalized Intersections	2030 Build AM Peak			2030 Build PM Peak		
	Delay (sec.)	Max V/C	LOS	Delay (sec.)	Max V/C	LOS
Unser and Tierra Pintada (Existing Signal Timing)	234.0	2.314	F**	98.2	1.539	F**
Unser and Tierra Pintada (Optimized Signal Timing)	32.6	0.935	C**	30.3	0.944	C**

* Movements of E

** Movements of F

O. UNSIGNALIZED INTERSECTIONS

The following section discusses the intersections that will remain unsignalized throughout the study timeframe.

1. EXISTING INTERSECTIONS

The existing unsignalized intersection analysis consider only those intersections that exist today. The two entrances to the Inspiration subdivision and Arroyo Vista and

eastbound ramps are the only existing intersections expected to remain unsignalized through full buildout.

These intersections on Arroyo Vista are two-way stop-controlled intersections with Arroyo Vista uncontrolled. Intersection output is included in Appendix E.

The intersections operate at overall acceptable levels of service although the eastbound left movement at Arroyo Vista and I-40 eastbound ramps operates at LOS E in the AM and LOS F in the PM peak hour with one stage left turning movements. With two stage left turn maneuvers, this movement operates at LOS C in the AM and LOS F in the PM peak hour. Although the calculated delay for this movement is very high, this is likely not true in the field as drivers may make two-stage left turn maneuvers, and as drivers wait longer they accept shorter gaps than the default values in the HCM. This is another location where a "High-Tee" configuration should be considered to promote two-stage left turns in a safer manner than under the current configuration.

The peak hour traffic signal warrant is not satisfied at the I-40 eastbound ramp due to the low volume of the eastbound left turn movement.

Intersection output is included in Appendix E. The results are summarized in Table 99 below.

Table 99 – Arroyo Vista and Inspiration Access
2019 Existing Unsignalized Intersection Results

Intersection/Movement	2019 AM Peak				2019 PM Peak			
	Delay	v/c	Queue* (ft)	LOS	Delay	v/c	Queue* (ft)	LOS
Arroyo Vista and Inspiration West	6.5	-	-	A	3.2	-	-	A
SB Approach	8.8	0.07	25	A	8.9	0.04	25	A
Arroyo Vista and Inspiration East	7.6	-	-	A	2.2	-	-	A
SB Approach	14.2	0.40	50	B	11.2	0.15	25	B
Arroyo Vista and EB Ramps	0.9	-	-	A	12.4	-	-	B
(1 Stage) EB Left	35.3	0.25	25	E	729.6	1.81	150	F
Arroyo Vista and EB Ramps	0.5	-	-	A	3.0	-	-	A
(2 Stage) EB Left	21.0	0.15	25	C	176.4	0.77	100	F
* – HCM 95th percentile queue rounded to next 25-foot increment								

2. 2022 NO BUILD

The existing unsignalized intersections are expected to operate at overall acceptable levels of service in the 2022 No Build scenario. Again, the eastbound left movement at Arroyo Vista and eastbound ramps operates at LOS E in the AM and LOS F in the PM peak hour. Intersection output is included in Appendix F. The peak hour traffic signal warrant is

not satisfied at the I-40 eastbound ramp due to the low volume of the eastbound left turn movement.

The results are summarized in Table 100 below.

Table 100 – Arroyo Vista and Inspiration Access
2022 No Build Existing Unsignalized Intersection Results

Intersection/Movement	2022 No Build AM Peak				2022 No Build PM Peak			
	Delay	v/c	Queue* (ft)	LOS	Delay	v/c	Queue* (ft)	LOS
Arroyo Vista and Inspiration West	6.5	-	-	A	3.2	-	-	A
SB Approach	8.8	0.07	25	A	8.9	0.05	25	A
Arroyo Vista and Inspiration East	5.2	-	-	A	2.6	-	-	A
SB Approach	10	0.18	25	B	10.3	0.13	25	B
Arroyo Vista and EB Ramps	1	-	-	A	17	-	-	C
EB Left	40.3	0.29	50	E	1,034	2.34	150	F
* – HCM 95th percentile queue rounded to next 25-foot increment								

3. 2022 BUILD

The 2022 Build analysis assumes Arroyo Vista from Atrisco Vista to Estancia will be constructed. Build site trip assignments were modified to reflect this connection.

a) *Existing Intersections*

The existing intersection analysis again considers only those intersections that exist today. The two entrances to the Inspiration subdivision and Arroyo Vista and eastbound ramps are the only existing intersections expected to remain unsignalized through full buildout.

With the extension of Arroyo Vista to Atrisco Vista, through traffic and build traffic will pass the entrances to the Inspiration subdivision. These intersections were evaluated with a half section (1 lane in each direction) and with a full section (2 lanes in each direction). The Inspiration intersections are expected to operate at an acceptable level of service in Phase 1 with the half-section constructed on Arroyo Vista.

The eastbound left movement at Arroyo Vista and eastbound ramps was analyzed with a one stage and a two-stage left turn movement. With two stage left turns, the intersection operates at an overall acceptable level of service although movements of LOS F exist in the PM peak hour.

Intersection output is included in Appendix G.

The results are summarized in Table 101 below.

Please note the overall delay for the Inspiration intersections will improve in the Build compared to the No Build. This is due to more eastbound and westbound volumes that do not incur delay, which causes the overall intersection delay to decrease.

Table 101 – Arroyo Vista and Inspiration Access
2022 Build Existing Unsignalized Intersection Results

Intersection/Movement	2022 Build AM Peak				2022 Build PM Peak			
	Delay	v/c	Queue * (ft)	LOS	Delay	v/c	Queue * (ft)	LOS
Arroyo Vista and Inspiration West	1.6	-	-	A	0.9	-	-	A
(Half Section) SB Approach	11.7	0.11	25	B	12.5	0.08	25	B
Arroyo Vista and Inspiration East	3.4	-	-	A	1.9	-	-	A
(Half Section) SB Approach	14.8	0.30	50	B	17	0.25	25	C
Arroyo Vista and Inspiration West	1.5	-	-	A	0.9	-	-	A
(Full Section) SB Approach	10.7	0.10	25	B	12.0	0.08	25	B
Arroyo Vista and Inspiration East	3.7	-	-	A	1.7	-	-	A
(Full Section) SB Approach	16.3	0.33	50	C	15.3	0.22	25	C
Arroyo Vista and EB Ramps	1.0	-	-	A	18.1	-	-	C
(One Stage) EB Left	42.1	0.30	50	E	1,111	2.47	175	F
Arroyo Vista and EB Ramps	0.6	-	-	A	4.1	-	-	A
(Two Stage) EB Left	22.9	0.17	25	C	250.3	0.95	100	F

* – HCM 95th percentile queue rounded to next 25-foot increment

b) *Future Major Intersections*

The Future Major intersections evaluate the future unsignalized intersections that will be constructed during Phase 1 that intersect with a major street. In 2022, these intersections are 1) Arroyo Vista and Atrisco Vista, 2) Arroyo Vista and Estancia Parkway, and 3) Arroyo Vista and Del Webb Parkway. Each of these intersections were evaluated with the half section constructed on Arroyo Vista (one lane in each direction). Please see Figure 34 on page 74 for a review of the Phase 1 (2022) development area.

The future major intersections were evaluated with two-way stop control. At the intersection of Arroyo Vista and Del Webb, and Arroyo Vista and Estancia, the minor streets have stop control, and the major street (Arroyo Vista) was uncontrolled. At Atrisco Vista and Arroyo Vista, Atrisco Vista was uncontrolled and Arroyo Vista had stop control.

The intersection of Atrisco Vista and Arroyo Vista should have a northbound right turn deceleration lane and a southbound left turn deceleration lane constructed to City standards.

The three future major intersections are expected to operate at an acceptable level of service in Phase 1 with the half-section constructed on Arroyo Vista. Intersection output is included in Appendix G. The results are summarized in Table 102 below.

Table 102 – 2022 Build Future Unsignalized Intersection Results

Intersection/Movement	2022 Build AM Peak				2022 Build PM Peak			
	Delay	v/c	Queue* (ft)	LOS	Delay	v/c	Queue* (ft)	LOS
Arroyo Vista and Del Webb	1.8	-	-	A	1.5	-	-	A
NB Approach	9.9	0.06	25	A	9.6	0.04	25	A
WB Approach	7.7	0.02	25	A	7.6	0.03	50	A
Arroyo Vista and Estancia	6	-	-	A	5.7	-	-	A
WB Approach	7.4	0.03	25	A	7.7	0.11	25	A
NB Approach	10	0.04	25	A	12.7	0.04	25	A
Arroyo Vista and Atrisco Vista	3	-	-	A	2.6	-	-	A
NB Approach	0	0	0	A	0	0	0	A
SB Approach	7.5	0.04	25	A	7.8	0.03	25	A
WB Approach	10.8	0.11	25	B	10.5	0.11	25	B

* – HCM 95th percentile queue rounded to next 25-foot increment

c) *Del Webb Intersections*

The Del Webb intersections consist of the entrances to the Del Webb subdivisions. Del Webb Parkway will be built out to its ultimate configuration in each phase to serve the subdivisions as they are constructed. Due to the low volumes and acceptable operations, exclusive turn lanes are not warranted at the subdivision entrances. This will be shown to be true for all Build scenarios evaluated.

The results indicate all the site entrances will operate at acceptable levels of service in Phase 1. Intersection output is included in Appendix G. The results are summarized in Table 103 below.

Table 103 – 2022 Build Del Webb Unsignalized Intersection Results								
Intersection/Movement	2022 Build AM Peak				2022 Build PM Peak			
	Delay	v/c	Queue* (ft)	LOS	Delay	v/c	Queue* (ft)	LOS
Del Webb and Parcel 16/17N	5.1	-	-	A	3.5	-	-	A
SB Approach	7.3	0.01	0	A	7.3	.01	0	A
EB Approach	9.1	0.04	25	A	9.1	.02	25	A
WB Approach	8.4	0.01	0	A	8.4	.01	0	A
Del Webb and Amenities	3.1	-	-	A	2.7	-	-	A
SB Approach	7.3	0.01	0	A	7.3	.01	0	A
WB Approach	8.6	0.01	0	A	8.4	.01	0	A
Del Webb and Parcel 17S	0	0	0	A	0	0	0	A
WB Approach	0	0	0	A	0	0	0	A
* – HCM 95th percentile queue rounded to next 25-foot increment								

d) *Estancia Intersections*

The Estancia intersections consist of the entrances to the Estancia subdivision.

The results indicate all the site entrances will operate at acceptable levels of service in Phase 1. Please note the entrance to Parcel 13B/15 on Estancia is a roundabout. Intersection output is included in Appendix G. The results are summarized in Table 104 below.

Table 104 – 2022 Build Estancia Unsignalized Intersection Results								
Intersection/Movement	2022 No Build AM Peak				2022 No Build PM Peak			
	Delay	v/c	Queue* (ft)	LOS	Delay	v/c	Queue* (ft)	LOS
Estancia and Parcel 13B/15 RAB	3.3	-	-	A	3.3	-	-	A
NB Approach	3.6	0.07	0	A	3.3	0.05	0	A
SB Approach	2.9	0.02	0	A	3.2	0.08	0	A
EB Approach	3.4	0.08	0	A	3.4	0.05	0	A
WB Approach	3.2	0.00	0	A	3.0	0.00	0	A
Estancia and Parcel 13C	6.6			A	3.3	-	-	A
EB Approach	8.9	0.09	25	A	9	.06	25	A
* – HCM 95th percentile queue rounded to next 25-foot increment								

4. 2025 NO BUILD

The existing intersection analyses consider only those intersections that exist today. The two entrances to the Inspiration subdivision and Arroyo Vista and eastbound ramps are the only existing intersections expected to remain unsignalized through full buildout.

The existing unsignalized intersections are expected to operate at overall acceptable levels of service in the 2025 No Build scenario. The eastbound left movement at Arroyo Vista and eastbound ramps continues to operate at LOS E in the AM and LOS F in the PM peak hour. The peak hour traffic signal warrant is not satisfied at the I-40 eastbound ramp due to the low volume of the eastbound left turn movement.

Intersection output is included in Appendix H. The results are summarized in Table 105 below.

Table 105 – Arroyo Vista and Inspiration Access
2025 No Build Existing Unsignalized Intersection Results

Intersection/Movement	2025 No Build AM Peak				2025 No Build PM Peak			
	Delay	v/c	Queue* (ft)	LOS	Delay	v/c	Queue* (ft)	LOS
Arroyo Vista and Inspiration West	6.5	-	-	A	3.2	-	-	A
SB Approach	8.8	0.07	25	A	8.9	0.05	25	A
Arroyo Vista and Inspiration East	5.2	-	-	A	2.6	-	-	A
SB Approach	10	0.18	25	B	10.3	0.13	25	B
Arroyo Vista and EB Ramps	1.1	-	-	A	24.2	-	-	C
EB Left	45.8	0.33	50	E	1,469	3.11	175	F
* – HCM 95th percentile queue rounded to next 25-foot increment								

5. 2025 BUILD

a) *Existing Intersections*

The existing unsignalized intersections are expected to operate at overall acceptable levels of service in the 2025 Build scenario. Please see Figure 35 on page 77 to review the level of development in Phases 1-3 (2025).

With the extension of Arroyo Vista to Atrisco Vista, through traffic and build traffic will pass the entrances to the Inspiration subdivision. These intersections were evaluated with a half section (1 lane in each direction) and with a full section (2 lanes in each direction). These intersections were also analyzed with a one stage and a two-stage left turn movement. The Inspiration intersections are expected to operate at an acceptable level of service with a two-stage left turn movement in Phase 1 with the half-section constructed on Arroyo Vista.

The intersection of Arroyo Vista and Inspiration West will operate at an overall LOS A in both the AM and PM peak hours with the half section constructed.

The intersection of Arroyo Vista and Inspiration East will operate at an overall LOS A in both the AM and PM peak hours with the half section constructed although the southbound left movement operates at LOS E with a one stage movement. Analysis showed that this will improve with a two-stage movement to LOS C.

The eastbound left movement at Arroyo Vista and eastbound ramps was also analyzed with a one stage and a two-stage left turn movement. With one stage and two stage left turns, the intersection continues to operate at LOS F in the PM peak hour but improves to LOS D in the AM peak hour using the two-stage movement. The peak hour traffic signal warrant is not satisfied at the I-40 eastbound ramp due to the low volume of the eastbound left turn movement.

The results in Table 106 below evaluate Arroyo Vista both as a half section and as a full section past the Inspiration subdivision entrances. Traffic exiting the subdivision from the east driveway will experience higher delay due to the through traffic coming from the west driveway. Intersection output is included in Appendix I.

Table 106 – Arroyo Vista and Inspiration Access
2025 Build Existing Unsignalized Intersection Results

Intersection/Movement	2025 Build AM Peak				2025 Build PM Peak			
	Delay	v/c	Queue* (ft)	LOS	Delay	v/c	Queue* (ft)	LOS
Arroyo Vista and Inspiration West (Half Section) SB Approach	1.3 17.4	- 0.19	- 25	A C	0.9 22.4	- 0.17	- 25	A C
Arroyo Vista and Inspiration East (One Stage) SB Approach	4.1 28.2	- 0.51	- 75	A D	2.9 40.4	- 0.51	- 75	A E
Arroyo Vista and Inspiration East (Two Stage) SB Approach					1.5 22.3	- 0.33	- 50	A C
Arroyo Vista and Inspiration West (Full Section) SB Approach	1 14.6	- 0.15	- 25	A B	0.8 21.1	- 0.16	- 25	A C
Arroyo Vista and Inspiration East (One Stage) SB Approach	4.6 34.5	- 0.58	- 100	A D	2.4 34	- 0.47	- 75	A E
Arroyo Vista and Inspiration East (Two Stage) SB Approach					1.5 21.9	- 0.32	- 50	A C
Arroyo Vista and EB Ramps (One Stage) EB Left	1.3 55.2	- 0.37	- 50	A F	27.5 1,752	- 3.59	- 175	D F
Arroyo Vista and EB Ramps (Two Stage) EB Left	0.6 25.8	- 0.20	- 25	A D	6.1 385.5	- 1.23	- 125	A F

* – HCM 95th percentile queue rounded to next 25-foot increment

b) *Future Major Intersections*

The Future Major intersections evaluate the future unsignalized intersections that will be constructed during Phase 1. In 2025, these intersections are 1) Arroyo Vista and Atrisco Vista, 2) Arroyo Vista and Estancia Parkway, 3) Arroyo vista and Del Webb Parkway, and 4) Atrisco Vista and the "118th Street" extension. Each of these intersections were evaluated with the half section constructed on Arroyo Vista (one lane in each direction)

The future major intersections were evaluated with two-way stop control. At the intersection of Arroyo Vista and Del Webb, and Arroyo Vista and Estancia, the minor streets had stop control, and the major street (Arroyo Vista) was uncontrolled. At Atrisco Vista and Arroyo Vista and at Atrisco Vista and 118th Street, Atrisco Vista was uncontrolled.

The four future major intersections are expected to operate at an acceptable level of service in Phases 1-3. The results are summarized in Table 107 below. Intersection output is included in Appendix I.

Table 107 – 2025 Build Future Unsignalized Intersection Results

Intersection/Movement	2025 Build AM Peak				2025 Build PM Peak			
	Delay	v/c	Queue* (ft)	LOS	Delay	v/c	Queue* (ft)	LOS
Arroyo Vista and Del Webb	2.5	-	-	A	1.8	-	-	A
NB Approach	13.8	0.22	25	B	11.8	0.13	25	B
EB Approach	0	0	0	A	0	0	0	A
WB Approach	8.5	0.05	25	A	8.2	0.09	25	A
Arroyo Vista and Estancia	8.2	-	-	A	7.7	-	-	C
WB Approach	7.6	0.09	25	A	8.5	0.31	50	A
NB Left	11.2	0.05	25	B	22.4	0.09	25	C
NB Right	11.2	0.42	75	B	10.1	0.28	50	B
Atrisco Vista and Arroyo Vista	3.2	-	-	A	2.7	-	-	A
NB Approach	0	0	0	A	0	0	0	A
SB Left	7.6	0.05	25	A	7.8	0.03	25	A
WB Left	11.8	0.16	25	B	10.9	0.13	25	B
Atrisco Vista and 118th Street	6.2	-	-	A	3.9	-	-	A
NB Approach	0	0	0	A	0	0	0	A
SB Approach	7.6	0.01	0	A	8.5	0.03	25	A
EB Approach	0	0	0	A	0	0	0	A
WB Left	17.2	0.46	75	C	17.4	0.36	50	C
WB Right	9.2	0.03	25	A	10.5	0.02	25	B

* – HCM 95th percentile queue rounded to next 25-foot increment

c) *Del Webb Intersections*

The Del Webb intersections consist of the entrances to the Del Webb subdivision.

The results indicate all the site entrances will operate at acceptable levels of service in Phases 1-3. The results are summarized in Table 108 below. Intersection output is included in Appendix I.

Table 108 – 2025 Build Del Webb Unsignalized Intersection Results

Intersection/Movement	2025 Build AM Peak				2025 Build PM Peak			
	Delay	v/c	Queue* (ft)	LOS	Delay	v/c	Queue* (ft)	LOS
Del Webb and Parcel 16/17N	2.3	-	-	A	1.5	-	-	A
SB Approach	7.4	0.01	0	A	7.4	0.01	0	A
EB Approach	9.9	0.04	25	A	10	0.03	25	B
WB Approach	8.7	0.01	0	A	8.6	0.01	0	A
Del Webb and Parcel 18	2.6	-	-	A	1.6	-	-	A
EB Approach	9.0	0.04	25	A	9.1	0.03	25	A
NB Approach	0.0	0.00	0	A	0.0	0.00	0	A
Del Webb and Parcel 18/Amenities	5.4	-	-	A	3.3	-	-	A
SB Approach	7.3	0.01	0	A	7.2	0.01	0	A
EB Approach	9	0.07	25	A	9.0	0.03	25	A
WB Approach	8.6	0.01	0	A	8.4	0.01	0	A
Del Webb and Parcel 17S	0	0	0	A	0	0	0	A
WB Approach	0	0	0	A	0	0	0	A

* – HCM 95th percentile queue rounded to next 25-foot increment

d) *Estancia Intersections*

The Estancia intersections consist of the entrances to the Estancia subdivision.

The results indicate all the site entrances will operate at acceptable levels of service in Phases 1-3. The results are summarized in Table 109 below. Intersection output is included in Appendix I.

Table 109 – 2025 Build Estancia Unsignalized Intersection Results								
Intersection/Movement	2025 Build AM Peak				2025 Build PM Peak			
	Delay	v/c	Queue* (ft)	LOS	Delay	v/c	Queue* (ft)	LOS
Estancia and Parcel 13A/15N	2.3	-	-		1.7	-		
SB Approach	8	0.01	0	A	7.8	0.04	25	A
EB Approach	10.7	0.10	25	B	13.2	0.10	25	B
WB Approach	9.8	0.06	25	A	9.4	0.04	25	A
Estancia and Parcel 13B/15	3.9	-	-		4.1	-	-	
NB Approach	4.5	0.18	25	A	4.1	0.13	0	A
SB Approach	3.2	0.08	0	A	4.3	0.23	25	A
EB Approach	3.4	0.07	0	A	3.8	0.06	0	A
WB Approach	3.7	0.05	0	A	3.4	0.03	0	A
Estancia and Parcel 13C/15S	4.3	-			3.1	-	-	
NB Approach	0.01	0.01	-	A	7.7	0.01	25	A
SB Approach	0.11	0.01	25	A	7.5	0.03	25	A
EB Approach	10.2	0.11	25	B	11.7	0.09	25	B
WB Approach	9	0.05	25	A	9	0.04	25	A
Estancia and Parcel 14A	2.9	-	-		2.3	-	-	
NB Left	7.4	0.01	25	A	7.6	0.03	25	A
EB Approach	9.2	0.08	25	A	9.6	0.05	25	A
Estancia and Parcel 14B	3.1	-	-		2.3	-	-	
NB Left	7.4	0.01	25	A	7.5	0.03	25	A
EB Approach	9.3	0.08	25	A	9.7	0.06	25	A
Estancia and 118th Street – RAB	3.5	-	-		3.6	-	-	
NB Approach	3.8	0.12	0	A	3.8	0.08	0	A
SB Approach	3.7	0.10	0	A	3.3	0.06	0	A
EB Approach	3.0	0.03	0	A	3.7	0.13	0	A
WB Approach	3.3	0.00	0	A	3.4	0.00	0	A
Estancia and Parcel 23A	2.2	-	-		1.2	-	-	
EB Approach	9.4	0.07	25	A	10	0.05	25	B
Estancia and Parcel 23B	6.8	-	-		3.4	-	-	
EB Approach	9.1	0.12	25	A	9.2	0.09	25	A
Estancia and Del Webb	0	-	-		0	-	-	
NB Approach	0	0	0	A	0	0	0	A
SB Approach	0	0	0	A	0	0	0	A
EB Approach	0	0	0	A	0	0	0	A
WB Approach	0	0	0	A	0	0	0	A
* – HCM 95th percentile queue rounded to next 25-foot increment								

6. 2030 NO BUILD

The existing intersection analyses consider only those intersections that exist today. The two entrances to the Inspiration subdivision and Arroyo Vista and eastbound ramps are the only existing intersections expected to remain unsignalized through full buildout.

The existing unsignalized intersections are expected to operate at overall acceptable levels of service in the 2030 No Build scenario. The eastbound left movement at Arroyo

Vista and eastbound ramps continues to operate at LOS F in both the AM and PM peak hours. The peak hour traffic signal warrant is not satisfied at the I-40 eastbound ramp due to the low volume of the eastbound left turn movement.

The results are summarized in Table 110 below. Intersection output is included in Appendix J.

Table 110 – Arroyo Vista and Inspiration Access
2030 No Build Existing Unsignalized Intersection Results

Intersection/Movement	2030 No Build AM Peak				2030 No Build PM Peak			
	Delay	v/c	Queue* (ft)	LOS	Delay	v/c	Queue* (ft)	LOS
Arroyo Vista and Inspiration West	6.5			A	3.2	-	-	A
SB Approach	8.8	.07	25	A	8.9	0.05	25	A
Arroyo Vista and Inspiration East	7.6			A	2.2	-	-	A
SB Approach	14.2	.40	50	B	11.2	0.15	25	B
Arroyo Vista and EB Ramps	1.5	-	-	A	37.1	-	-	C
EB Left	60.4	0.42	50	F	2,273	4.55	200	F

* – HCM 95th percentile queue rounded to next 25-foot increment

7. 2030 BUILD

a) *Existing Intersections*

The existing unsignalized intersections are expected to operate at overall acceptable levels of service in the 2030 Build scenario. Please see Figure 36 on page 79 to review the level of development in Phases 1-7 (2030).

With the extension of Arroyo Vista to Atrisco Vista, through traffic and build traffic will pass the entrances to the Inspiration subdivision. These intersections were evaluated with a half section (1 lane in each direction) and with a full section (2 lanes in each direction). These intersections were also analyzed with a one stage and a two-stage left turn movement. The Inspiration intersections are expected to operate at an overall acceptable level of service with a two-stage left turn movement in Phase 1 only with the full-section constructed on Arroyo Vista.

The intersection of Arroyo Vista and Inspiration West will continue to operate at an acceptable level of service with one stage left turn movements in both half section and full section scenarios.

The intersection of Arroyo Vista and Inspiration East will operate at an overall acceptable level of service with the half section, although movements of LOS F will still be

present. With the full section of the roadway the intersection is expected to operate with all movements LOS D or better with two stage left turn movements.

The intersection of Arroyo Vista and eastbound ramp continues to be LOS F with a one stage movement in the PM peak hour although both peak hours have the eastbound left movement of LOS F. With a two-stage analysis the AM peak hour improves to LOS D, although the PM level of service remains LOS F.

The results are summarized in Table 111 below. Intersection output is included in Appendix J.

Table 111 – 2030 Build Existing Unsignalized Intersection Results

Intersection/Movement	2030 Build AM Peak				2030 Build PM Peak			
	Delay	v/c	Queue* (ft)	LOS	Delay	v/c	Queue* (ft)	LOS
Arroyo Vista and Inspiration West (Half Section) SB Approach	1.7 33.1	- 0.35	- 50	A D	0.5 18.7	- 0.14	- 25	A C
Arroyo Vista and Inspiration East (One Stage) SB Approach	11.2 108.7	- 0.94	- 200	A F	126.4 4310	- 9.09	- 350	F F
Arroyo Vista and Inspiration East (Two Stage) SB Approach	3.2 30.7	- 0.54	- 75	A D	6.3 213.6	- 1.11	- 175	A F
Arroyo Vista and Inspiration West (Full Section) SB Approach	0.7 13.2	- 0.13	- 25	A B	0.5 19.2	- 0.15	- 25	A C
Arroyo Vista and Inspiration East (One Stage) SB Approach	3.3 32.2	- 0.55	- 100	A D	5.0 96.6	- 0.79	- 125	A F
Arroyo Vista and Inspiration East (Two Stage) SB Approach					1.7 33.2	- 0.44	- 75	A D
Arroyo Vista and EB Ramps (One Stage) EB Left	2.4 110.8	- 0.62	- 75	A F	55.4 3789	- 7.14	- 200	F F
Arroyo Vista and EB Ramps (Two Stage) EB Left	0.8 34.6	- 0.28	- 50	A D	11 754.8	- 1.92	- 175	A F

* – HCM 95th percentile queue rounded to next 25-foot increment

The intersections that had movements of LOS F were evaluated for a warranted traffic signal based on peak hour volumes and delay. The peak hour traffic signal warrant is not satisfied at any of the intersections due to the low volume of the eastbound left turn movement.

b) *Future Major Intersections*

The Future Major intersections evaluate the future unsignalized intersections that will be constructed during Phase 1. In 2030, these intersections are 1) Arroyo Vista and Atrisco Vista, 2) Arroyo Vista and Estancia Parkway, 3) Arroyo vista and Del Webb Parkway, and 4)

Atrisco Vista and the "118th Street" extension. Each of these intersections were evaluated with the half section constructed on Arroyo Vista (one lane in each direction)

The future major intersections were evaluated with two-way stop control. At the intersection of Arroyo Vista and Del Webb, and Arroyo Vista and Estancia, the minor streets had stop control, and the major street (Arroyo Vista) was uncontrolled. At Atrisco Vista and Arroyo Vista and at Atrisco Vista and 118th Street, Atrisco Vista was uncontrolled.

The four future major intersections are expected to operate at an acceptable level of service in Phases 1-7. The results are summarized in Table 112 below. Intersection output is included in Appendix K.

The intersections of Arroyo Vista and Estancia and Ladera and Parcel 37/25C are expected to have failing movements in the PM peak hour. These intersections were evaluated for warranted traffic signals based on peak hour volumes and delay. Arroyo Vista and Estancia and Ladera and Parcel 37/25C did not warrant traffic signals.

Table 112 – 2030 Build Future Unsignalized Intersection Results								
	2030 Build AM Peak				2030 Build PM Peak			
Intersection/Movement	Delay	v/c	Queue* (ft)	LOS	Delay	v/c	Queue* (ft)	LOS
Arroyo Vista and Del Webb	4.3	-	-	A	3.0	-	-	A
NB Approach	18.4	0.44	75	C	16	0.30	50	C
WB Approach	9.0	0.1	25	A	8.8	0.19	25	A
Arroyo Vista and Estancia	9.4	-	-	A	8.8	-	-	A
(One Stage WB Approach	7.7	0.12	25	A	9.0	0.39	50	A
Gap) NB Left	13.5	0.08	25	B	50.8	0.23	25	F
NB Right	12.7	0.53	100	B	10.7	0.35	50	B
Atrisco Vista and Arroyo Vista	3.2	-	-	A	2.6	-	-	A
NB Left	0	0	0	A	0	0	0	A
SB Approach	7.8	0.06	25	A	8.1	0.06	25	A
WB Approach	12.2	0.19	25	B	11.6	0.16	25	B
Atrisco Vista and 118th Street	5.1	-	-	A	3.6	-	-	A
NB Approach	0	0	0	A	0	0	0	A
SB Approach	7.7	0.01	0	A	8.6	0.04	25	A
WB Approach	17	0.39	50	C	19.7	0.35	50	C
Ladera and Parcel 24C	0.7	-	-	A	0.6	-	-	A
SB Approach	11.7	0.09	25	B	10.1	0.05	25	B
EB Approach	9.5	0.02	25	A	8.7	0.06	25	A
Ladera and Parcel 37/25C	3.4	-	-	A	3.7	-	-	A
(One Stage NB Approach	21.6	0.38	50	C	59.2	0.53	75	F
Gap) SB Approach	10.7	0.05	25	B	9.7	0.03	25	A
EB Approach	8.9	0.01	0	A	8.3	0.04	25	A
WB Approach	7.8	0.01	0	A	9.9	0.06	25	A
Ladera and Parcel 37/25C)					2.3	-	-	A
(Two Stage NB Approach					24.9	0.35	50	C
Gap) SB Approach					9.7	0.03	25	A
EB Approach					8.3	0.04	25	A
WB Approach					9.9	0.06	25	A
Ladera and Estancia	14.0	-	-	B	18.4	-	-	C
NB Approach	10.7	0.07	25	B	11.3	0.05	25	B
SB Approach	15.9	0.58	100	C	15.4	0.50	75	C
EB Approach	12.6	0.32	50	B	25.9	0.75	175	D
WB Approach	14.2	0.46	75	B	12.8	0.33	50	B
Ladera and Parcel 29A/26S	1.8	-	-	A	1.5	-	-	A
NB Approach	11.3	0.02	0	B	13.1	0.01	0	B
SB Approach	9.6	0.05	25	A	9.1	0.03	25	A
EB Approach	7.7	0.01	0	A	7.6	0.04	25	A
WB Approach	0	0	0	A	0	0	0	A
Ladera and Parcel 29B/27	8.2	-	-	A	6.6	-	-	A
NB Approach	10.9	0.13	25	B	13.2	0.12	25	B
SB Approach	8.7	0.11	25	A	8.6	0.08	25	A
EB Approach	7.3	0.03	25	A	7.4	0.09	25	A
WB Approach	0	0	0	A	0	0	0	A
* – HCM 95th percentile queue rounded to next 25-foot increment								

c) *Del Webb Intersections*

The Del Webb intersections consist of the entrances to the Del Webb subdivision.

The results indicate all the site entrances will operate at acceptable levels of service in Phases 1-7. The results are summarized in Table 113 below. Intersection output is included in Appendix K.

Table 113 – 2030 Build Del Webb Unsignalized Intersection Results

Intersection/Movement	2030 Build AM Peak				2030 Build PM Peak			
	Delay	v/c	Queue* (ft)	LOS	Delay	v/c	Queue* (ft)	LOS
Del Webb and Parcel 16/17N	1.4	-	-	A	0.9	-	-	A
NB Approach	0	0.00	0	A	7.8	0.01	0	A
SB Approach	7.7	0.01	0	A	7.5	0.01	0	A
EB Approach	11.1	0.05	25	B	1.6	0.04	25	B
WB Approach	9.4	0.01	0	A	9.3	0.01	0	A
Del Webb and Parcel 18A	1.3	-	-	A	0.8	-	-	A
NB Approach	0	0.00	0	A	7.7	0.01	0	A
EB Approach	10.1	0.05	25	B	10.6	0.04	25	B
Del Webb and Parcel 18B/Amenities	1.9	-	-	A	1.3	-	-	A
NB Approach	7.4	0.01	0	A	7.6	0.04	0	A
SB Approach	7.5	0.01	0	A	7.4	0.01	0	A
EB Approach	10	0.05	25	B	10.5	0.04	25	B
WB Approach	8.9	0.01	0	A	8.7	0.01	0	A
Del Webb and Parcel 17S/20A	2.2	-	-	A	1.5	-	-	A
NB Approach	0	0.00	0	A	7.5	0.01	0	A
SB Approach	7.4	0.01	0	A	7.4	0.01	0	A
EB Approach	10.3	0.04	25	B	10	0.03	25	B
WB Approach	8.8	0.01	0	A	8.8	0.01	0	A
Del Webb and Amenities	0.5	-	-	A	0.4	-	-	A
SB Approach	7.4	0.01	0	A	7.3	0.01	0	A
WB Approach	8.7	0.01	0	A	8.3	0.01	0	A
Del Webb and Parcel 22A	1	-	-	A	0.9	-	-	A
NB Approach	8.8	0.01	0	A	8.9	0.01	0	A
WB Approach	7.4	0.01	0	A	7.3	0.01	0	A
Del Webb and Parcel 22B/20B	2	-	-	A	1.7	-	-	A
NB Approach	8.8	0.01	0	A	8.8	0.01	0	A
SB Approach	9.1	0.02	0	A	9.2	0.01	0	A
EB Approach	7.3	0.01	0	A	7.4	0.01	0	A
WB Approach	7.3	0.01	0	A	7.3	0.01	0	A
Del Webb and Parcel 22C	1.1	-	-	A	0.9	-	-	A
NB Approach	8.8	0.02	0	A	8.7	0.01	0	A
WB Approach	7.4	0.01	0	A	7.3	0.01	0	A
Del Webb and Parcel 19	4.1	-	-	A	2.7	-	-	A
SB Approach	7.3	0.01	0	A	7.4	0.01	0	A
EB Approach	9.0	0.05	25	A	9.0	0.04	25	A
Del Webb and Parcel 22D	2.2	-	-	A	0.9	-	-	A
NB Approach	8.9	0.02	25	A	8.9	0.01	0	A
WB Approach	7.3	0.01	0	A	7.4	0.01	0	A

* – HCM 95th percentile queue rounded to next 25-foot increment

d) *Estancia Intersections*

The Estancia intersections consist of the entrances to the Estancia subdivision.

The results indicate all the site entrances will operate at acceptable levels of service in Phases 1-7. The results are summarized in Table 114 below. Intersection output is included in Appendix K.

Table 114 – 2030 Build Estancia Unsignalized Intersection Results								
Intersection/Movement	2030 Build AM Peak				2030 Build PM Peak			
	Delay	v/c	Queue* (ft)	LOS	Delay	v/c	Queue* (ft)	LOS
Estancia and Parcel 13A/15N	2.3	-	-	A	1.6	-	-	A
NB Left	7.6	0.01	0	A	8.6	0.01	0	A
SB Left	8.3	0.02	0	A	8.0	0.04	25	A
EB Left	11.5	0.11	25	B	16.6	0.12	25	C
EB Approach	9.1	0.02	25	A	10.1	0.01	0	B
WB Left	12.3	0.03	25	B	13.1	0.01	0	B
WB Approach	9.9	0.06	25	A	9.3	0.04	25	A
Estancia and Parcel 13B/15	4.5	-	-	A	4.8	-	-	A
NB Approach	5.4	0.27	25	A	4.6	0.19	25	A
SB Approach	3.5	0.10	0	A	5.5	0.31	25	A
EB Approach	3.5	0.07	0	A	4.2	0.06	0	A
WB Approach	4.1	0.05	0	A	3.4	0.03	0	A
Estancia and Parcel 13C/15S	3.1	-	-	A	2.3	-	-	A
NB Approach	7.5	0.01	0	A	8.0	0.01	0	A
SB Approach	7.7	0.01	0	A	7.6	0.03	25	A
EB Approach	11.1	0.13	25	B	13.7	0.12	25	B
WB Approach	9.5	0.05	25	A	9.5	0.03	25	A
Estancia and Parcel 14A	2.1	-	-	A	1.3	-	-	A
NB Left	7.4	0.01	0	A	7.8	0.01	0	A
EB Approach	9.9	0.09	25	A	10.7	0.07	25	B
Estancia and Parcel 14B	2.5	-	-	A	1.5	-	-	A
NB Left	7.4	0.01	0	A	7.6	0.01	0	A
EB Approach	9.6	0.08	25	A	10.1	0.06	25	B
Estancia and 118th Street	3.4	-	-	A	3.6	-	-	A
NB Approach	3.8	0.13	0	A	3.6	0.09	0	A
SB Approach	3.4	0.05	0	A	3.4	0.05	0	A
EB Approach	3.0	0.04	0	A	4.0	0.15	25	A
WB Approach	3.4	0.00	0	A	3.3	0.00	0	A
Estancia and Parcel 23A	1.5	-	-	A	1.2	-	-	A
NB Left	7.4	0.01	0	A	7.8	0.02	0	A
EB Approach	9.6	0.06	25	A	10.7	0.05	25	B
Estancia and Parcel 23B/23C	3.7	-	-	A	2.6	-	-	A
NB Left	7.4	0.01	0	A	7.8	0.03	25	A
EB Approach	9.9	0.15	25	A	11.0	0.12	25	B
Estancia and Del Webb	3.1	-	-	A	3.3	-	-	A
NB Approach	3.1	0.05	0	A	3.0	0.04	0	A
SB Approach	3.0	0.03	0	A	3.6	0.10	0	A
WB Approach	3.3	0.01	0	A	3.1	0.01	0	A
Estancia and Parcel 25A/24A & 26N	2.9	-	-	A	2.3	-	-	A
NB Approach	7.9	0.01	0	A	7.7	0.04	25	A
SB Approach	8.4	0.01	0	A	7.6	0.01	0	A
EB Approach	9.4	0.07	25	A	9.9	0.05	25	A
WB Approach	10.2	0.05	25	B	11.3	0.04	25	A
Estancia and Parcel 24/25 & 26	3.9	-	-	A	4.2	-	-	A
NB Approach	3.6	0.11	0	A	4.6	0.23	25	A
SB Approach	3.9	0.13	0	A	4.2	0.14	25	A
EB Approach	4.6	0.12	0	A	4.0	0.08	0	A
WB Approach	3.6	0.05	0	A	4.1	0.04	0	A

Estancia and Parcel 25B/24B & 26S	1.8	-	-	A	1.7	-	-	A
NB Approach	8.0	0.02	0	A	7.9	0.05	25	A
SB Approach	7.5	0.01	0	A	8.1	0.01	0	A
EB Approach	10	0.08	25	B	9.9	0.05	25	A
WB Approach	11.4	0.04	25	B	14.6	0.04	25	B
Estancia and Parcel 36A/29A	6	-	-	A	4.2	-	-	A
NB Approach	7.3	0.01	0	A	7.4	0.03	25	A
SB Approach	7.3	0.01	0	A	7.5	0.01	0	A
EB Approach	8.7	0.05	25	A	8.8	0.04	25	A
WB Approach	9.6	0.09	25	A	10.5	0.07	25	B
Estancia and Parcel 36B/32	4.4	-	-	A	3.2	-	-	A
NB Approach	7.6	0.01	0	A	7.5	0.04	25	A
SB Approach	7.4	0.01	0	A	7.8	0.01	0	A
EB Approach	9	0.06	25	A	8.9	0.04	25	B
WB Approach	10.6	0.14	25	B	12.9	0.13	25	
Estancia and Parcel 36C	1.4	-	-	A	1.2	-	-	A
SB Approach	9.5	0.01	0	A	7.7	0.04	25	A
EB Approach	7.9	0.06	25	A	9.3	0.04	25	A
* – HCM 95th percentile queue rounded to next 25-foot increment								

VI. FREEWAY ANALYSIS – 2019, 2022, 2025, AND 2030

A. FREEWAY ANALYSIS

1. INTRODUCTION

As stated previously, one purpose of this study is to provide an initial analysis of Interstate 40 to evaluate its existing operations and to determine the effects of the proposed development on the interstate.

This TIA alone will be insufficient to determine necessary improvements due to NMDOT and FHWA study procedures requirements, however it will provide an initial indication of the current operations and a study of the future conditions for the scenarios included in this report.

As this is a TIA, and as will be shown shortly, there is poor operational performance in both existing and future conditions, it is recommended that a more thorough analysis be conducted via an I-40 West Corridor Study conducted by the NMDOT. The previous intersection results presented for the Atrisco Vista interchange also suggests the I-40 West Corridor Study include consideration of the 118th Street interchange (as shown in multiple MRCOG MTP's) and/or improvements to other interchanges in order to accommodate growth that is likely to occur on Albuquerque's west side in the coming years.

2. ANALYSIS PROCEDURES AND TOOLS

A freeway analysis was performed to determine the freeway LOS at segments along I-40. The analysis looked at ramp diverging segments, merging segments, basic freeway segments, and weaving segments as present along the analysis area.

The freeway analysis focused on the freeway from west of the Atrisco Vista interchange to East of the Unser interchange. The study conducted analysis at these specific segments in the Eastbound and Westbound direction:

Eastbound I-40:	Basic Freeway west of Atrisco Vista interchange
	Diverge segment at Atrisco Vista interchange
	Basic Freeway between Atrisco Vista on/off ramps
	Merge segment at Atrisco Vista interchange
	Basic Freeway east of Atrisco Vista
	Diverge segment at Arroyo Vista/98th Street interchange

Basic Freeway between Atrisco Vista off/SB on ramps
Merge segment at SB Arroyo Vista on ramp
Basic Freeway between Arroyo Vista SB/NB on ramps
Weaving segment between Arroyo Vista and Unser
Basic Freeway between Unser off ramp and SB on ramp
Merge segment at SB Unser on ramp
Basic Freeway between Unser SB/NB on ramps
Merge segment at NB Unser on ramp
Basic Freeway east of Unser

Westbound I-40:
Basic Freeway east of Unser interchange
Diverge segment at Unser off ramp
Basic Freeway between Unser on/off ramps
Weaving segment between Unser on ramp and Arroyo Vista off ramp
Basic Freeway between Arroyo Vista on/off ramps
Merge segment at Arroyo Vista on ramp
Basic Freeway between Arroyo Vista and Atrisco Vista
Diverge segment at Atrisco Vista interchange
Basic Freeway between Atrisco Vista on/off ramps
Merge segment at Atrisco Vista interchange
Basic Freeway west of Atrisco Vista interchange

The segments were analyzed in the following conditions:

Existing condition (2019)
No Build 2022
Build 2022
No Build 2025
Build 2025
No Build 2030
Build 2030

Counts were collected at the Atrisco Vista Interchange as a basis of the freeway analysis and balanced based on the entering and exiting counts on each on/off ramp in the

study area. Where ramps terminated or originated from an arterial intersection, ramp volumes were not counted; ramp volumes were instead calculated from the intersection turn movement count and used to add or subtract volume to the interstate. Heavy vehicle percentages were also calculated using this method. A peak hour for the I-40 freeway was determined using the freeway counts. The AM peak hour occurred between 6:45 and 7:45 AM and the PM peak hour occurred between 4:00 and 5:00 PM.

In the study area, interstate 40 eastbound traffic produced an estimated average daily volume of 41,920 vehicles per day and an estimated peak hour volume of 4,100 vehicles per hour during the AM peak hours. Westbound traffic produced an estimated average daily volume of 50,100 vehicles per day and an estimated peak hour volume of 5,100 vehicles per hour during the PM peak hour

The analysis tool that was used for the freeway analysis was the Highway Capacity Manual Software (HCS7). All freeway merge, diverge, weave, and basic segments were analyzed. The pertinent data that was incorporated included 15-minute volumes, percent heavy vehicles, number of lanes, and length of acceleration/deceleration lanes. Additionally, free flow speed was taken as the posted speed limit. Multi-period analysis was performed with the available data, and the analysis began and ended with less than LOS F when the available data allowed this. HCS7 output analysis is included in the applicable appendices as described below.

3. EXISTING (2019) AND 2022 ANALYSIS – EASTBOUND

In the existing condition and 2022 No Build condition the eastbound freeway operates at acceptable levels of service with the facility LOS B in both AM and PM peak hours.

In the 2022 Build condition, the eastbound freeway operates at acceptable levels of service with the facility LOS B in the AM and PM peak hours, although one segment has LOS E for one 15-minute period during the AM peak period.

A summary of results for existing, 2022 No Build, and 2022 Build for the eastbound direction are summarized in Table 115.

Please note the results presented in this table, and all future freeway facilities tables, are the worst-case results for the multiple periods analyzed.

Also, please note the no build analyses is a "true" no build, and only includes background traffic growth and does not include previous phases of the Upper Petroglyph development in the analysis. This is true for all no build analysis results presented in this report.

Freeway output for existing conditions, 2022 No Build, and 2022 Build is included in Appendix L.

Table 115 – EB Freeway Segments Level of Service Results

I-40 Freeway Segment	AM Peak Hour			PM Peak Hour		
	Existing	2022 No Build	2022 Build	Existing	2022 No Build	2022 Build
West of Atrisco Vista	A	A	A	A	B	B
Diverge at Atrisco Vista	A	A	A	A	A	A
Basic Freeway between Atrisco Vista on/off ramps	A	A	A	A	A	A
Merge segment at Atrisco Vista interchange	A	A	A	A	A	A
Basic Freeway east of Atrisco Vista	B	B	B	B	B	B
Diverge segment at Arroyo Vista/98th Street interchange	A	A	A	A	A	A
Basic Freeway between Atrisco Vista off/SB on ramps	B	B	B	A	B	B
Merge segment at SB Arroyo Vista on ramp	A	A	A	A	A	A
Basic Freeway between Arroyo Vista SB/NB on ramps	B	B	C	B	B	B
Weaving segment between Arroyo Vista and Unser	C	C	C	B	B	B
Basic Freeway between Unser off ramp and SB on ramp	D	D	E	B	B	C
Merge segment at SB Unser on ramp	C	C	C	B	B	B
Basic Freeway between Unser SB/NB on ramps	C	C	C	B	B	B
Merge segment at NB Unser on ramp	C	C	C	B	B	B
Basic Freeway east of Unser	D	D	D	B	B	B
Facility Results	B	B	B	B	B	B

4. 2025 AND 2030 ANALYSIS – EASTBOUND

In the 2025 No Build condition and the 2025 Build condition the eastbound freeway does not operate at acceptable levels of service with the facility LOS F in the AM with two (2) segments that are LOS F. The PM peak hour does operate at an acceptable level of service with LOS B.

In the 2030 No Build and Build condition, the eastbound freeway continues to operate at unacceptable levels of service with the facility LOS F in the AM with two (2) segments that are LOS F. The PM peak hour does operate at an acceptable level of service with LOS B.

A summary of results for 2025 No Build, 2025 Build, 2030 No Build, and 2030 Build for the eastbound direction are summarized in Table 116. Freeway output for 2025 No Build, 2025 Build, 2030 No Build, and 2030 Build are included in Appendix L.

Table 116 – EB Freeway Segments Level of Service Results

I-40 Freeway Segment	AM Peak Hour				PM Peak Hour			
	2025 No Build	2025 Build	2030 No Build	2030 Build	2025 No Build	2025 Build	2030 No Build	2030 Build
West of Atrisco Vista	A	A	A	A	B	B	B	B
Diverge at Atrisco Vista	A	A	A	A	A	A	A	A
Basic Freeway between Atrisco Vista on/off ramps	A	A	A	A	B	B	B	B
Merge segment at Atrisco Vista interchange	A	A	A	A	A	A	A	B
Basic Freeway east of Atrisco Vista	B	B	B	B	B	B	B	C
Diverge segment at Arroyo Vista/98th Street interchange	A	A	A	A	A	A	A	B
Basic Freeway between Atrisco Vista off/SB on ramps	B	B	B	B	B	B	B	C
Merge segment at SB Arroyo Vista on ramp	A	B	A	B	A	A	A	B
Basic Freeway between Arroyo Vista SB/NB on ramps	B	B	B	B	B	B	B	C
Weaving segment between Arroyo Vista and Unser	F	F	F	F	B	B	B	C
Basic Freeway between Unser off ramp and SB on ramp	C	F	F	F	C	C	C	D
Merge segment at SB Unser on ramp	B	B	C	C	B	B	B	C
Basic Freeway between Unser SB/NB on ramps	B	B	C	C	B	B	B	C
Merge segment at NB Unser on ramp	B	B	B	B	B	B	B	B
Basic Freeway east of Unser	C	C	C	F	B	C	C	C
Facility Results	F	F	F	F	B	B	B	C

5. EXISTING (2019) AND 2022 ANALYSIS – WESTBOUND

In the existing condition, the westbound freeway does not operate at acceptable levels of service in the PM with the facility LOS F with three (3) segments that are LOS F, all near the Unser interchange. The AM peak hour does operate at an acceptable level of service with LOS A.

In the 2022 No Build, and 2022 Build conditions, the westbound freeway does not operate at acceptable levels of service in the PM with the facility LOS F, now with four (4) segments that operate at LOS F, with LOS F extending to the Arroyo Vista interchange. The AM peak hour does operate at an acceptable level of service with LOS A.

A summary of results for existing, 2022 No Build and 2022 Build for the westbound direction are summarized in Table 117. Freeway output for existing, 2022 No Build and 2022 Build are included in Appendix L.

Table 117 – WB Freeway Segments Level of Service Results

I-40 Freeway Segment	AM Peak Hour			PM Peak Hour		
	Existing	2022 No Build	2022 Build	Existing	2022 No Build	2022 Build
Basic Freeway east of Unser interchange	B	B	B	F	F	F
Diverge segment at Unser off ramp	A	A	A	F	F	F
Basic Freeway between Unser on/off ramps	B	B	C	F	F	F
Weaving segment between Unser on ramp and Arroyo Vista off ramp	B	B	B	C	F	F
Basic Freeway between Arroyo Vista on/off ramps	B	B	B	A	A	A
Merge segment at Arroyo Vista on ramp	A	A	A	A	A	A
Basic Freeway between Arroyo Vista and Atrisco Vista	A	A	A	A	A	A
Diverge segment at Atrisco Vista interchange	A	A	A	A	A	A
Basic Freeway between Atrisco Vista on/off ramps	A	A	A	A	A	A
Merge segment at Atrisco Vista interchange	A	A	A	A	A	A
Basic Freeway west of Atrisco Vista interchange	A	A	A	A	A	A
Facility Results	A	A	A	F	F	F

6. 2025 AND 2030 ANALYSIS – WESTBOUND

In the 2025 No Build condition, 2030 No Build condition and the 2030 Build condition the westbound freeway again does not operate at acceptable levels of service in the PM peak hour with facility LOS F with four (4) segments that operate at LOS F. The AM peak hour does operate at an acceptable level of service with LOS B.

In the 2025 Build condition the westbound freeway does not operate at acceptable levels of service in the PM peak hour with facility LOS F with four (4) segments that operate at LOS F. The AM peak hour does operate at an acceptable level of service with LOS A.

A summary of results for 2025 No Build, 2025 Build, 2030 No Build, and 2030 Build for the westbound direction are summarized in Table 118. Freeway output for 2025 No Build, 2025 Build, 2030 No Build, and 2030 Build are included in Appendix L.

Table 118 – WB Freeway Segments Level of Service Results

I-40 Freeway Segment	AM Peak Hour				PM Peak Hour			
	2025 No Build	2025 Build	2030 No Build	2030 Build	2025 No Build	2025 Build	2030 No Build	2030 Build
Basic Freeway east of Unser interchange	B	B	B	C	F	F	F	F
Diverge segment at Unser off ramp	A	A	A	A	F	F	F	F
Basic Freeway between Unser on/off ramps	C	C	C	D	F	F	F	F
Weaving segment between Unser on ramp and Arroyo Vista off ramp	B	B	B	B	F	F	F	F
Basic Freeway between Arroyo Vista on/off ramps	B	B	B	B	A	A	A	A
Merge segment at Arroyo Vista on ramp	A	A	A	B	A	A	A	A
Basic Freeway between Arroyo Vista and Atrisco Vista	A	A	A	B	A	A	A	A
Diverge segment at Atrisco Vista interchange	A	A	A	A	A	A	A	A
Basic Freeway between Atrisco Vista on/off ramps	A	A	A	A	A	A	A	A
Merge segment at Atrisco Vista interchange	A	A	A	A	A	A	A	A
Basic Freeway west of Atrisco Vista interchange	A	A	A	A	A	A	A	A
Facility Results	B	A	B	B	F	F	F	F

7. FREEWAY ANALYSIS DISCUSSION

The eastbound freeway would need one additional lane from the southbound on ramp at Arroyo Vista to the east of the Unser interchange to relieve the interstate of some congestion. This analysis showed that there would be no segments with LOS F or E but further analysis will be needed to determine specific options to adding a lane to the existing eastbound lanes.

The 2030 Build analysis shows that a majority of the traffic that is causing delay and backup exits the freeway at the Arroyo Vista interchange. Adding two lanes does not substantially change the results of the analysis so a more in-depth analysis of the freeway, which is not a part of the scope of this study, will be needed to determine likely recommendations to reach acceptable levels of service along the westbound freeway.

B. FREEWAY ANALYSIS CONCLUSIONS

The existing PM peak hour conditions for westbound I-40 operates at LOS F, and even without additional development of Upper Petroglyphs eastbound I-40l have LOS F in the near future (2025 No Build as analyzed in this report).

C. FREEWAY ANALYSIS RECOMMENDATIONS

It is recommended the NMDOT initiate a West I-40 Corridor Study to perform a full and complete Locations Studies Procedures Study to evaluate options for improving freeway operations and to maintain acceptable levels of service.

VII. CONCLUSIONS AND RECOMMENDATIONS

A. CONCLUSIONS

1. ALTERNATIVE INTERSECTION DESIGN CONSIDERATIONS

It is understood that signalized intersections should not be the default solution for intersections that have more volume than can be accommodated with two-way or all-way stop control. However, the intersection of Central and Atrisco Vista has characteristics that make other alternatives, such as a roundabout, median U-turn (MUT), restricted crossing U-turn (RCUT), and displaced left-turn (DLT) undesirable. This is due to the relatively large number of large vehicles (City of Albuquerque garbage trucks destined to the Cerro Colorado landfill) and semi-trucks (destined to the Love's truck stop and repair facilities in the area) that are present (13% – 28% in the AM, Noon and PM peak hours).

These large vehicles, and the frequency they are present, would present challenges and possible safety concerns in the U-turn alternative intersection designs. The close proximity of the I-40 Eastbound ramp and Love's Truck Stop, as well as right-of-way constraints, also limits the viability of the displaced left turn alternative design.

A roundabout at Atrisco and Central is also problematic due to the heavy truck traffic and the impact that would have truck tracking through the roundabout. Although that may be able to be overcome in design, it would severely limit the likelihood of progression from Central through the interchange.

The above concerns also pose the same challenge at the Atrisco Vista and North Frontage Road intersection north of the interchange, as that intersection is also in close proximity to the I-40 Westbound Ramp. However, that intersection (the North Frontage Road) does not have the City of Albuquerque garbage trucks and has a lower truck volume, 6% – 20% in the AM, Noon, and PM peak hours.

The other intersections along Atrisco Vista could be considered for alternative intersection designs as development proceeds, although again, the lands to the west of Atrisco Vista is zoned for industrial, manufacturing, and warehouse uses that will need to be considered in any design.

2. EXISTING CONDITIONS

Under existing 2019 conditions most intersections operate at acceptable levels of service with the exception of several existing intersections. At the signalized intersection of

Unser and Tierra Pintada, the intersection operates at LOS E in the AM and LOC C in the PM peak hour with movements of LOS F in both peak hours and has six (6) 15-minute periods where the v/c value is above 1, meaning the intersection is over capacity. The intersection of Unser and eastbound ramp operates at LOS F in both AM and PM peak hours although this intersection meets signal warrants and operates at acceptable levels of service once signalized.

3. 2022 BUILD

Under 2022 Build conditions most intersections continue to operate at acceptable levels of service although an existing intersection continues to operate poorly. At the signalized intersection of Unser and Tierra Pintada, the intersection operates at LOS F in the AM and LOS D in the PM peak hour although a signal timing optimization changes the level of service to LOS C in both AM and PM peak hours.

The unsignalized intersection of Atrisco Vista and westbound ramp operates at LOS A in the AM and LOS B in the PM peak hour with movements of LOS F in both peak hours. This intersection warrants a traffic signal in the 2022 Build conditions which improves the level of service to LOS B in both AM and PM peak hours.

The eastbound left turn at the unsignalized intersection of 98th Street and I-40 Eastbound ramp will operate at LOS F with either a one-stage or two-stage left turn in the PM peak hour. This intersection does not have sufficient volume to warrant a traffic signal in the peak hour

All unsignalized intersection, including roundabouts, in the development site on Estancia and Del Webb which are built during the 2022 Build year also operate at acceptable levels of service with LOS A in both AM and PM peak hours.

4. 2025 BUILD

Under 2025 Build conditions most intersections continue to operate at acceptable levels of service although several intersections warrant traffic signals which improve those intersections levels of service. Signals are warranted at the intersection of Atrisco Vista and eastbound I-40, Atrisco Vista and Central and Arroyo Vista and eastbound I-40. At the signalized intersection of Unser and Tierra Pintada, the intersection operates at LOS F in the AM and LOS D in the PM peak hour although a signal timing optimization improves the level of service to LOS C in both AM and PM peak hours. The signalized intersection of Unser and Ladera has LOS D in both the AM and PM peak hours. A signal optimization was done but it did not improve this intersection.

All unsignalized intersection, including roundabouts, in the development site on Estancia and Del Webb which are built before or during the 2025 Build year also operate at acceptable overall levels of service with LOS A in both AM and PM peak hours.

5. 2030 BUILD

Under 2030 Build conditions most intersections continue to operate at acceptable levels of service although several intersections warrant traffic signals which improve those intersections level of service. Signals are warranted along Atrisco Vista at Frontage, Comfort Way, and Ladera. All these warrants are the peak hour warrant which is appropriate under the conditions of the Manual on Uniform Traffic Control Devices due to large influx of traffic during the peak hours due to employments use. At the signalized intersection of Unser and Tierra Pintada, the intersection operates at LOS F in the AM and PM peak hour although a signal timing optimization improves the level of service to LOS C in both AM and PM peak hours. The signalized intersection of Unser and Ladera has LOS D in the AM and LOS F in the PM peak hour and has seven (7) 15-minute periods where the v/c value is above 1, meaning the intersection will be over capacity at full buildout of the development.

All unsignalized intersection, including roundabouts, in the development site on Estancia and Del Webb which are built before or during the 2030 Build year also operate at acceptable overall levels of service with LOS A in both AM and PM peak hours. The intersection of Estancia and Arroyo Vista does have the northbound left movement that is LOS E with delay of 37.3 seconds, but this intersection does not meet signal warrants.

Although many intersections operate at overall acceptable levels of service, some intersections will need approach lane modifications to achieve acceptable operations.

The intersection of Atrisco Vista and I-40 eastbound will require a second southbound left turn lane to achieve acceptable delay. This left turn lane exists on the overpass and only needs to be re-striped to allow the second southbound left. The intersection is expected to operate at overall acceptable levels of service with the second left turn lane.

The intersection of Atrisco Vista and I-40 westbound will require a third westbound right turn lane to be constructed. Westbound right will experience queueing of 650 feet in the PM and will likely require widening of the ramp to accommodate this queue. It is likely the proposed 118th Street interchange will reduce the right turn volume at this intersection, and hopefully lead to the third right turn lane not being required. Evaluation of this scenario is beyond the scope of the Upper Petroglyphs study.

The intersection of Atrisco Vista and Frontage will require a third northbound lane to be constructed to accommodate the third westbound right at the westbound ramp, if the 118th Street interchange is not constructed. A traffic signal will be warranted, primarily due to the large traffic volume of the Upper Petroglyphs development.

The intersection of Atrisco Vista and Comfort Way will require a second north and southbound lane to be constructed. The analysis includes the proposed lane configuration with a westbound leg consisting of a westbound left turn lane and a thru/right turn lane.

The intersection of Atrisco Vista and Ladera will require a second north and southbound lane to be constructed. The analysis includes the proposed lane configuration with a westbound leg consisting of two westbound left turn lanes and a thru/right turn lane.

6. FREEWAY

The existing PM peak hour conditions for westbound I-40 operates at LOS F, and even without additional development of Upper Petroglyphs eastbound I-40l have LOS F in the near future (2025 No Build as analyzed in this report).

B. RECOMMENDATIONS

1. GENERAL

- As traffic studies typically have no more than a four-year life due to changing conditions, it is recommended that detailed traffic studies be completed to evaluate this development as it proceeds, at approximately at 4-year intervals. A large phased analysis such as this can generally be replaced by the 4-year cycle of the MRCOG MTP analysis to identify large infrastructure needs, or as needed as significant changes occur, such as phasing of developments (much faster development than anticipated). It is also recommended that future studies be limited to the Arroyo Vista and Atrisco Vista corridors, due to the limited traffic assigned to Unser Boulevard. These future studies should be used to develop the required mitigation at the time of the study.
- It is recommended the NMDOT initiate a West I-40 Corridor Study to perform a full and complete Locations Studies Procedures Study to evaluate options for improving freeway operations and to maintain acceptable levels of service. This study should include consideration of the 118th Street interchange as one of the alternatives to relieve congestion at the Atrisco Vista interchange and to reduce the improvements needed along Atrisco Vista. Recent studies also have found poor operation at 98th

Street and Central, primarily due to north/south traffic that would likely benefit from additional access to I-40 to serve the land south and north of I-40 between 98th Street and Atrisco Vista.

- All recommended designs shall satisfy Bernalillo County Public Works, NMDOT, COA, and Manual on Uniform Traffic Control Devices (MUTCD) requirements.

2. EXISTING RECOMMENDATIONS

- A signal should be constructed at the intersection of Unser and I-40 eastbound off-ramp. This signal is warranted in existing conditions without the development generating traffic. This intersection should be evaluated for a possible "High-Tee" configuration to limit impacts to the northbound through traffic progression.

3. 2022 RECOMMENDATIONS

- At minimum, a half section of Arroyo Vista should be constructed from the existing roadway up the escarpment to connect to Del Webb Parkway and Estancia Parkway. These intersections should be two-way stop controlled, with Arroyo Vista uncontrolled. Extension of Arroyo Vista to Atrisco Vista should be considered, as a two-way stop-controlled intersection, with Atrisco Vista uncontrolled.
- Whenever Arroyo Vista is connected to Atrisco Vista, it is recommended that advance signing be placed on Atrisco Vista to alert drivers to the changed condition. This should also be done when Arroyo Vista is used as a construction entrance, with the same improvements as discussed above (turn lanes and acceleration lane).
- A signal should be constructed at the intersection of Atrisco Vista and I-40 westbound by 2022 buildout. Coordination between this development and the project Chico development should occur to construct both I-40 ramp signals concurrently to allow the signals to be coordinated through the Atrisco Vista corridor.
- Due to the high delay for the eastbound left turn movement at the 98th Street and I-40 eastbound ramp, is another location where a "High-Tee" configuration should be considered to promote two-stage left turns in a safer manner than under the current configuration. The need for this improvement should be monitored to determine when it is best to construct this improvement.

4. 2025 RECOMMENDATIONS

As the development proceeds, and future traffic studies are prepared, the need for improvements will continually be refined. The following improvement recommendations are general in nature and should be revised as future traffic studies are conducted.

- At minimum, a half section of Arroyo Vista should be constructed from the existing roadway up the escarpment to connect to Atrisco Vista with a two-way stop condition. A northbound right turn lane and a southbound left turn lane should be constructed on Atrisco Vista. A westbound-to-southbound acceleration should be considered.
- A signal should be constructed at the intersection of Atrisco Vista and Central, and the intersection of Arroyo Vista and eastbound ramp. The signal on Atrisco Vista should be coordinated along the Atrisco Vista corridor to optimize the flow of traffic through the corridor.
- Optimization of existing signal timing should occur at the intersections of Unser and Tierra Pintada and Unser and Ladera. This optimization should not conflict with the coordination of the signals on Unser.
- Construction of "118th Street" to connect Estancia Parkway to Atrisco Vista with a two-way stop condition on 118th Street. The intersection approaches for the westbound leg should have a dedicated right and dedicated left lane. A northbound right turn lane and southbound left turn lane should be constructed.

5. 2030 RECOMMENDATIONS

As the development proceeds, and future traffic studies are prepared, the need for improvements will continually be refined. The following improvements are general in nature and should be revised as future traffic studies are conducted.

- At minimum, a full section of Arroyo Vista should be constructed from the existing roadway through the intersections of Inspiration.
- The second southbound left turn lane should be provided at the intersection of Atrisco Vista and I-40 eastbound by re-striping the existing bridge that currently has the second left striped out.
- Three westbound right turn lanes should be constructed at the intersection of Atrisco Vista and I-40 westbound based on the generation of traffic as discussed. As mentioned, this improvement may not be necessary if the proposed 118th Street interchange is constructed to serve lands south and north of I-40. Other studies have

found the intersection of 98th Street and Central operates at extremely poor service due to high north/south traffic volumes. A new interchange would also serve to improve regional traffic congestion along 98th Street.

- A third northbound lane should be constructed at the intersections of Atrisco Vista and Frontage based on the generation of traffic as discussed in this development. Again, this improvement may not be necessary if the proposed 118th Street interchange is constructed.
- Signals should be constructed at the intersections of Ladera, Comfort Way and Frontage along Atrisco Vista based on the generation of traffic. The signalized intersections on Atrisco Vista should be coordinated along the Atrisco Vista corridor to optimize the flow of traffic through the corridor.
- A southbound dedicated left turning lane should be constructed at the intersections of Atrisco Vista and Ladera and Atrisco Vista and Comfort Way
- A northbound dedicated right turn lane and southbound left turn lane should be constructed at the intersections of Atrisco Vista and Ladera and Atrisco Vista and Comfort Way