Memorandum

HT#R16D099
received
6/15/2021

To: Brennon Williams – Planning Department Director
(Albuquerque, New Mexico)

From: Roxanne Medina, PE, PTOE (Huitt-Zollars)

Subject: Montage Units Charter School Neighborhood Impact Assessment (NIA)

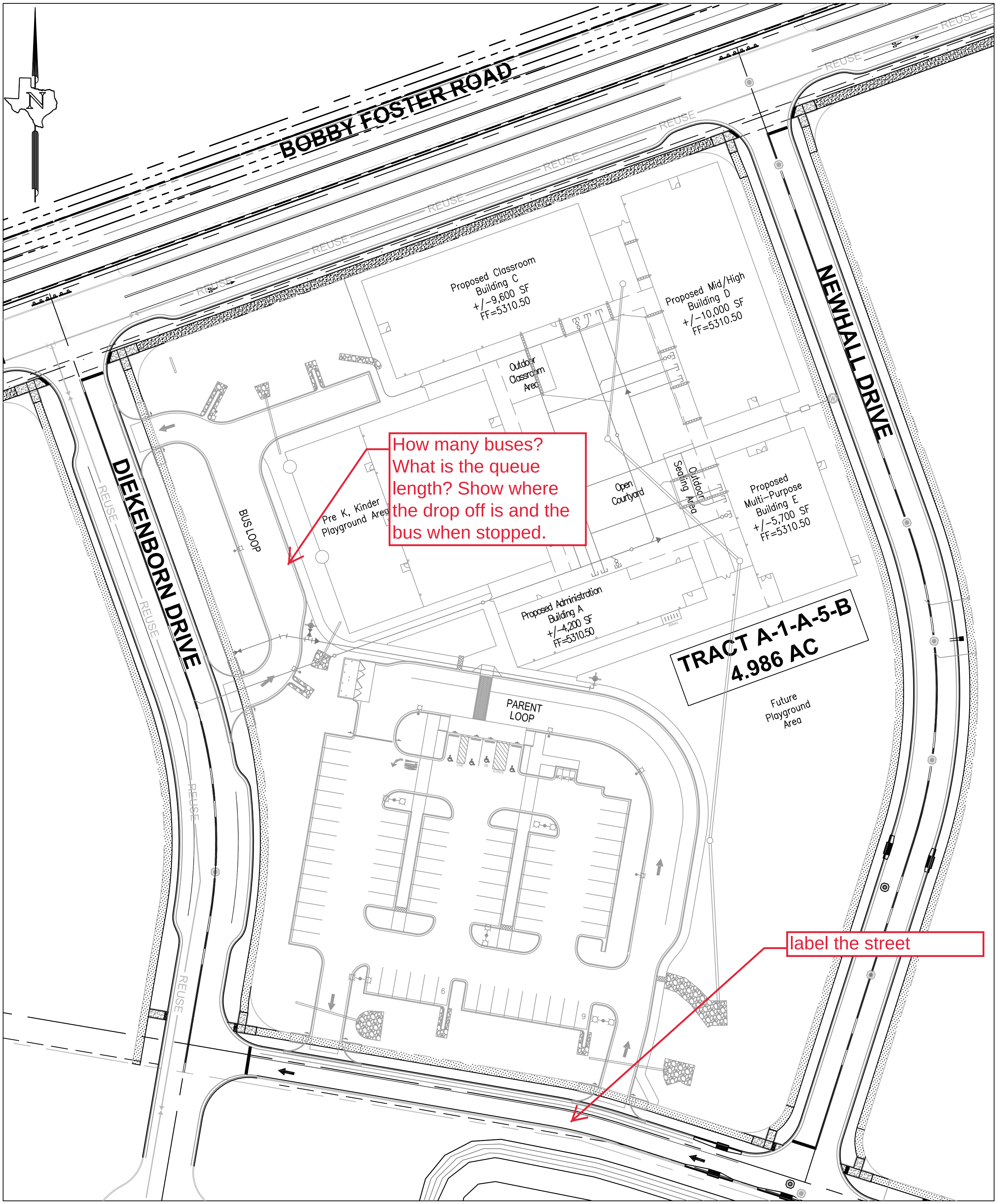
Date: June 15, 2021

SECTION 1 - INTRODUCTION

The City of Albuquerque, New Mexico amended Ordinance Chapter 6, Article 5, Part 4, Section 3 ROA 1994 with Bill F/S 0-13-61 on January 22, 2014. This ordinance requires a Neighborhood Impact Assessment (NIA) to mitigate impacts of a Public, Private, or Charter School prior to approval of a Curb-cut application. This technical memorandum analyzes the impacts of the proposed K-12 Charter School in the proposed Montage Units subdivision in Albuquerque, New Mexico.

1.1 Site Location / Study Area

The proposed Charter School will be located on the south side of Bobby Foster Rd. and west of University Blvd. The proposed site is approximately 4.99 acres and is expected to service 200 students from K-12. Currently, the sites for the proposed development is vacant. **Figure 1** identifies the project areas in relation to the surrounding roadway network. The proposed development will abut two new roads including Newhall Dr and Diekemborn Dr, and two existing roadway, Stieglitz Ave and Bobby Foster Rd. Bobby Foster Rd will be widened and realigned to connect at the intersection of University Blvd and Eastman Crossing. The proposed charter school will connect to Diekemborn Dr with two connections (one entrance and one exit) to Diekemborn Dr for a bus loop and two connection to Stieglitz Ave (one entrance and one exit) for a parent loop and parking lot access. Surrounding streets and subdivisions are also identified **Figure 1**. **Figure 2** shows the proposed site plan for the Charter School Site development.



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Montage Units Charter School
Neighborhood Impact Assessment
Charter School Site Development

Figure
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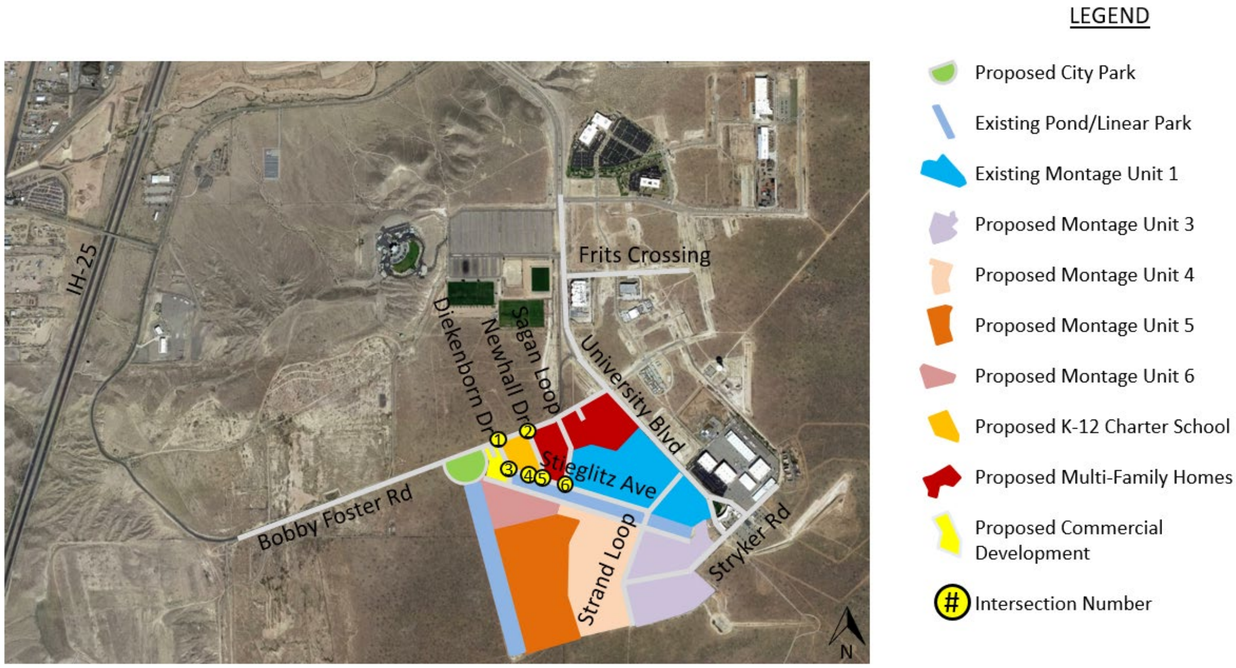


Figure 1 - Study Area

Six major intersections around the development were investigated for this study. **Table 1** lists the intersections investigated, the numbering convention used in this report, and the intersection control type. The study intersections are also identified with corresponding intersection numbers in **Figure 1**.

Table 1 – Intersections Identified for Impact Analysis Numbering and Control Type

Intersection Numbering	Location	Control Type
1	Bobby Foster Rd and Diekenborn	Unsignalized
2	Bobby Foster Rd and Newhall Dr	Unsignalized
3	Stieglitz Ave and Diekenborn Dr	Unsignalized
4	Stieglitz Ave and Entrance Driveway	Unsignalized
5	Stieglitz Ave and Newhall Dr	Unsignalized
6	Stieglitz Ave and Sagan Loop	Unsignalized

Correct the spelling to Diebenkorn throughout

Intersection 1 will be an unsignalized three-leg intersection at Bobby Foster Rd and Diekenborn Dr. Northbound Diekenborn Dr will include one stop controlled shared left-through-right turn lane. Eastbound Bobby Foster Rd will include one through lane, and one shared through-right turn lane. Westbound Bobby Foster Rd will include one through lane, and one shared through-left turn lane.

Intersection 2 will be an unsignalized three-leg intersection at Bobby Foster Rd and Newhall Dr. Northbound Newhall Dr will include one stop controlled shared left-through-right turn lane.

Eastbound Bobby Foster Rd will include one through lane, and one shared through-right turn lane. Westbound Bobby Foster Rd will include one through lane, and one shared through-left turn lane.

Intersection 3 is an unsignalized three-leg intersection at Steiglitz Ave and Diekenborn Dr. It includes one stop controlled westbound shared left-right-turn lane on Steiglitz Ave. Northbound Diekenborn Dr includes a through lane. Southbound Diekenborn Dr includes one through lane.

Intersection 4 is an unsignalized three-leg intersection at Steiglitz Ave and the entrance driveway to the proposed parent loop/parking lot at the Charter School. It includes one westbound shared through-right-turn lane on Steiglitz Ave. The eastbound and southbound lanes only have one receiving lane each and no outbound lanes.

Intersection 5 is an unsignalized three-leg intersection at Steiglitz Ave and Newhall Dr. It includes one stop controlled southbound shared left-right turn lane on Newhall Dr. Westbound Steiglitz Ave includes a shared through-right-turn lane. Since Steiglitz Ave is a one-way roadway, eastbound Steiglitz Ave only has one receiving lane each.

Intersection 6 is an unsignalized four-leg intersection at Steiglitz Ave and Sagan Loop. It includes one stop controlled westbound shared left-through-right-turn lane on Steiglitz Ave. Eastbound Steiglitz Ave only has one receiving lane each and no outbound lanes. Northbound Sagan Loop includes one shared through-left-turn lane. Southbound Sagan Loop includes one shared through-right-turn lane.

1.2 Existing Zoning

The proposed development is classified as PC according to the City of Albuquerque Zoning Map, which is provided in **Figure 3**. Zoning PC represents a Planned Community zone. To the south, east, and west of the proposed development are also classified as PC zones. To the north of the proposed development is a park and open space zone.

Montage Units Albuquerque, New Mexico

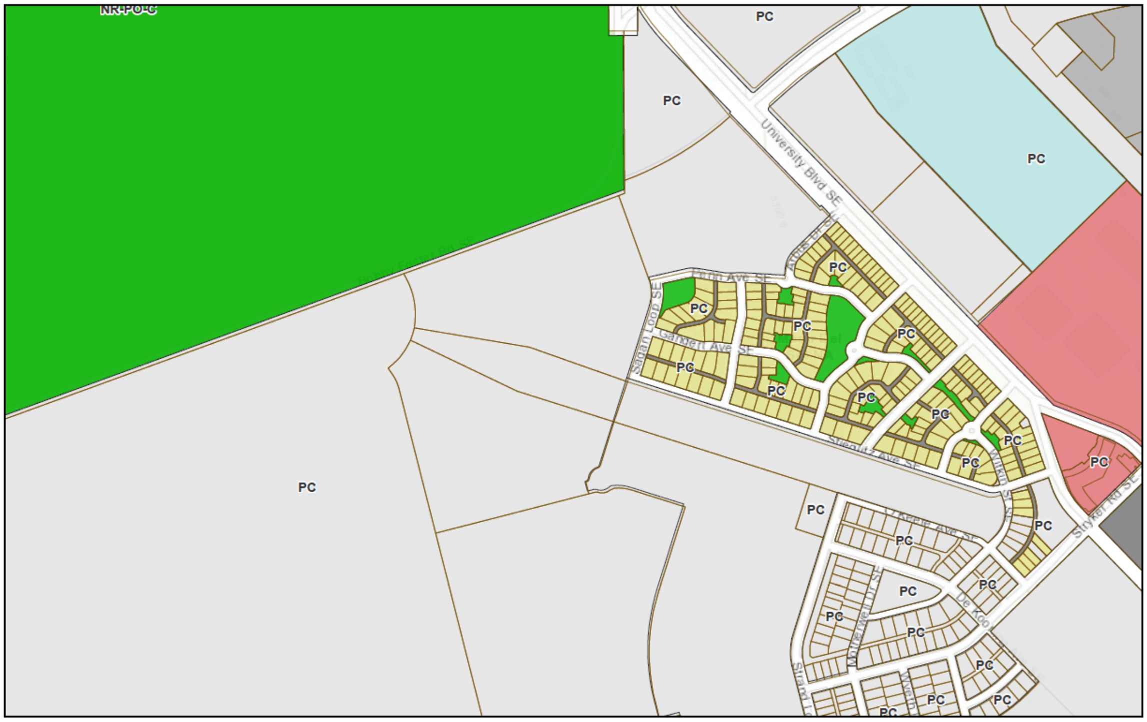


Figure 3 - Study Area Zoning Map

1.3 Existing Developments

Surrounding the proposed development are mainly undeveloped lots, one residential development to the southeast (Montage Unit 1), and one commercial service development (Albuquerque Studios) to the southeast. To the east of the proposed Charter School there are plans for a multi-family home development and to the south are plans for four detached single-family developments (Montage Units 3-6). To the west of the proposed Charter School is a proposed 14,000 sf commercial development. The Montage Units and Multi-Family developments are within the project area and incorporated into this study since trips from these developments will have the Charter School as a destination. The Montage Unit 1, Montage Unit 3, Montage Unit 4, Montage Unit 5, Montage Unit 6, and Multi-Family developments are estimated to have 200, 150, 200, 175, 85, and 288 units, respectively.

SECTION 2 - METHODOLOGY

To determine the neighborhood impacts of the proposed charter school, a queue analysis; a pedestrian and bicycle circulation and routes analysis; a pedestrian and vehicle conflict analysis; and a transit route analysis were conducted. The following sections summarize the methodology for each analysis.

There is no figure 2 in the memo

2.1 Queue/Noise and Air Quality Impact Analysis

Since noise and air quality are correlated to queued vehicles, a queue analysis was conducted in this study. This analysis checked that the proposed queue length within the school site parent drop off area (**Figure 2**) was not exceeded by the queue expected during the highest peak hour. The expected queue length was calculated using a service rate for drop-off and an arrival distribution from data collected in a traffic modeling study for Mountain View Middle School in Holden, Massachusetts by the Worcester Polytechnic Institute. This data is provided in **Appendix A**. The service time for each vehicle was calculated from when a car dropping of a student parked until the car began to move. If more than one vehicle was dropping off a student, the service time was calculated from when the first vehicle stopped until the last vehicle departed. The average service time of 19 seconds per vehicle was used in this study. For the arrival distribution, the percent of vehicles arriving every five minutes prior to the school start was determined. **Table 2** below shows the percent distribution of vehicles arriving during the peak hour.

Is there any assurance that this will be the temporal distribution for arrivals? Will the school allow drop-off 45 minutes before

Table 2 – Percent Distribution for a School during the Peak Hour

Time Prior to School Start	% Distribution
> 45 min prior	*-
45 min prior	7%
40 min prior	7%
35 min prior	6%
30 min prior	7%
25 min prior	13%
20 min prior	19%
15 min prior	20%
10 min prior	16%
5 min prior	4%

*-No data available

This is a Charter school. Are the students living within 1/4 mile of the school? What is the % expected to be farther than 1/4 mile?

2.2 Pedestrian and Bicycle Circulation and Routes Analysis

Since the average American will more likely walk rather than drive within a distance of 0.25 mile, routes within a 0.25 mile radius to and from the proposed charter school will be evaluated using the American Association of State Highway and Transportation Officials (AASHTO) Guide for the Planning, Design, and Operation of Pedestrian Facilities. Routes will be evaluated to determine whether sidewalks, bike routes, and other safety features to keep pedestrians safe are present.

2.3 Pedestrian and Vehicle Conflict Analysis

To determine the pedestrian and vehicle conflicts, the Pedestrian Level of Service (LOS), and control delay were determined.

Pedestrian LOS at two-way stopped controlled (TWSC) intersections is a measure of pedestrians crossing a traffic stream not controlled by as stop sign. The LOS describes the quality of traffic operation on roadway facilities. The traffic capacity of intersections was evaluated to determine the LOS for the AM and PM peak-hours. The Highway Capacity Manual defines the LOS and is widely used for traffic engineering studies. LOS range from A (best) to F (poorest). **Table 3** outlines the LOS definitions for pedestrians at a TWSC intersection.

Table 3 – Level of Service Intersection Standards (Adapted from the HCM 6th Edition)

LOS	Control Delay (sec/pedestrian group)	Traffic Flow Characteristics
A	0-5	Usually no conflicting traffic.
B	>5-10	Occasionally some delay due to conflicting traffic.
C	>10-20	Delay noticeable to pedestrians, but not inconveniencing.
D	>20-30	Delay noticeable and irritating, increased likelihood of risk taking.
E	>30-45	Delay approaches tolerance level, risk-taking behavior likely.
F	>45	Delay exceeds tolerance level, high likelihood of pedestrian risk taking.

< = less than > = greater than

Control delay is calculated for the entire crosswalk for each crosswalk not controlled by as stop sign. When a median is present, each crosswalk is the sum of both crosswalk segments. Pedestrian delay at each crosswalk segment is calculated by taking a weighted average of the pedestrian group delay at each segment, respectively. Using the delay criteria in **Table 3**, a LOS value may be assigned to each crosswalk not controlled by as stop sign for each of the study intersections.

For this study, Synchro 11 software was used to analyze the traffic conditions for the 2022 Build Out scenario.

2.4 Consistency with Existing or Planned Transit Routes and Stops Analysis

To consistent with transit routes and stops, an analysis of all transit routes existing or planned will be evaluated. ABQ ride was contacted on June 9, 2021 to collect data on existing and planned routes along the project area. The findings on existing and planned routes are presented in Section 3.2.2.

SECTION 3 – EXISTING AND PROPOSED TRANSPORTATION SYSTEMS

3.1 Thoroughfare Systems

For the proposed charter school, access from the residential developments will be provided via Stieglitz Ave, which directly abuts the proposed development and is classified as a Residential Street according to the NMDOT Roadway Functional Class Map provided in **Figure 4**.

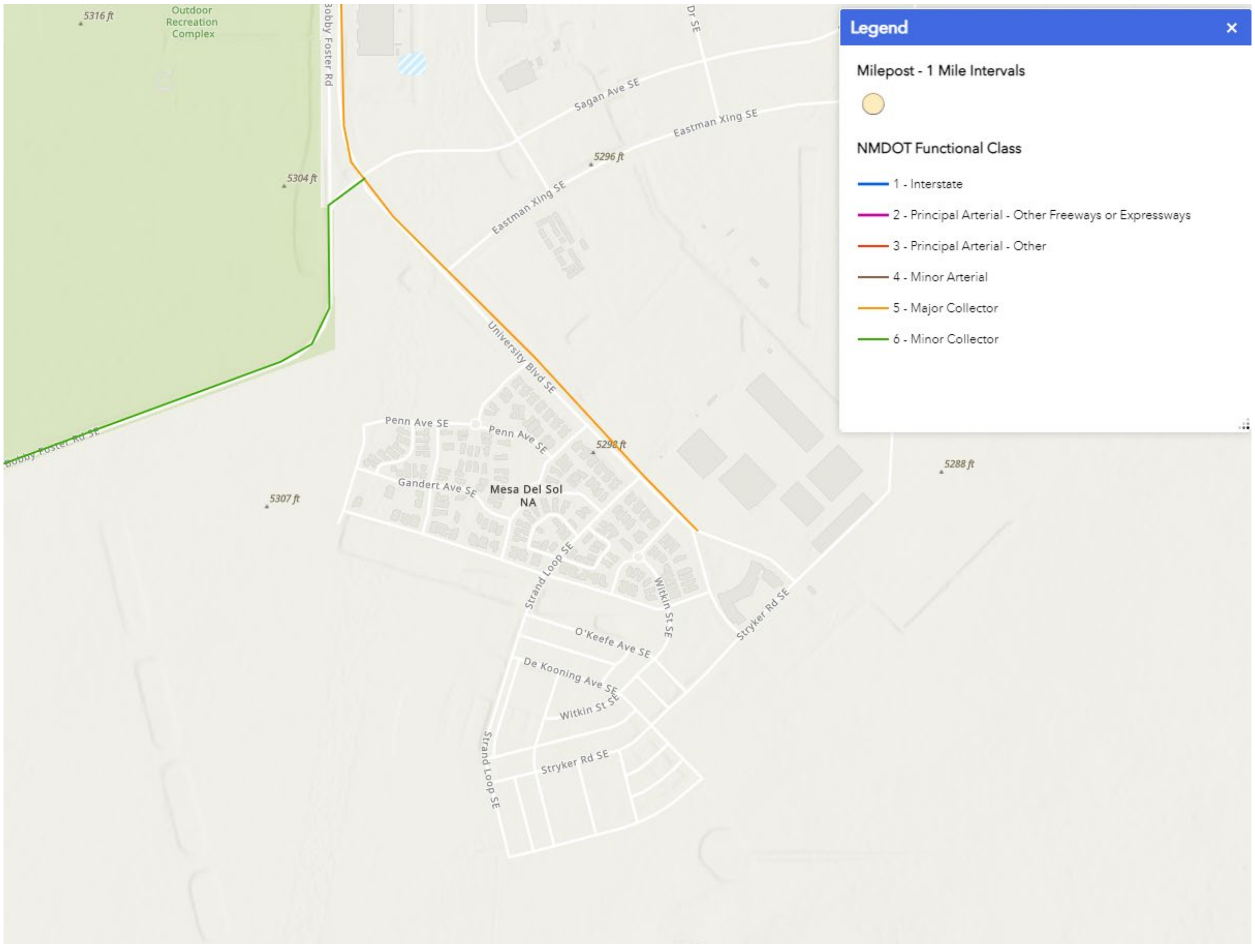


Figure 4 – NMDOT Roadway Functional Class Map of the Project Area

The roadways that are included in the intersection analysis of this project can be classified as Principal Arterial, Minor Arterial, Major Collector, Minor Collector, and Residential according to the NMDOT Roadway Functional Class Map. These roadways range in size from 1 to 2 lanes, and with a speed limit of 30 MPH. These roadways are identified in **Figure 1**. The characteristics of the roadways analyzed in this study are shown in **Table 4**. It is important to note that Bobby Foster Rd is proposed to be a four-lane divided roadway, but is analyzed as a two-lane undivided roadway since the date of the realignment of Bobby Foster Rd is yet to be determined.

Table 4 – Analyzed Roadway Characteristics

Roadway	Number of Lanes	Classification	Speed Limit
Bobby Foster Rd	2	Minor Collector	30
Diekenborn Dr	2	Residential	30
Newhall Dr	2	Residential	30
Sagan Loop	2	Residential	30
Stieglitz Ave	1	Residential	30

3.2 Other Transportation Facilities

This section describes the pedestrian and transit facilities in the area.

3.2.1 Pedestrian Facilities

At the time of this study, only Montage Unit 1 was complete. All other developments in the project area were planned or under construction. To analyze the pedestrian facilities, the completed development and the site plan for the proposed charter school (**Figure 2**) were used to describe the facilities. Sidewalks and crosswalks are proposed for all roadways in the project area. Bike lanes are proposed along Bobby Foster Rd, and Sagan Loop.

3.2.2 ABQ Ride

Currently, ABQ Ride does not provide service to the project area. **Figure 5** shows the current system map for ABQ Ride**.** After contacting ABQ Ride on June 9, 2021, they do not plan to expand their routes at this time to service the project area.

Is ABQ Ride a viable option for the students?

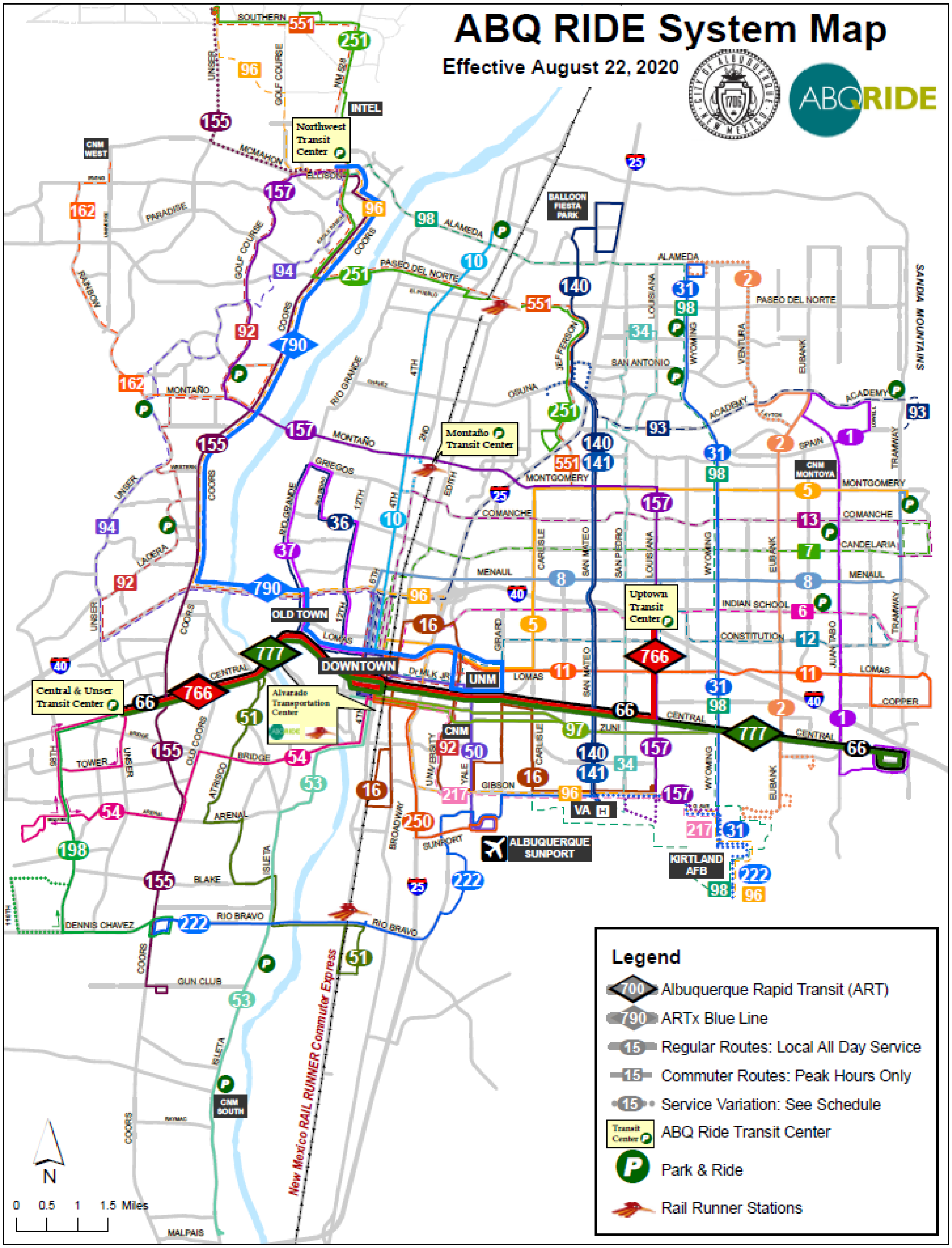


Figure 5 – ABQ Ride System Map

SECTION 4 – SITE TRIP GENERATION ANALYSIS

4.1 Existing Traffic Volumes

Since the project area is still under construction at the time of this report, there were no existing traffic counts collected at the study intersections. Therefore, all traffic data analyzed during this report was composed of generated using the *ITE Trip Generation Manual*, 10th *Edition*. The average trip rates for the peak hour of the adjacent street traffic were used for this study. These trips represent the highest peak hour vehicle trip ends generated by the development for the peak hour between 7 to 9 AM and the peak hour between 4 to 6 PM. A peak hour factor (PHF) of 0.59 was used in this study for all turning movements. The PHF was estimated using the data collected in the traffic modeling study for Mountain View Middle School in Holden, Massachusetts by the Worcester Polytechnic Institute. The PHF is a traffic parameter used to describe the relationship between the peak 15-minute flow rate within the peak hour and the total peak hour volume. A high PHF (closer to 1) indicates that traffic is spread out relatively evenly throughout the peak hour. A low PHF (closer to 0) indicates that traffic is concentrated within the peak 15 minutes.

4.2 Vehicle Trip Generation

4.2.1 Charter School

The proposed charter school development is expected to be a K-12 charter school. The applicable Land Use Code 536 was used to generate trips for this development. The number of students used to determine the number of generated trips, was 200 students. Trip generation for the developments were calculated using the fitted curve equations for Land Use Code 536. The generated trips for the AM and PM peak hour are shown in **Table 5**. Directional distribution for the generated trips were also determined using the *ITE Trip Generation Manual*. The number of vehicles entering and exiting the facilty are also presented in **Table 5**.

Table 5 – Proposed Development Peak Hour Generated Trips, Land Use Code 536

Development		Total Generated Trips	% Entering	Trips Entering	% Exiting	Exiting Trips
Charter School	AM Peak	156	61%	95	39%	61
	PM Peak	34	43%	15	57%	19

4.2.2 Montage Units 1, 3, 4, 5, and 6

The proposed Montage Units 1, 3, 4, 5, and 6 residential development are categorized as single family (Land Use Code 210). The number of dwelling units used to determine the number of generated trips, was 200, 150, 200, 175, and 85 units, respectively. Trip generation for the developments were calculated using the fitted curve equations for Land Use Code 210. The generated trips for the AM and PM peak hour are shown in **Table 6**. Directional distribution for the generated trips were also determined using the *ITE Trip Generation Manual*. The number of vehicles entering and exiting the facilty are also presented in **Table 6**.

Table 6 – Proposed Development Peak Hour Generated Trips, Land Use Code 210

Development		Total Generated Trips	% Entering	Trips Entering	% Exiting	Exiting Trips
Montage Unit 1	AM Peak	147	25%	37	75%	110
	PM Peak	198	63%	125	37%	73
Montage Unit 3	AM Peak	111	25%	28	75%	83
	PM Peak	150	63%	95	37%	55
Montage Unit 4	AM Peak	147	25%	37	75%	110
	PM Peak	198	63%	125	37%	73
Montage Unit 5	AM Peak	129	25%	32	75%	97
	PM Peak	174	63%	110	37%	64
Montage Unit 6	AM Peak	85	25%	16	75%	49
	PM Peak	87	63%	55	37%	32

4.2.3 Multi-Family Homes

For the Multi-Family housing development, the applicable Land Use Code 221 was used. The number of units used to determine the number of generated trips was 288 units. Trip generation for the developments were calculated using the fitted curve equations for Land Use Code 221. The generated trips for the AM and PM peak hour are shown in **Table 7**. Directional distribution for the generated trips were also determined using the *ITE Trip Generation Manual*. The number of vehicles entering and exiting the facilty are also presented in **Table 7**.

Table 7 – Proposed Development Peak Hour Generated Trips, Land Use Code 221

Development		Total Generated Trips	% Entering	Trips Entering	% Exiting	Exiting Trips
Multi-Family Housing	AM Peak	96	26%	25	74%	71
	PM Peak	122	61%	74	39%	48

4.2.4 Commercial Development

For the commercial development, the applicable Land Use Code 820 was used. The area used to determine the number of generated trips was 14,000 sf. Trip generation for the developments were calculated using the fitted curve equations for Land Use Code 820. The generated trips for the AM and PM peak hour are shown in **Table 8**. Directional distribution for the generated trips were also determined using the *ITE Trip Generation Manual*. The number of vehicles entering and exiting the facilty are also presented in **Table 8**.

Table 8 – Proposed Development Peak Hour Generated Trips, Land Use Code 820

Development		Total Generated Trips	% Entering	Trips Entering	% Exiting	Exiting Trips
Commercial Development	AM Peak	159	62%	99	38%	60
	PM Peak	127	48%	61	52%	66

4.3 Trip Adjustments

According to the *ITE Trip Generation Manual, i*nternal capture occurs at a site when two or more land uses have a possibility of interacting with each other, particularly where the trip can be made by walking. This can result in the total generation of trips being reduced. Assuming that within a 0.25 mile radius of the charter school, the commercial development, and the Albuquerque studios trips to these locations can be reduced due to walking, the generated trips in Section 4.2 were reduced. **Figure 6** shows a the 0.25 mile radius in the project area from the charter school, the commercial development, and the Albuquerque studios.

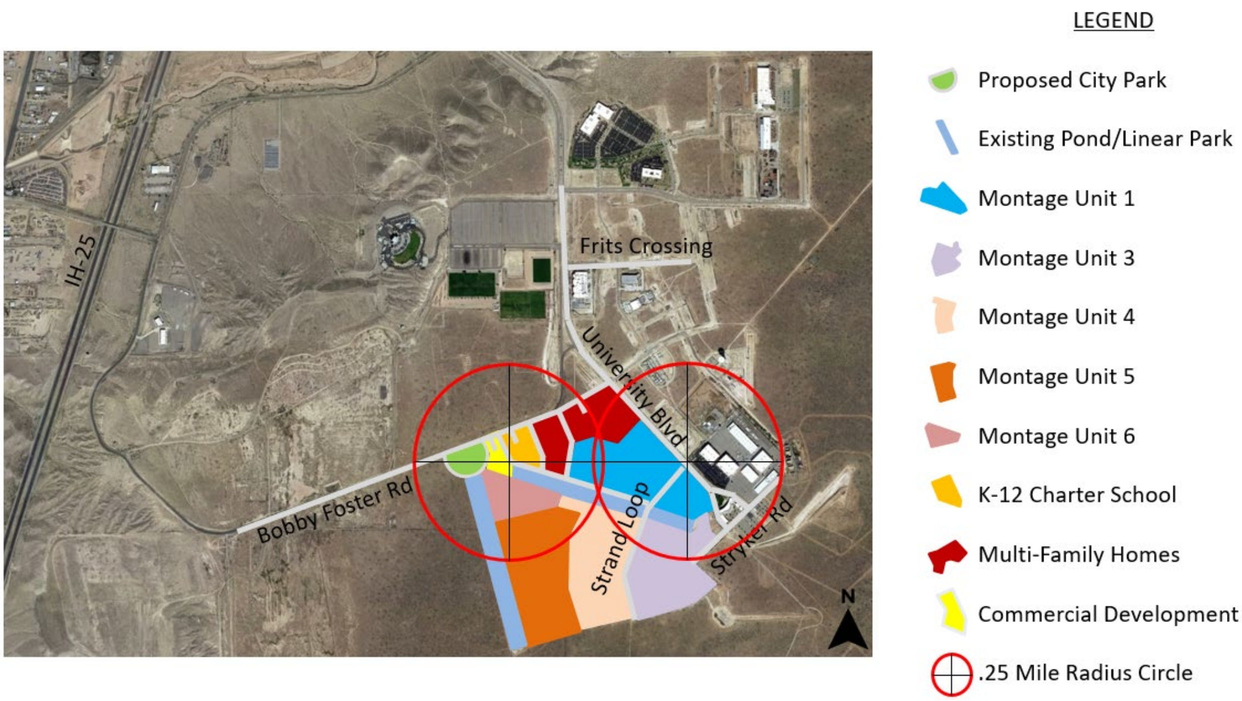


Figure 6 – 0.25 Mile Radius Site Map

The following assumptions were used to adjust the generated trips for internal capture near the charter school and commercial development:

1. 20% of Montage Unit 1 is within the 0.25 mile radius.
2. 10% of Montage Unit 4 is within the 0.25 mile radius.
3. 25% of Montage Unit 5 is within the 0.25 mile radius.
4. 100% of Montage Unit 6 is within the 0.25 mile radius.
5. 50% of the Multi-Family Housing are within the 0.25 mile radius.

The following assumptions were used to adjust the generated trips for internal capture near the Albuquerque studios:

1. 90% of Montage Unit 1 is within the 0.25 mile radius.
2. 40% of Montage Unit 3 is within the 0.25 mile radius.
3. 10% of Montage Unit 4 is within the 0.25 mile radius.
4. 25% of the Multi-Family Housing are within the 0.25 mile radius.
5. Assume 50% of people working at Albuquerque Studios live in the project area.

This is a Charter School. Is there any evidence that the internal capture is valid for the near by residents. Where do the student live?

Following the assumptions, a 30% trip reduction was applied to the proposed charter school and commercial development. For the Montage Unit 1, 3, 4, 5, 6, and Multi-Family housing, a reduction of 45%, 20%, 5%, 0%, 13%, and 25% were used, respectively. **Table 9** shows the adjusted trip generation for the Montage Units, the multi-family housing, the charter school, and the commercial development.

Table 9 – Proposed Development Peak Hour Generated Trips, Land Use Code 210

Development		Adjusted Generated Trips	% Entering	Trips Entering	% Exiting	Exiting Trips
Montage Unit 1	AM Peak	81	25%	20	75%	61
	PM Peak	109	63%	69	37%	40
Montage Unit 3	AM Peak	89	25%	22	75%	67
	PM Peak	120	63%	76	37%	44
Montage Unit 4	AM Peak	140	25%	35	75%	105
	PM Peak	188	63%	119	37%	69
Montage Unit 5	AM Peak	129	25%	32	75%	97
	PM Peak	174	63%	110	37%	64
Montage Unit 6	AM Peak	57	25%	14	75%	43
	PM Peak	76	63%	48	37%	28
Multi-Family Housing	AM Peak	72	26%	19	74%	54
	PM Peak	91	61%	56	39%	35
Charter School	AM Peak	109	61%	67	39%	43
	PM Peak	24	43%	10	57%	14
Commercial Development	AM Peak	111	62%	69	38%	42
	PM Peak	88	48%	42	52%	46

under? Is this a typo?

4.4 Trip Distributions

Traffic generated by the developments under had to be distributed and assigned to the study area intersections so that the analyses could be conducted. The distribution of the generated traffic through the study area intersections was determined by considering factors such as the existing and proposed traffic connectivity, capacity, and congestion of the surrounding roadway network. Engineering judgment was applied to these factors when developing assumptions for the analysis.

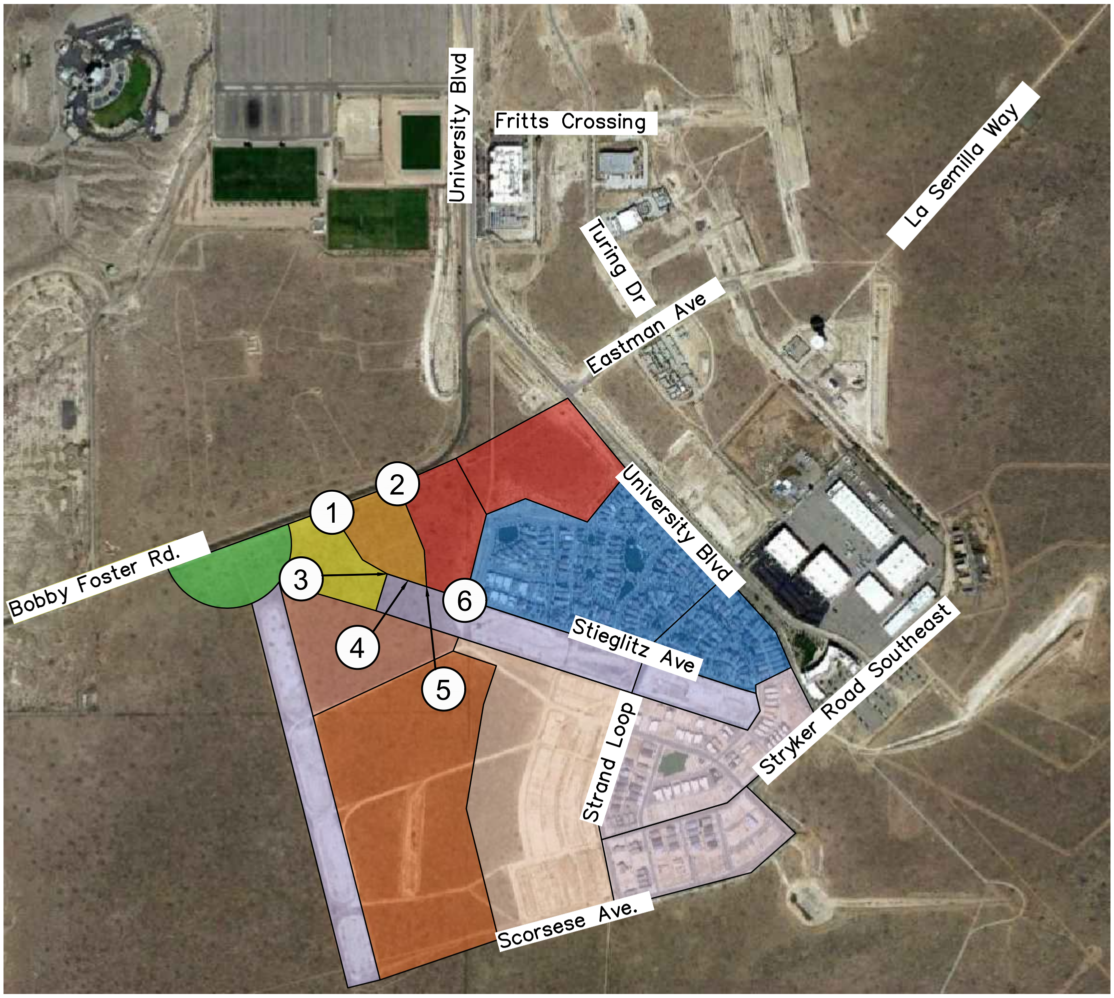
4.4.1 Charter School

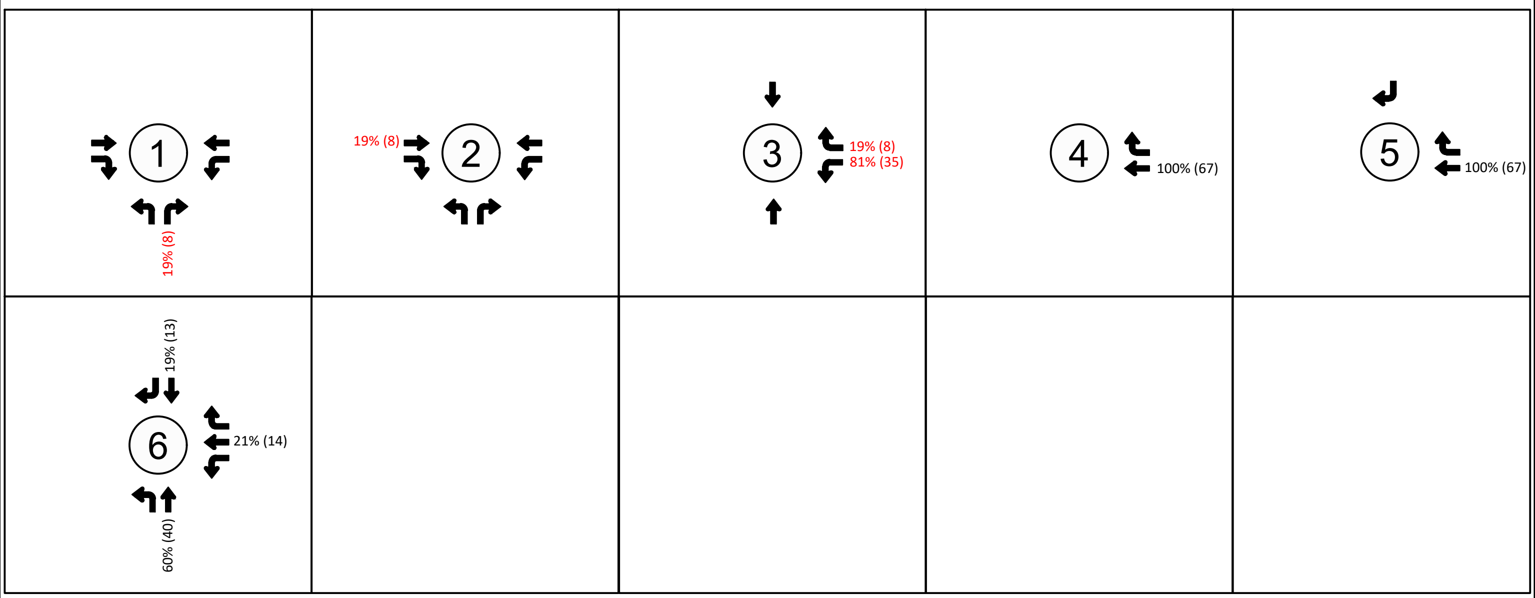
The following factors affected the trip distribution:

1. Assumed all roadway connections have been completed. This includes Sagan Loop, Diekenborn Dr, and the unnamed roadway around the proposed city park west of the proposed commercial development.
2. It was assumed that traffic entering and exiting to the charter school were routed through the shortest pathmoved .
3. For the charter school development trips, it was assumed that the remaining adjusted trips will be proportionate to the number of residential units outside of the 0.25 mile radius.
    a. 21% will originate from Montage Unit 1
    b. 20% will originate from Montage Unit 3
    c. 23% will originate from Montage Unit 4
    d. 17% will originate from Montage Unit 5
    e. 0% will originate from Montage Unit 6
    f. 19% will originate from the Multi-Family Housing
4. In the PM peak hour, it was assumed that the trips would follow the AM peak trip distribution percentage.

This is a Charter School. Is there any evidence that the internal capture is valid for the nearby residents. Where do the student live? This indicates that all of the student population is living at Mesa del Sol. That is not reasonable for a Charter School.

Considering the factors stated in above, the generated trips were distributed through the study area, and the turning movement volumes were calculated. **Figures 7** and **8** summarize the trip distribution and number of generated trips for the study intersections for the AM and PM peak hours, respectively.





Legend

Intersection number

AM Entering = Distribution (Generated Trips)

AM Exiting = Distribution (Generated Trips)

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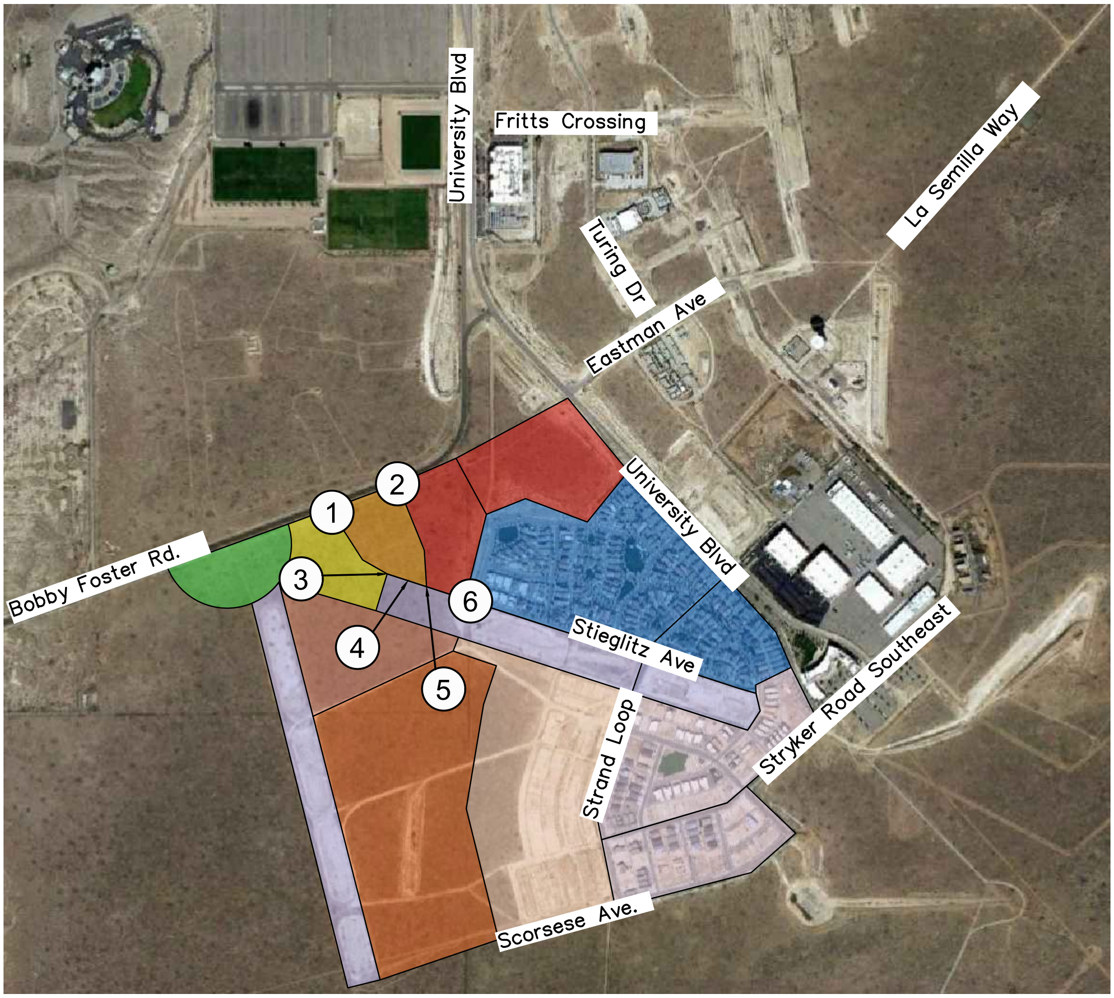

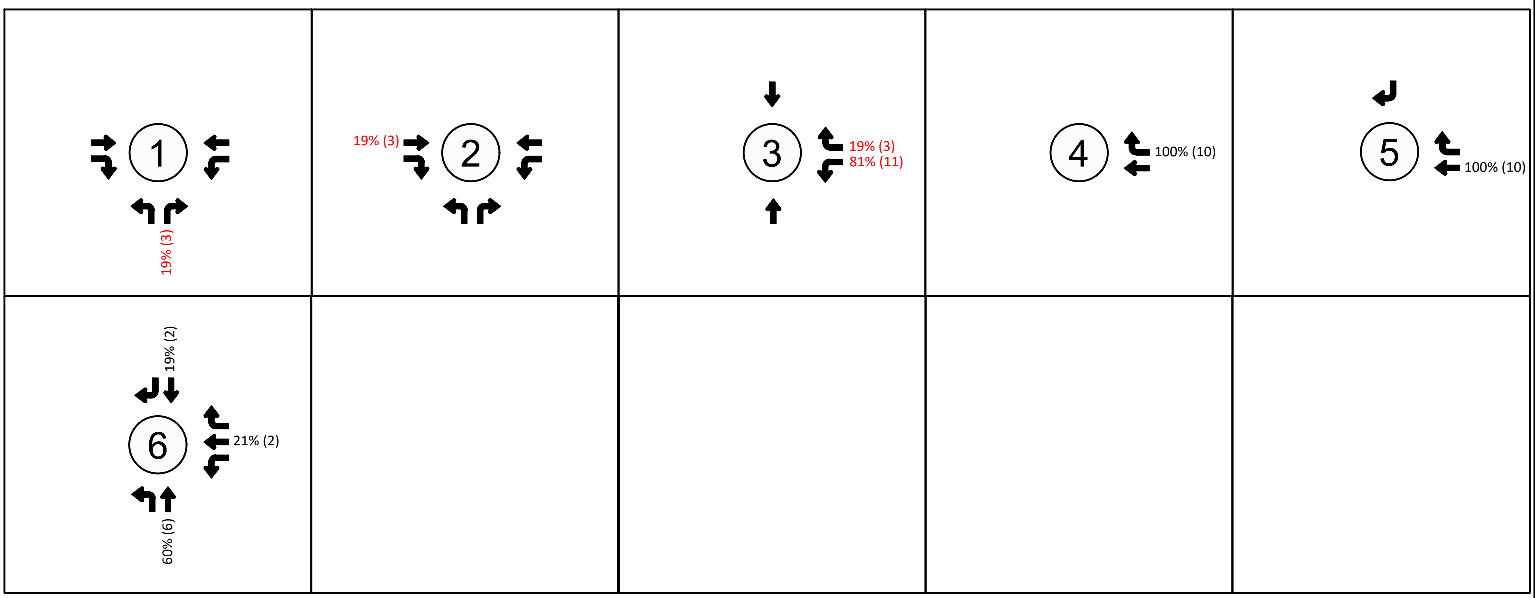

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Intersection number

PM Entering = Distribution (Generated Trips)

PM Exiting = Distribution (Generated Trips)

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Figure Number
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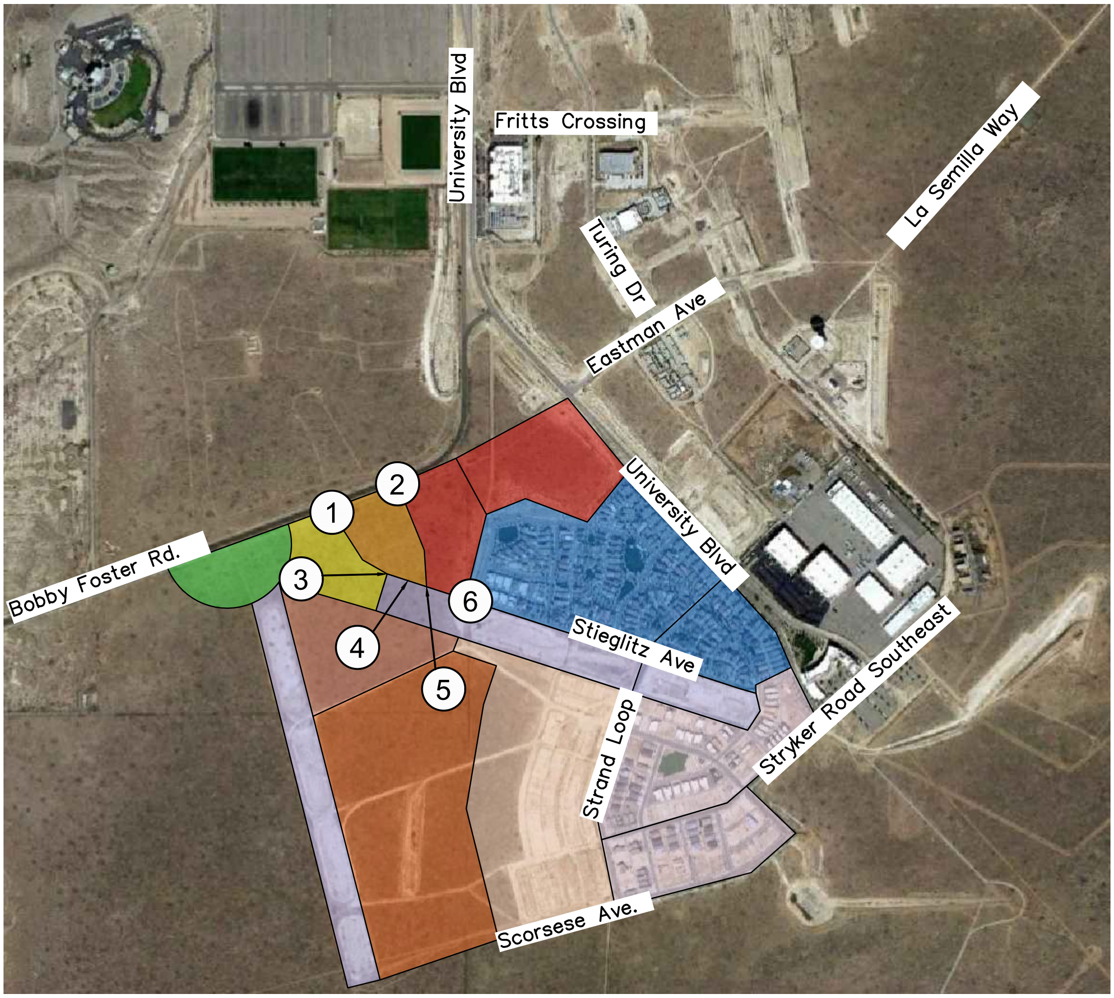
4.4.2 Commercial Development

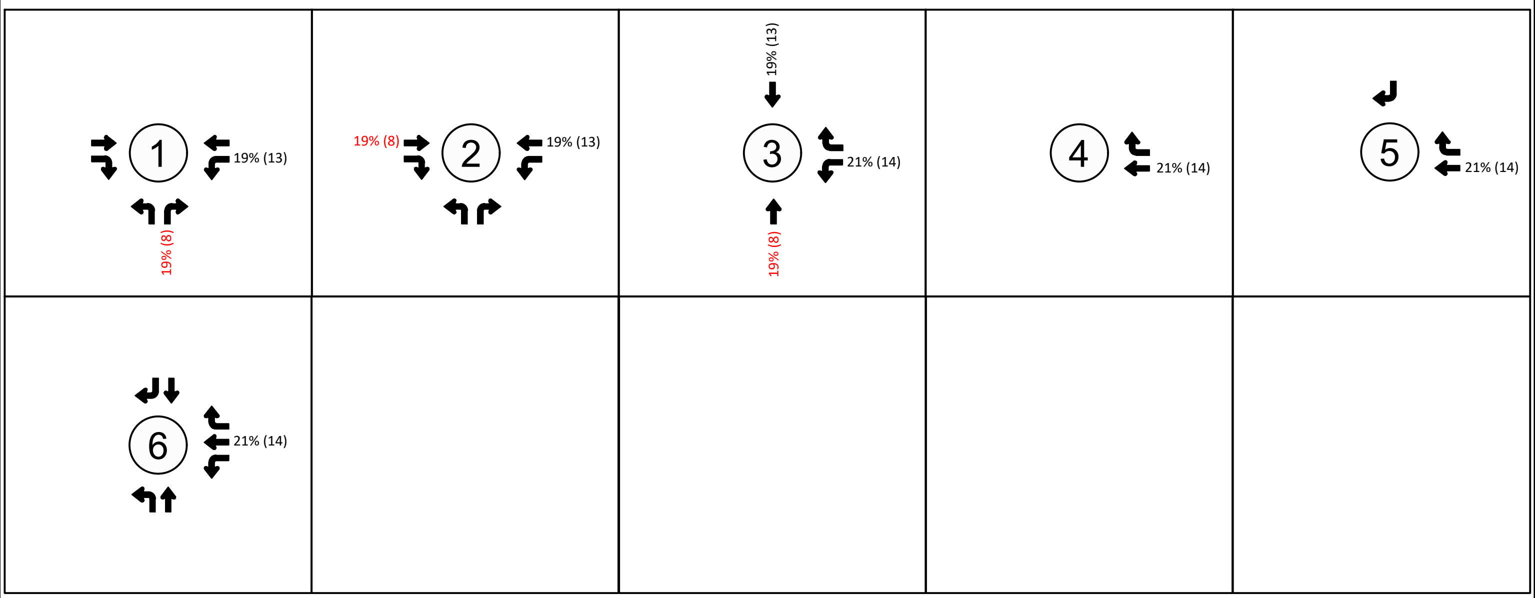
The following factors affected the trip distribution:

1. Assumed all roadway connections have been completed. This includes Sagan Loop, Diekenborn Dr, and the unnamed roadway around the proposed city park west of the proposed commercial development.
2. It was assumed that the entrance to the commercial development was located south of Intersection 3.
3. It was assumed that traffic entering and exiting to the commercial development were routed through the shortest path.
4. For the commercial development trips, it was assume that the remaining adjusted trips will be proportionate to the residential units outside of the 0.25 mile radius.
    a. 21% will originate from Montage Unit 1
    b. 20% will originate from Montage Unit 3
    c. 23% will originate from Montage Unit 4
    d. 17% will originate from Montage Unit 5
    e. 0% will originate from Montage Unit 6
    f. 19% will originate from the Multi-Family Housing

In the PM peak hour, it was assumed that the trips would follow the AM peak trip distribution percentage.

Considering the factors stated in above, the generated trips were distributed through the study area, and the turning movement volumes were calculated. **Figures 9** and **10** summarize the trip distribution and number of generated trips for the study intersections for the AM and PM peak hours, respectively.





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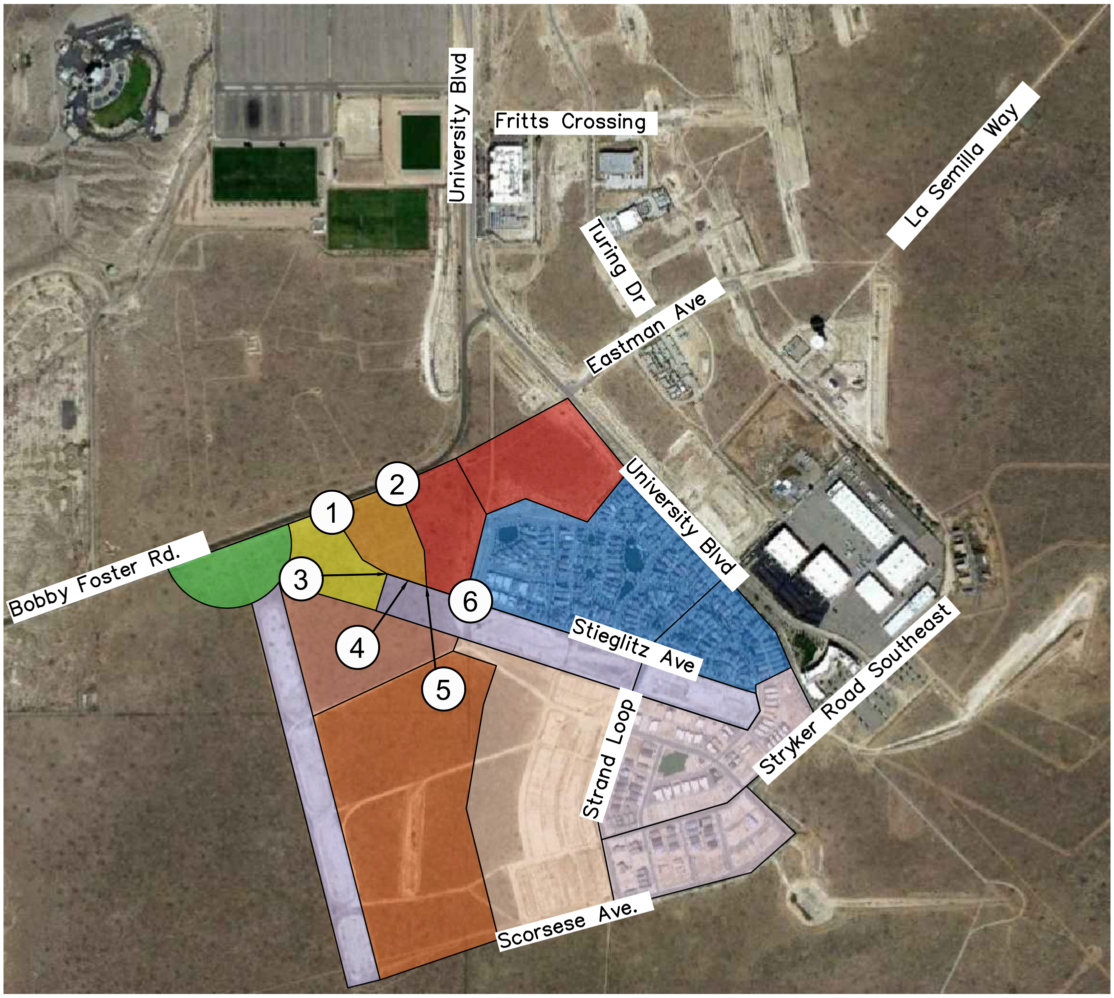
H:\PROJ\MARKETING\PROPOSALS\RIO RANCHO OFFICE\MONTAGE UNITS TIA\05 DESIGN\3 TRANSPORTATION\NIA TECH MEMO\CAD\FIGURE 9.DWG



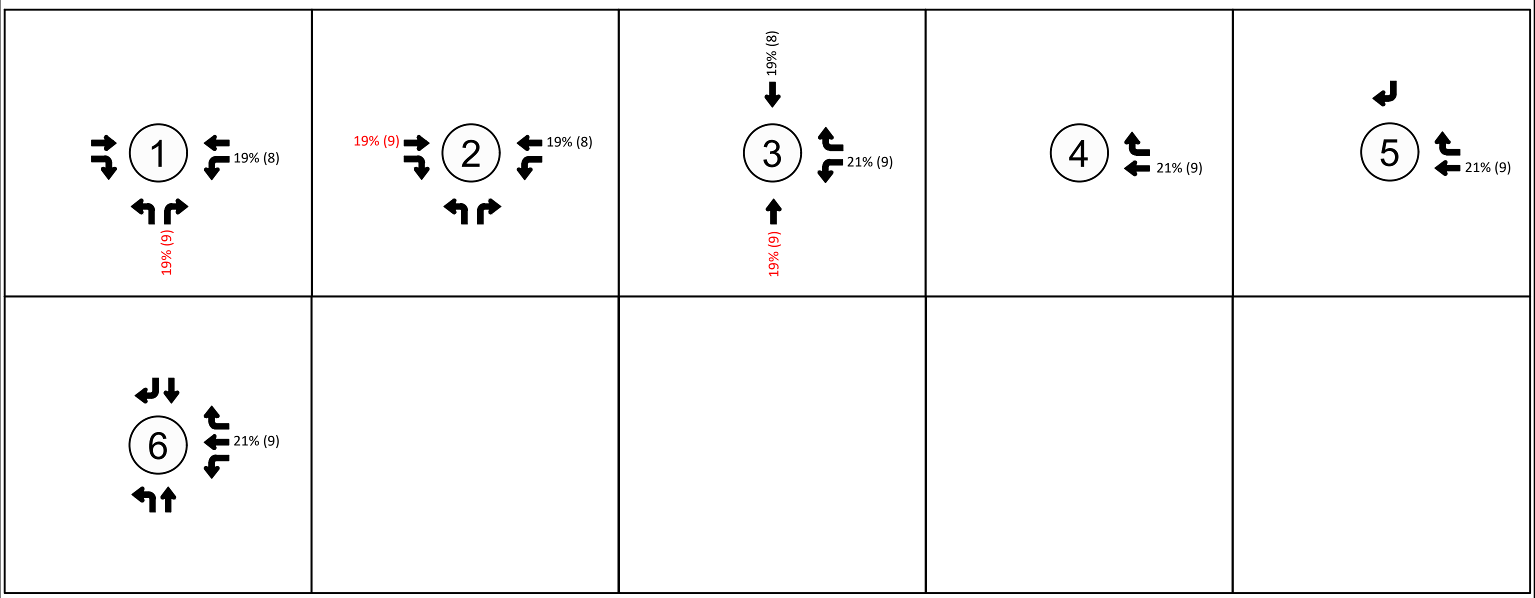


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Figure Number

10

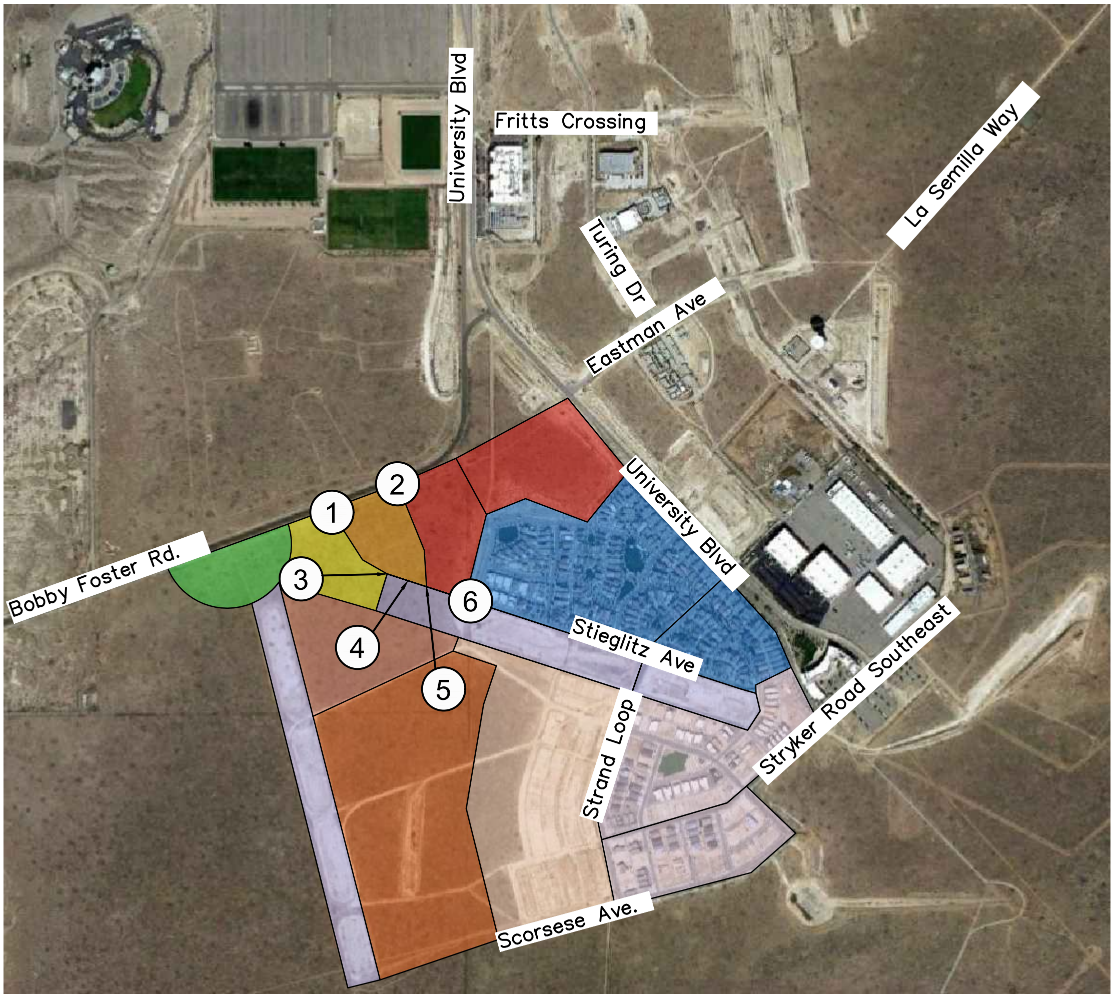
H:\PROJ\MARKETING\PROPOSALS\RIO RANCHO OFFICE\MONTAGE UNITS TIA\05 DESIGN\3 TRANSPORTATION\NIA TECH MEMO\CAD\FIGURE 10.DWG

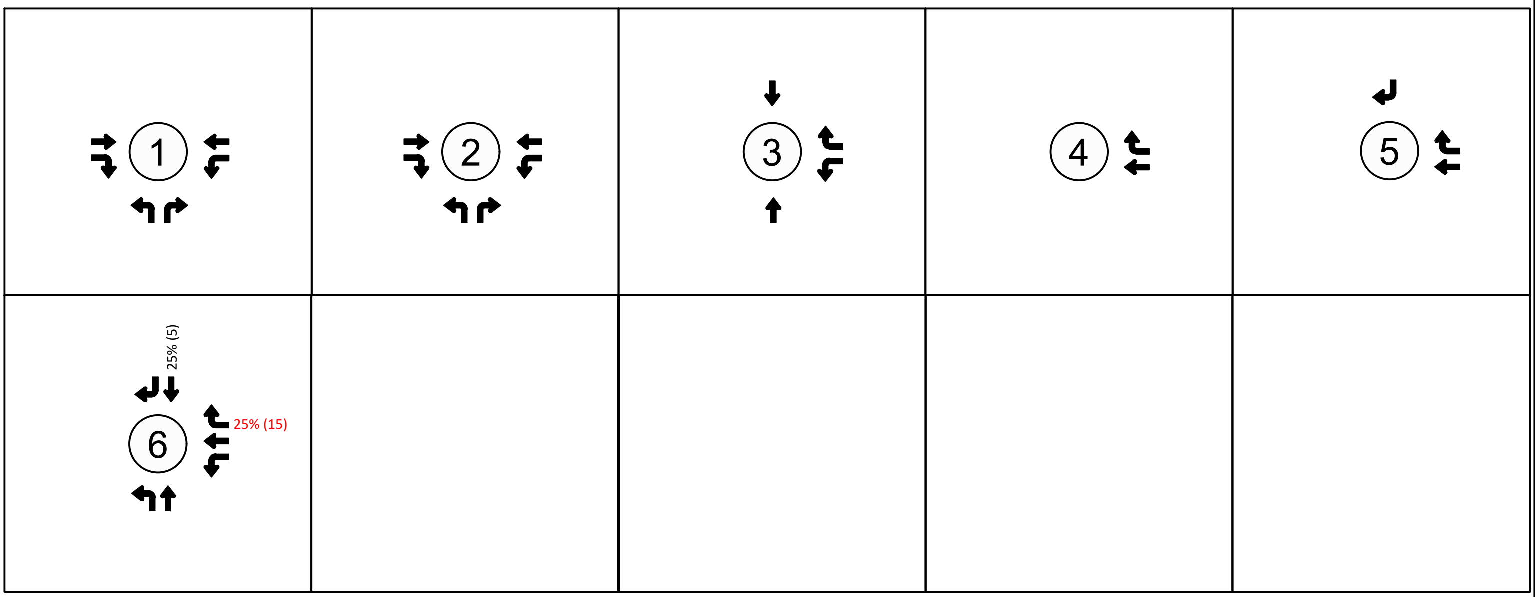
4.4.3 Montage Unit 1

The following factors affected the trip distribution:

1. Assumed all roadway connections have been completed. This includes Sagan Loop, Diekenborn Dr, and the unnamed roadway around the proposed city park west of the proposed commercial development.
2. Assumed trips to Albuquerque studios were removed through internal capture.
3. Of the remaining trips, assumed that 25% of trips will pass by Intersection 6 exiting and entering the project area.
4. In the PM peak hour, it was assumed that outbound traffic would return to its place of origin.

Considering the factors stated in above, the generated trips were distributed through the study area, and the turning movement volumes were calculated. **Figures 11** and **12** summarize the trip distribution and number of generated trips for the study intersections for the AM and PM peak hours, respectively.





Legend

Development

\# Intersection number

AM Entering = Distribution (Generated Trips)

AM Exiting = Distribution (Generated Trips)

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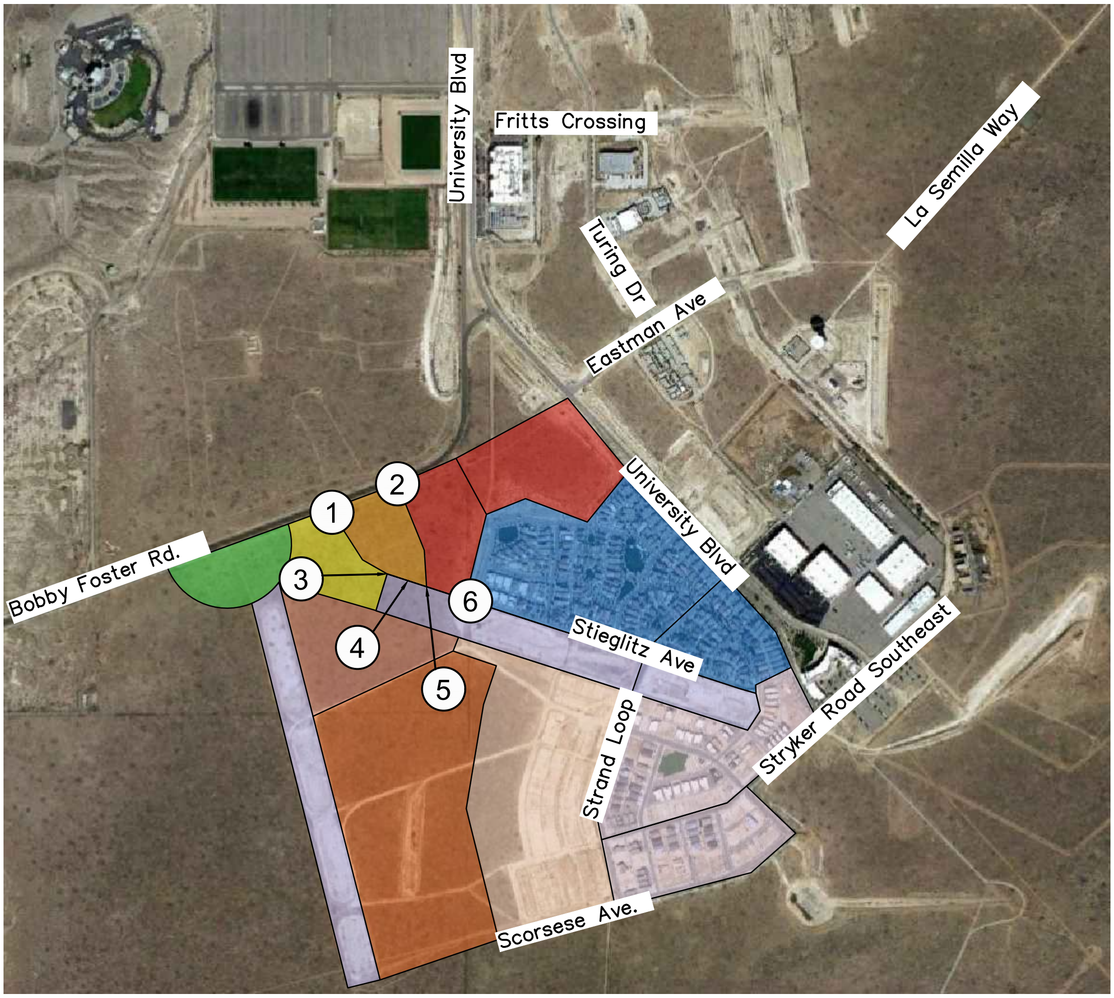
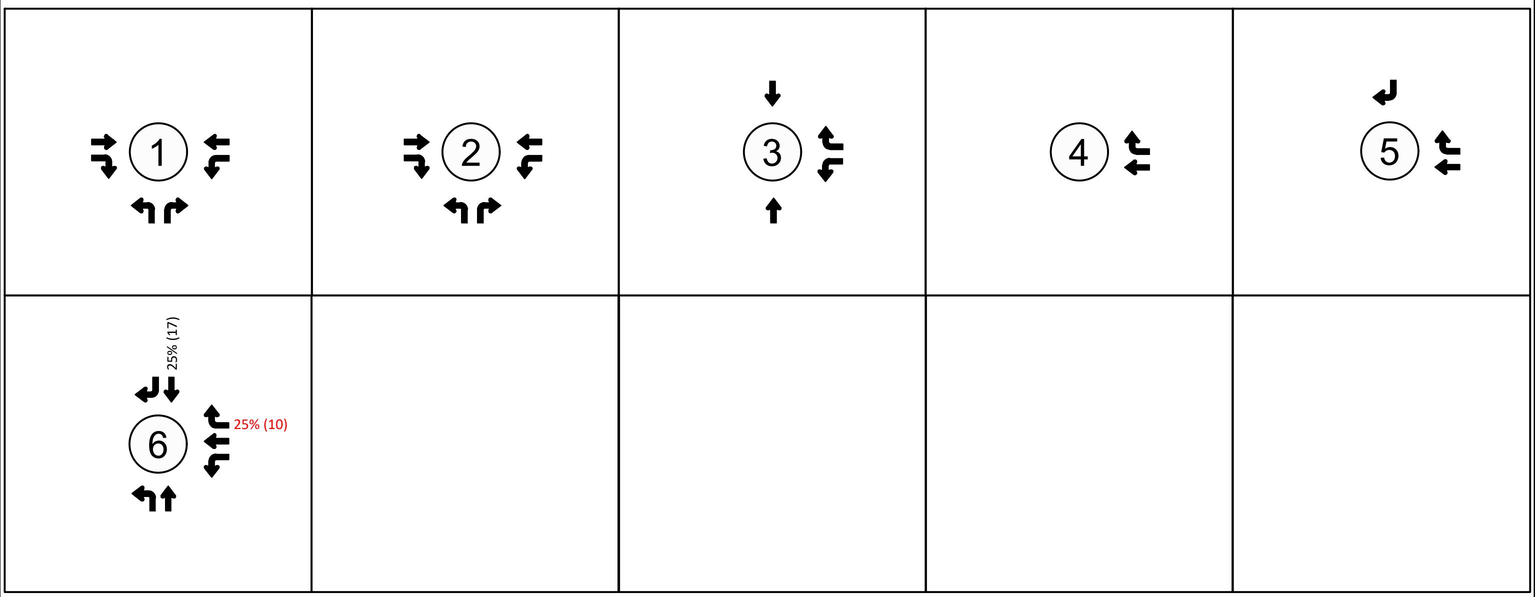
Montage Unit 1

Figure Number
11

H:\PROJ\MARKETING\PROPOSAL\RIO RANCHO OFFICE\MONTAGE UNITS TIA\05 DESIGN\3 TRANSPORTATION\NIA TECH MEMO\CAD\FIGURE 11.DWG





Legend

Intersection number

PM Entering = Distribution (Generated Trips)

PM Exiting = Distribution (Generated Trips)

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Figure Number
12

H:\PROJ\MARKETING\PROPOSAL\RIO RANCHO OFFICE\MONTAGE UNITS TIA\05 DESIGN\3 TRANSPORTATION\NIA TECH MEMO\CAD\FIGURE 12.DWG

4.4.4 Montage Unit 3 & 4

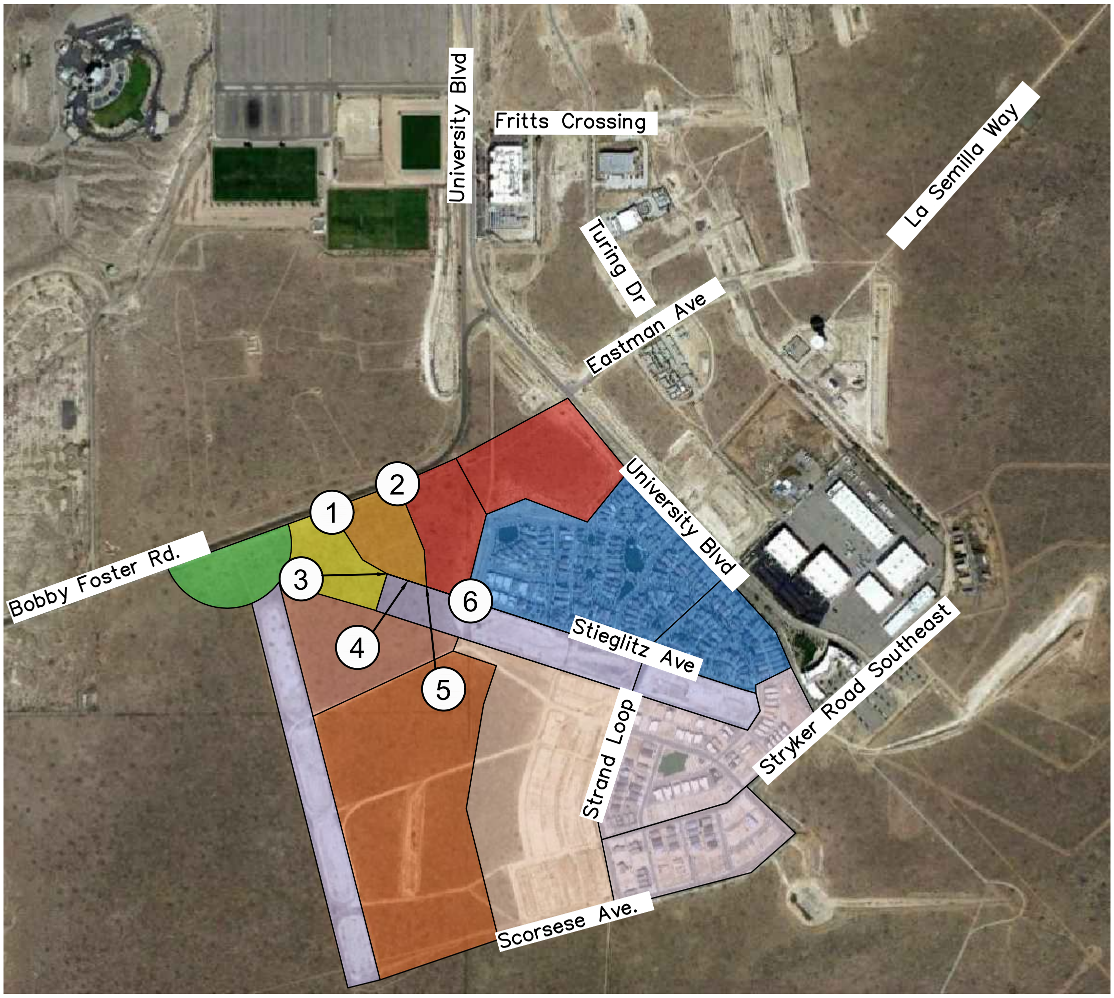
Since the remaining trips from Montage Unit 3 and 4 are expected to exit through University Blvd through the shortest path, Montage Unit 3 and 4 will not affect the NIA study intersections apart from the trips already mentioned in Sections 4.4.1 and 4.4.2.

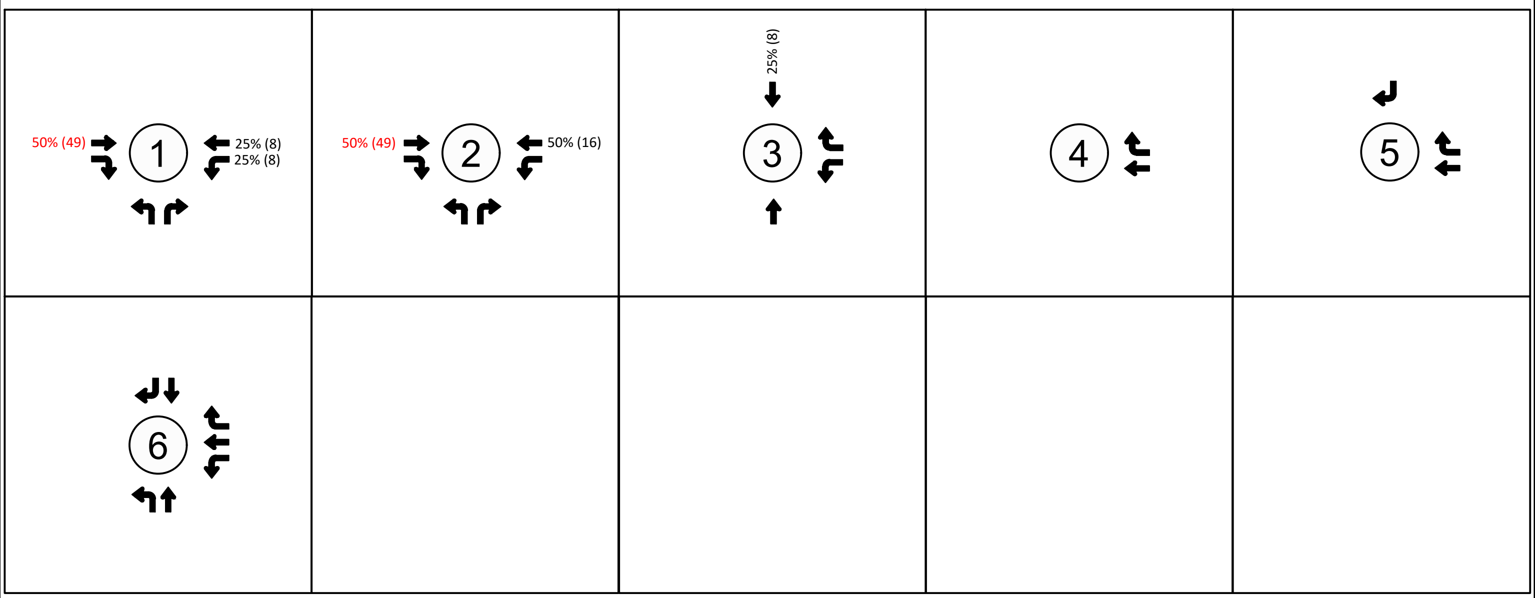
4.4.6 Montage Unit 5

The following factors affected the trip distribution:

1. Assumed all roadway connections have been completed. This includes Sagan Loop, Diekenborn Dr, and the unnamed roadway around the proposed city park west of the proposed commercial development.
2. It was assumed that 50% of remaining trips would travel to Albuquerque studios and not affect the NIA intersections, and 50% would exit through University Blvd.
3. Of the 50% exit through University Blvd, it is assumed that all trips will exit the subdivision east of Intersection 1 to avoid the traffic from the school in the AM Peak hour.
4. It was assumed that 25% will enter the subdivision through Intersection 1 and 25% will enter east of Intersection 1 AM Peak hour.
5. In the PM peak hour, it was assumed that 25% will exit the subdivision east of Intersection 1 and 25% will exit through Intersection 1.
6. It was assumed that 25% will enter the subdivision through Intersection 1 and 25% will enter east of Intersection 1 PM Peak hour.

Considering the factors stated in above, the generated trips were distributed through the study area, and the turning movement volumes were calculated. **Figures 13** and **14** summarize the trip distribution and number of generated trips for the study intersections for the AM and PM peak hours, respectively.





Legend

Intersection number

AM Entering = Distribution (Generated Trips)

AM Exiting = Distribution (Generated Trips)

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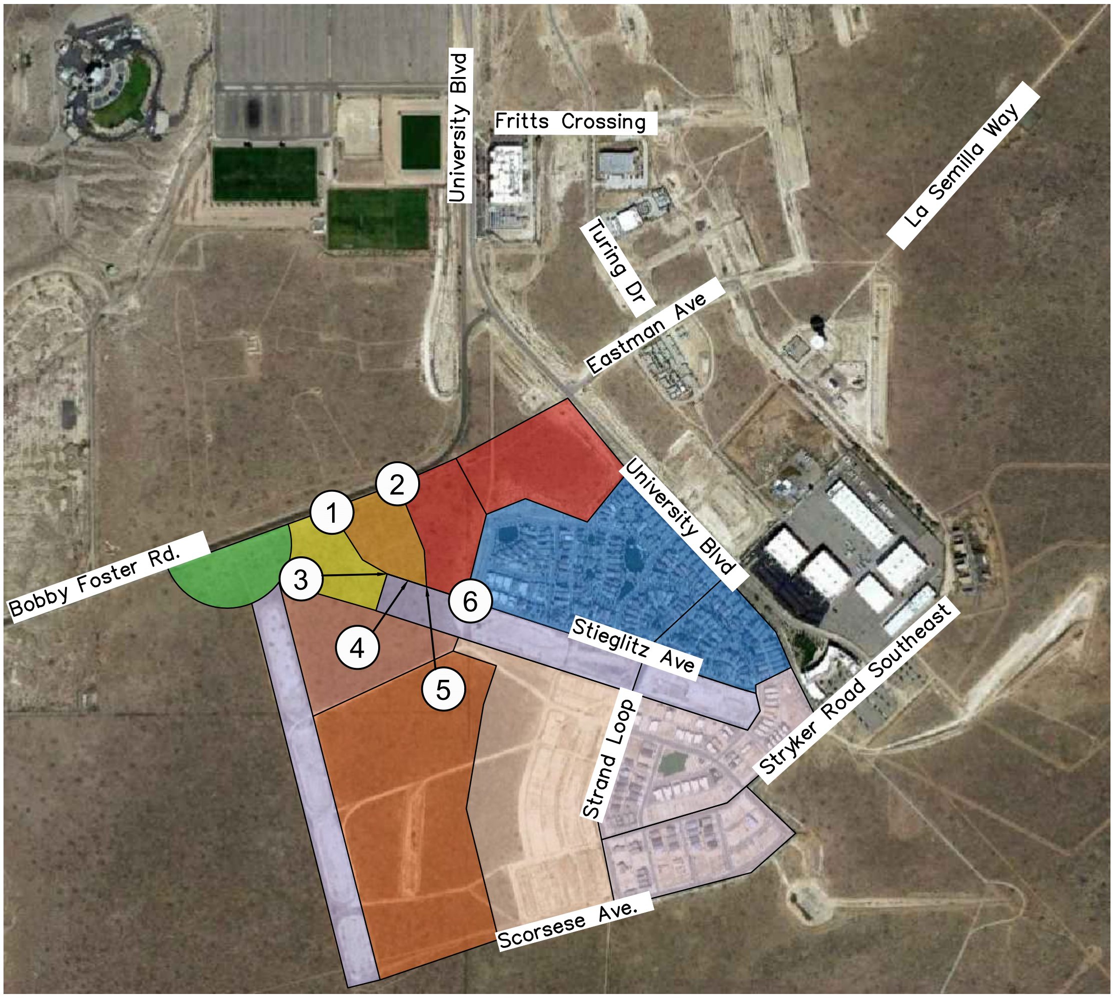
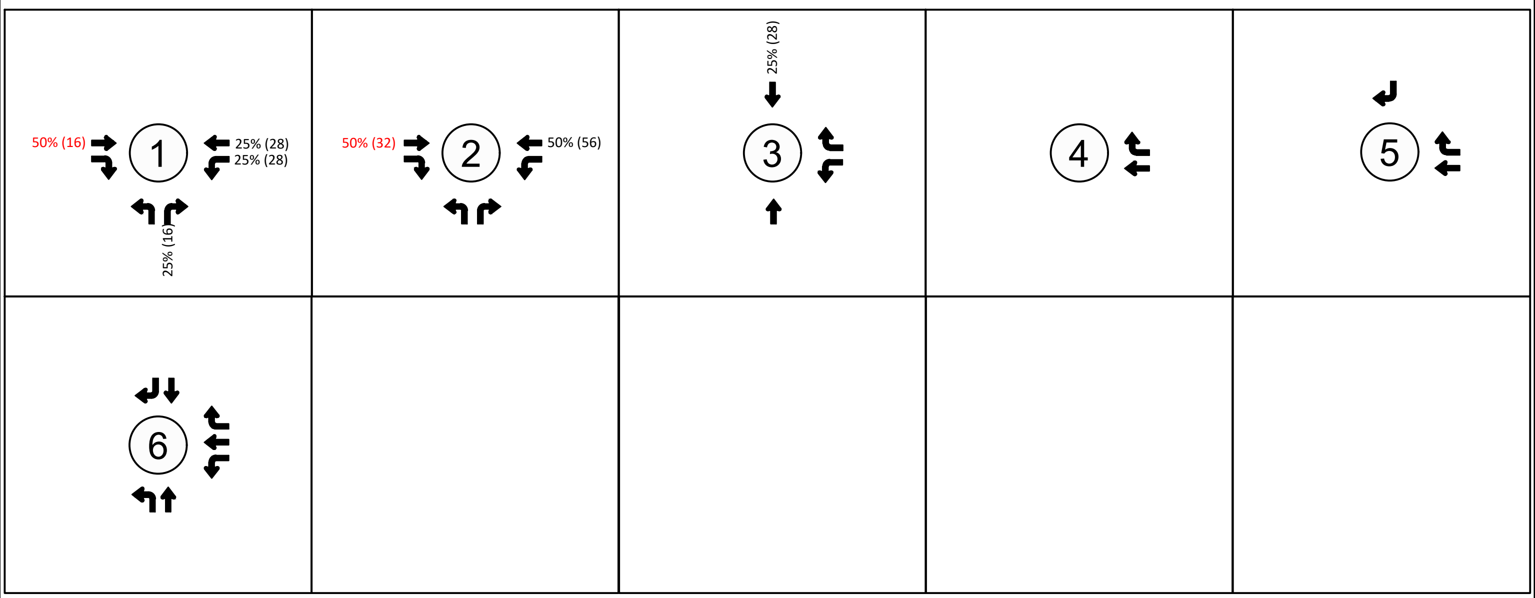
Figure Number
13

H:\PROJ\MARKETING\PROPOSALS\RIO RANCHO OFFICE\MONTAGE UNITS TIA\05 DESIGN\3 TRANSPORTATION\NIA TECH MEMO\CAD\FIGURE 13.DWG





Legend

\# Intersection number

PM Entering = Distribution (Generated Trips)

PM Exiting = Distribution (Generated Trips)

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Figure Number
14

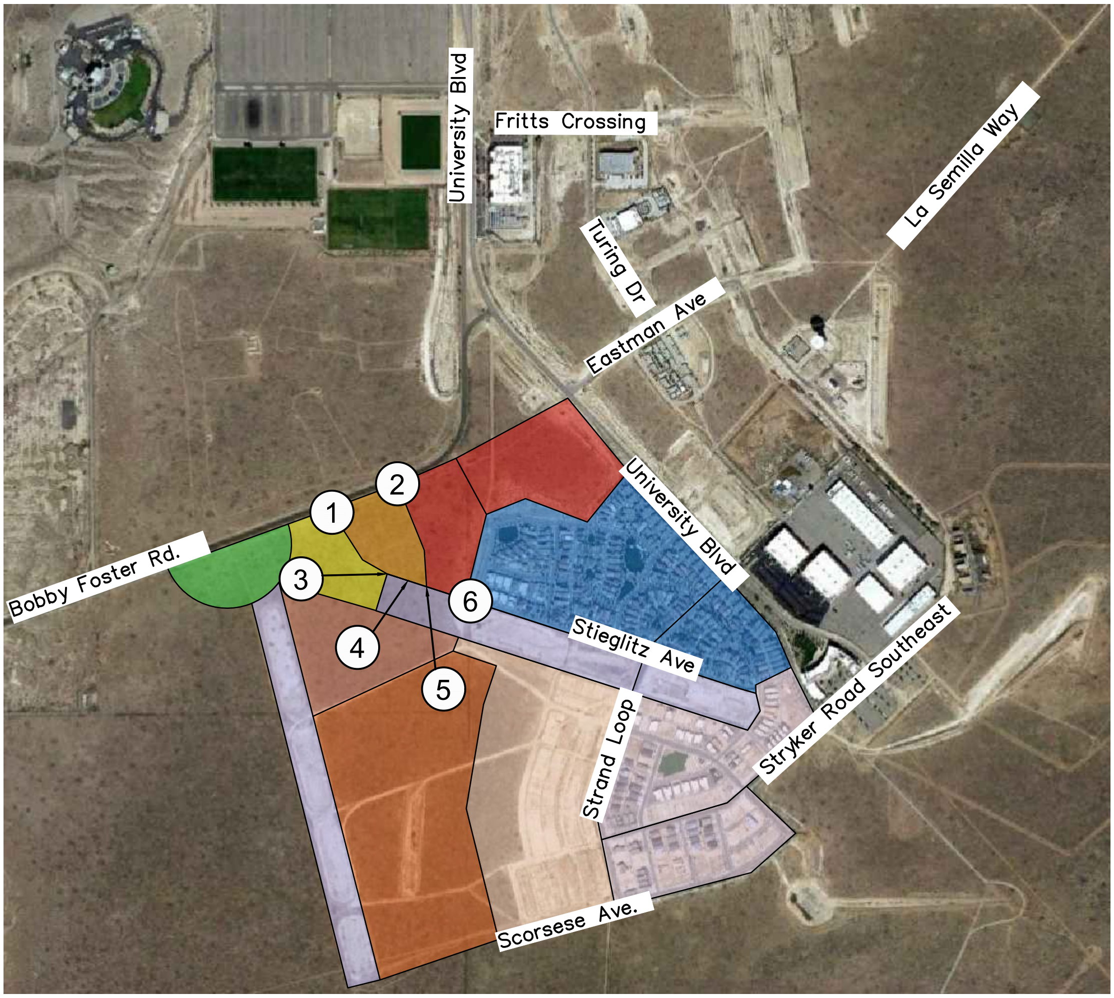
H:\PROJMARKETING\PROPOSAL\RIO RANCHO OFFICE\MONTAGE UNITS TIA\05 DESIGN\3 TRANSPORTATION\NIA TECH MEMO\CAD\FIGURE 14.DWG

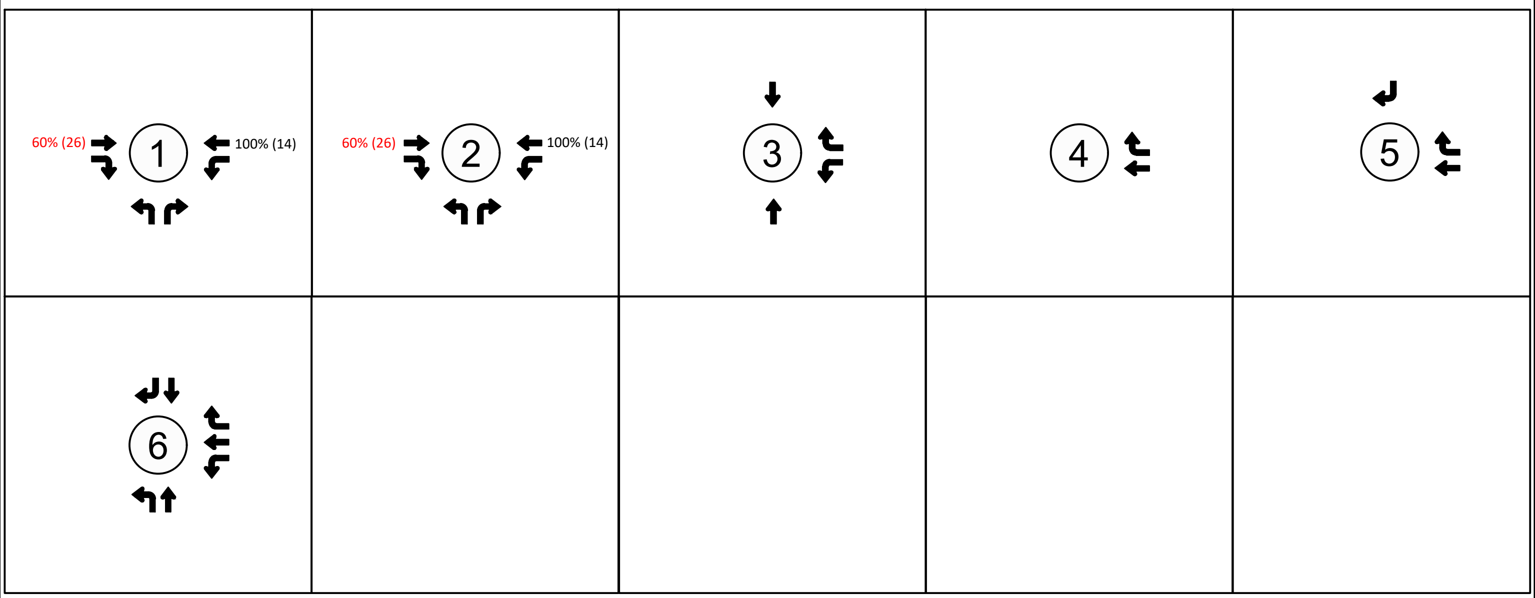
4.4.7 Montage Unit 6

The following factors affected the trip distribution:

1. Assumed all roadway connections have been completed. This includes Sagan Loop, Diekenborn Dr, and the unnamed roadway around the proposed city park west of the proposed commercial development.
2. It was assumed that 40% of remaining trips would travel to Albuquerque studios and not affect the NIA intersections, and 50% would exit through University Blvd.
3. Of the 60% exit through University Blvd, it is assumed that all trips will exit the subdivision east of Intersection 1 to avoid the traffic from the school in the AM Peak hour.
4. It was assumed that 100% will enter the subdivision east of Intersection 1 during the AM Peak hour.
5. In the PM peak hour, it was assumed that 50% will exit the subdivision east of Intersection 1 and 50% will exit through Intersection 1.
6. It was assumed that 30% will enter the subdivision through Intersection 1 and 30% will enter east of Intersection 1 PM Peak hour.

Considering the factors stated in above, the generated trips were distributed through the study area, and the turning movement volumes were calculated. **Figures 15** and **16** summarize the trip distribution and number of generated trips for the study intersections for the AM and PM peak hours, respectively.





Legend

\# Intersection number

AM Entering = Distribution (Generated Trips)

AM Exiting = Distribution (Generated Trips)

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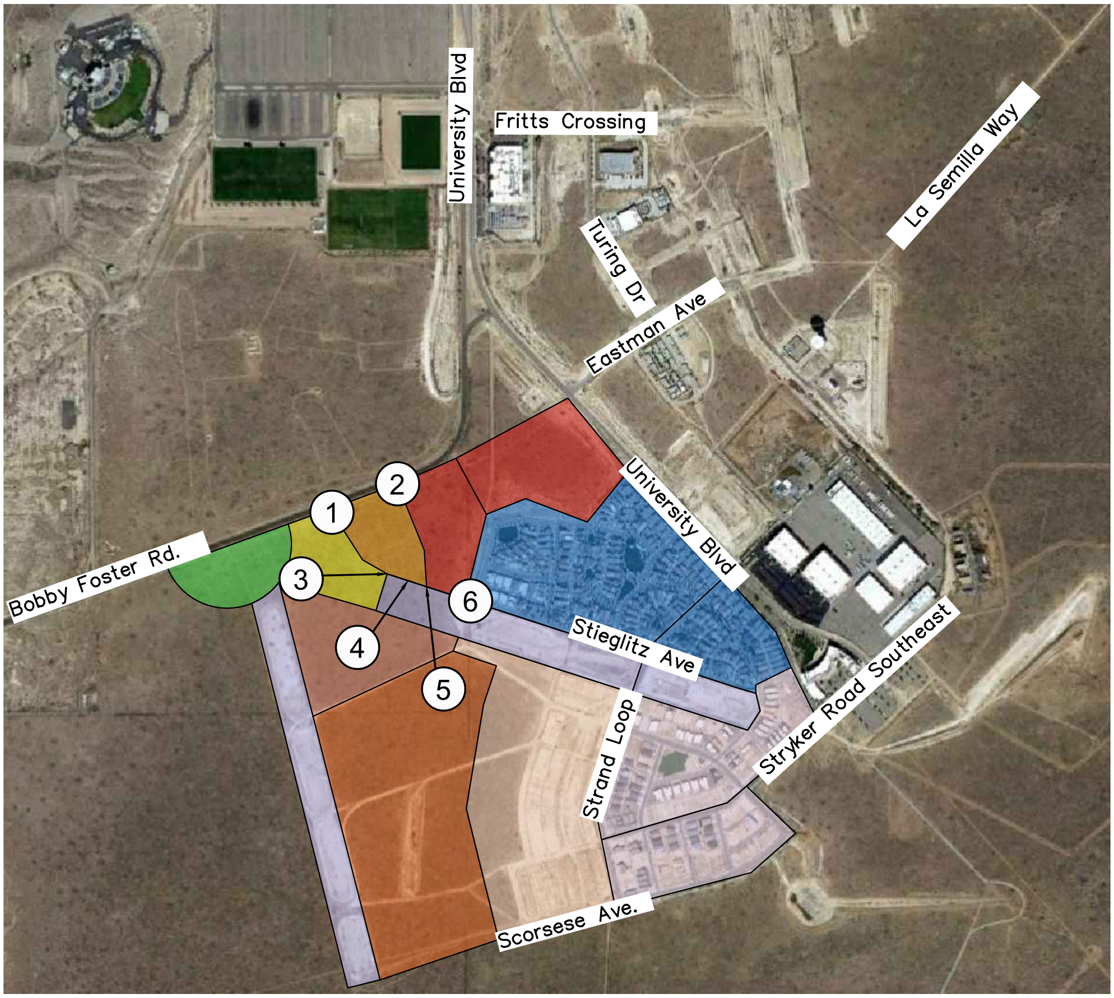
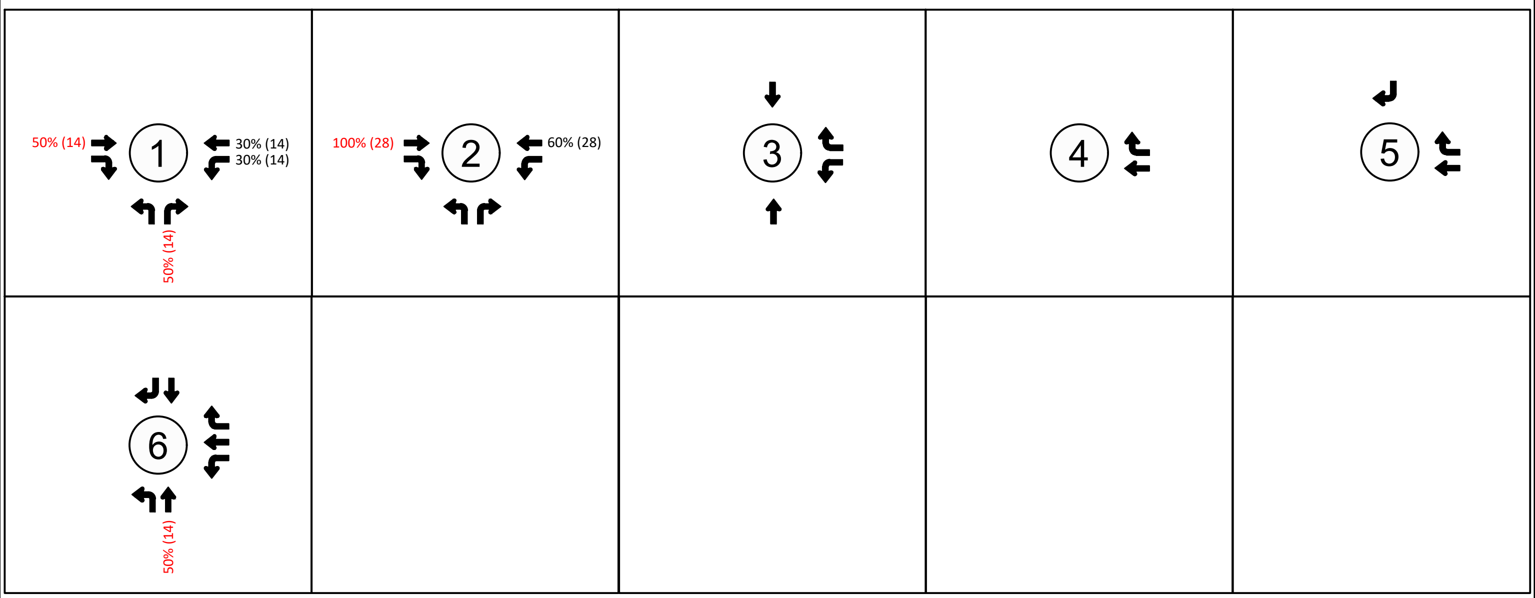
Figure Number

15





Legend

\# Intersection number

PM Entering = Distribution (Generated Trips)

PM Exiting = Distribution (Generated Trips)

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Figure Number

16

4.4.8 Multi-Family Housing

Since the remaining trips from the Multi-Family Housing are expected to exit through University Blvd through the shortest path, the Multi-Family Housing will not affect the NIA study intersections apart from the trips already mentioned in Sections 4.4.1 and 4.4.2.

4.5 Turning Movements

Combining the trip distributions from Section 4.4, the total turning movements were calculated and presented in **Table 10.**

Table 10 – Peak Hour Turning Movements

No.	Intersection	Peak Hour	Southbound			Westbound			Northbound			Eastbound		
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
1	Bobby Foster Rd & Diekenborn Dr	AM PHV	-	-	-	21	22	-	0	-	16	-	74	0
		AM PHF	-	-	-	0.59	0.59	-	0.00	-	0.59	-	0.59	0.00
		PM PHV	-	-	-	50	42	-	0	-	41	-	30	0
		PM PHF	-	-	-	0.59	0.59	-	0.00	-	0.59	-	0.59	0.00
2	Bobby Foster Rd & Newhall Dr	AM PHV	-	-	-	0	43	-	0	-	0	-	90	0
		AM PHF	-	-	-	0.00	0.59	-	0.00	-	0.00	-	0.59	0.00
		PM PHV	-	-	-	0	92	-	0	-	0	-	74	0
		PM PHF	-	-	-	0.00	0.59	-	0.00	-	0.00	-	0.59	0.00
3	Stieglitz Ave & Diekenborn Dr	AM PHV	-	21	-	49	-	8	-	8	-	-	-	-
		AM PHF	-	0.59	-	0.59	-	0.59	-	0.59	-	-	-	-
		PM PHV	-	35	-	20	-	3	-	23	-	-	-	-
		PM PHF	-	0.59	-	0.59	-	0.59	-	0.59	-	-	-	-
-4	Stieglitz Ave & Entrance Driveway	AM PHV	-	-	-	-	14	67	-	-	-	-	-	-
		AM PHF	-	-	-	-	0.59	0.59	-	-	-	-	-	-
		PM PHV	-	-	-	-	9	10	-	-	-	-	-	-
		PM PHF	-	-	-	-	0.59	0.59	-	-	-	-	-	-
5	Stieglitz Ave & Newhall Dr	AM PHV	-	-	0	-	81	0	-	-	-	-	-	-
		AM PHF	-	-	0.00	-	0.59	0.00	-	-	-	-	-	-
		PM PHV	-	-	0	-	19	0	-	-	-	-	-	-
		PM PHF	-	-	0.00	-	0.59	0.00	-	-	-	-	-	-
6	Stieglitz Ave & Segan Loop	AM PHV	-	0	13	0	29	0	40	0	-	-	-	-
		AM PHF	-	0.00	0.59	0.00	0.59	0.00	0.59	0.00	-	-	-	-
		PM PHV	-	0	2	0	11	0	6	0	-	-	-	-
		PM PHF	-	0.00	0.59	0.00	0.59	0.00	0.59	0.00	-	-	-	-

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4.6 Generated Pedestrian Trips

To calculate the generated pedestrian trips, the reduction in vehicular generated trips within the 0.25 mile radius of the charter school and commercial development were converted to pedestrian trips. **Table 11** shows the pedestrian trips generated by the charter school and commercial development during the AM and PM peak.

Table 11 – Pedestrian Generated Trips by Peak Hours

Development		Pedestrian Generated Trips	% Entering	Trips Entering	% Exiting	Exiting Trips
Charter School	AM Peak	47	61%	29	39%	18
	PM Peak	10	43%	4	57%	6
Commercial Development	AM Peak	48	62%	30	38%	18
	PM Peak	38	48%	18	52%	20

To distribute the trips, within the study intersections, the shortest path from the subdivisions to the charter school or commercial development was used. The pedestrian generated trips were distributed using a weighted average of the units of the subdivision within the 0.25 mile radius. The pedestrians originated as follows:

1. 10% from Montage Unit 1
2. 10% from Montage Unit 4
3. 10% from Montage Unit 5
4. 30% from Montage Unit 6
5. 40% from the Multi-Family Housing

Table 12 shows the pedestrian movements through the study intersections.

Table 12 – Pedestrian Movements by Peak Hours

No.	Intersection	Peak Hour	Southbound		Westbound		Northbound		Eastbound	
			CW	CCW	CW	CCW	CW	CCW	CW	CCW
1	Bobby Foster Rd & Diekenborn Dr	AM PHV	3	6	-	-	-	-	-	-
		PM PHV	4	3	-	-	-	-	-	-
2	Bobby Foster Rd & Newhall Dr	AM PHV	6	11	-	-	-	-	-	-
		PM PHV	5	4	-	-	-	-	-	-
3	Stieglitz Ave & Diekenborn Dr	AM PHV	-	-	-	-	20	19	-	-
		PM PHV	-	-	-	-	4	3	-	-
4	Stieglitz Ave & Entrance Driveway	AM PHV	-	-	-	-	8	12	-	-
		PM PHV	-	-	-	-	8	8	-	-
5	Stieglitz Ave & Newhall Dr	AM PHV	-	-	-	-	16	24	-	-
		PM PHV	-	-	-	-	5	4	-	-
6	Stieglitz Ave & Sagan Loop	AM PHV	-	-	4	6	8	12	-	-
		PM PHV	-	-	2	3	4	6	-	-

SECTION 5 – ANALYSIS

5.1 Queue/Noise and Air Quality Impact Analysis

To be conservative, the total, unadjusted, 156 generated AM Peak hour vehicle trips for the charter school were used to conduct the queue analysis. Table 13 shows the 156 trips distributed according to the arrival distribution discussed in the methodology.

Table 13 – Trip Distribution for a School during the Peak Hour

Time Prior to School Start	% Distribution	Trips
> 45 min prior	*-	0
45 min prior	7%	11
40 min prior	7%	11
35 min prior	6%	10
30 min prior	7%	11
25 min prior	13%	21
20 min prior	19%	30
15 min prior	20%	31
10 min prior	16%	25
5 min prior	4%	6

To conduct the queue analysis, the following four scenarios were analyzed:

1. One vehicle at a time can drop off students at a time with a 19 seconds per vehicle processing rate. (Only the first car in the queue would be able to drop off)
2. Two vehicles at a time can drop off students at a time with a 19 seconds per vehicle processing rate. (Only the first two car in the queue would be able to drop off)
3. Two vehicles at a time can drop off students at a time with a 30 seconds per vehicle processing rate.
4. Two vehicles at a time can drop off students at a time with a 40 seconds per vehicle processing rate.

Using the arrival rates and the processing rate, a queue can be calculated. If the arrival rate exceeds the processing rate, the vehicles that were not processed will begin to for the queue. **Table 14** shows the results for the queue analyses for the four scenarios.

Table 14 – Queue Analyses Results for the Scenarios

Time Prior to School Start	Trips	Cars Queued			
		Scenario 1	Scenario 2	Scenario 3	Scenario 4
> 45 min prior	0	0	0	0	0
45 min prior	11	0	0	0	0
40 min prior	11	0	0	0	0
35 min prior	10	0	0	0	[illegible]
30 min prior	11	0	0	0	[illegible]
25 min prior	21	5	0	0	[illegible]
20 min prior	30	19	0	0	[illegible]
15 min prior	31	34	0	1	[illegible]
10 min prior	25	43	0	0	[illegible]
5 min prior	6	33	0	0	[illegible]

20 minutes before school begins there will be vehicles queued on the public streets. Provide a map showing the queued vehicles, intersections and driveways that could be impacted. The street in front of the school is one-way. Will the waiting vehicle be blocking the street?

Since the length from the drop off point in the front of the school to Stieglitz Ave is 4 assuming 25 ft per vehicle, once the queue exceeds 17 vehicles, the network streets w become affected by the queue.

5.2 Pedestrian and Bicycle Circulation and Routes Analysis

According to the AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities, the following is recommended for schools:

1. Pedestrian and bicycle access is available from all directions.
2. Pedestrian and bicycle routes in surrounding streets connect to school.
3. Effective traffic control devices are provided.
4. A school walk route and safety program exist and safety patrols are provided within the vicinity.
5. Building is accessible to pedestrians from all sides.
6. Bus zones be separate from auto drop-off zones.
7. School facilities, including playgrounds, field, and meeting rooms, are available for community use.

Within a 0.25 mile radius of the school, the routes to and from the charter school were evaluated using **Figure 2**. Sidewalks and crosswalks are expected to be provided at all intersection. The current site plane for the school shows Diekenborn Dr and Sagan Loop ending in a cul- de-sac. Stop bars are shown at Intersection 1, 2, 3, 5, and 6. The site plan does show the school to be accessible from all sided to pedestrians. Bus zones are shown separate from the school parking/parent drop off loop. Since it is a new development, a walk route and safety program does not exist at the time of this study. A few bike routes were seen on Bobby Foster Rd and Sagan Loop.

5.3 Pedestrian and Vehicle Conflict Analysis

A traffic analysis was performed for the 2022 Build Out scenario to determine the pedestrian and vehicle conflicts. The following section describes the Synchro results for Build Out scenario.

Table 15 summarizes the intersection results for the 2022 AM and PM peak hour Build Out scenario. The Synchro results for the AM and PM peak hour analyses are included in **Appendix B**. All intersections experience LOS A, which usually means no conflicts between pedestrians and vehicles. This means that pedestrian are able to find adequate gaps to cross the intersections and not wait a long to cross the intersections.

Table 15 – Operational Measures for Build Scenarios

Intersection Number	Location	AM Peak		PM Peak	
		Delay (sec)	LOS	Delay (sec)	LOS
1	Bobby Foster Rd & Diekenborn Dr	1.34	A	0.74	A
2	Bobby Foster Rd & Newhall Dr	1.66	A	1.66	A
3	Stieglitz Ave & Diekenborn Dr	0.61	A	1.27	A
4	Stieglitz Ave & Entrance Driveway	0.15	A	0.10	A
5	Stieglitz Ave & Newhall Dr	0.91	A	0.20	A
6	Stieglitz Ave & Sagan Loop	0.00	A	0.00	A

5.4 Consistency with Existing or Planned Transit Routes and Stops Analysis

Since no transit routes are existing or planned within the project area, according to ABQ ride no other evaluations were conducted and the project area is found to be consistent.

SECTION 6 – EVALUATION OF REASONABLE ALTERNATIVES

6.1 Queue/Noise and Air Quality Impact Analysis

To avoid queues disrupting the roadway network, it is recommended that the minimum of two vehicles be allowed to drop off at the parent loop. It is also recommended that faculty from the school assist in the drop off procedures to keep the processing rates between 19 to 30 seconds per vehicle.

6.2 Pedestrian and Bicycle Circulation and Routes Analysis

It is recommended that a walk route and safety program be developed prior to opening the school. It is also recommended that Diekenborn Dr and Sagan Loop be connected to the through streets as the residential developments are built. More bike routes or shared use paths are recommended in the project area.

6.3 Pedestrian and Vehicle Conflict Analysis

Since the intersections experience a LOS A, no alternatives are recommended.

6.4 Consistency with Existing or Planned Transit Routes and Stops Analysis

No alternatives presented as a result of no transit routes existing or planned within the project area, according to ABQ.

Additional mitigation for noise and air quality:
-Develop and implement a No-Idle policy for waiting vehicles. Encourage the use of car pooling.

APPENDIX A

Data from Mountain View Middle School
Holden, Massachusetts

Appendix A

Table A.1: Day 1 Arrivals

Time	Buses	Employees	Parents	Total
7:30-7:35	0	5	10	15
7:35-7:40	0	2	7	9
7:40-7:45	0	6	8	14
7:45-7:50	2	5	9	16
7:50-7:55	5	7	17	29
7:55-8:00	4	5	18	27
8:00-8:05	3	5	20	28
8:05-8:10	0	2	21	23
8:10-8:15	0	1	11	12
Totals	14	38	121	173

Table A.2: Day 2 Arrivals

Time	Buses	Employees	Parents	Total
7:30-7:35	0	6	4	10
7:35-7:40	0	6	6	12
7:40-7:45	0	5	8	13
7:45-7:50	1	5	10	16
7:50-7:55	6	1	12	19
7:55-8:00	6	10	23	39
8:00-8:05	3	4	20	27
8:05-8:10	0	0	21	21
8:10-8:15	0	0	4	4
Totals	16	37	108	161

Table A.3: Day 3 Arrivals

Time	Buses	Employees	Parents	Total
7:30-7:35	0	9	14	23
7:35-7:40	0	3	7	10
7:40-7:45	0	3	5	8
7:45-7:50	1	4	7	12
7:50-7:55	6	7	10	23
7:55-8:00	6	7	30	43
8:00-8:05	1	4	21	26
8:05-8:10	0	2	19	21
8:10-8:15	0	1	6	7
Totals	14	40	119	173

Table A.4: Average Parent Arrivals (per minute)

Time	Day 1	Day 2	Day 3	Average
7:30-7:35	2.00	0.80	2.80	1.87
7:35-7:40	1.40	1.20	1.40	1.33
7:40-7:45	1.60	1.60	1.00	1.40
7:45-7:50	1.80	2.00	1.40	1.73
7:50-7:55	3.40	2.40	2.00	2.60
7:55-8:00	3.60	4.60	6.00	4.73
8:00-8:05	4.00	4.00	4.20	4.07
8:05-8:10	4.20	4.20	3.80	4.07
8:10-8:15	2.20	0.80	1.20	1.40

Table A.5: Day 1 Drop-Off Times

Time		Service Times									
7:30-7:35	No. of cars	1	4	2	1	1	1	1	1		
	Service Times (s)	16	18	15	18	15	30	30	17		
7:35-7:40	No. of cars	1	1	2	1	2					
	Service Times (s)	20	35	17	12	23					
7:40-7:45	No. of cars	1	1	2	1	1					
	Service Times (s)	28	11	31	9	11					
7:45-7:50	No. of cars	2	1	1	1	1	1	1			
	Service Times (s)	18	15	11	8	25	9	12			
7:50-7:55	No. of cars	1	1	2	2	3	1	2	2	1	1
	Service Times (s)	14	16	35	18	24	26	20	35	21	10
7:55-8:00	No. of cars	4	1	2	3	2	3	2			
	Service Times (s)	35	10	29	24	15	40	20			
8:00-8:05	No. of cars	3	2	3	3	2	1	2	3	3	
	Service Times (s)	17	15	15	27	10	11	16	31	28	
8:05-8:10	No. of cars	4	2	1	1	4	2	4			
	Service Times (s)	38	25	10	15	23	23	32			
8:10-8:15	No. of cars	2	2	1	1	1	1	3			
	Service Times (s)	18	14	8	12	15	13	22			

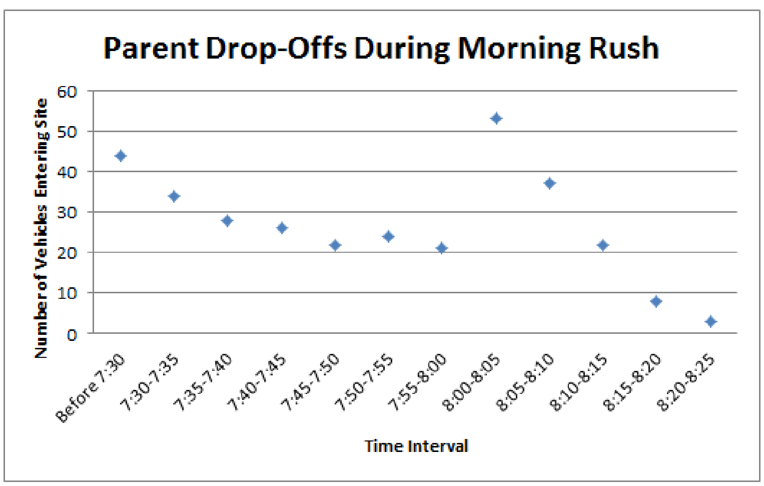

Figure A.1: Data Collected by Nitsch Engineering

Table A.6: Day 2 Drop-Off Times

Time		Service Times									
7:30-7:35	No. of cars	1	1	1	1						
	Service Times (s)	16	8	15	10						
7:35-7:40	No. of cars	1	3	1	1	1					
	Service Times (s)	14	39	5	8	25					
7:40-7:45	No. of cars	1	1	1	2	1	1				
	Service Times (s)	14	25	13	23	22	10				
7:45-7:50	No. of cars	3	2	1	1	2					
	Service Times (s)	46	17	19	8	39					
7:50-7:55	No. of cars	2	3	1	2	3	1				
	Service Times (s)	30	23	28	20	17	12				
7:55-8:00	No. of cars	1	3	2	2	1	2	4	4	3	3
	Service Times (s)	10	37	23	8	11	36	39	23	18	17
8:00-8:05	No. of cars	3	3	4	3	2	2	1	2		
	Service Times (s)	27	15	23	35	17	31	17	8		
8:05-8:10	No. of cars	1	3	3	3	2	4	3	1		
	Service Times (s)	9	33	20	18	24	40	12	25		
8:10-8:15	No. of cars	1	1	1							
	Service Times (s)	6	14	23							

Table A.7: Day 3 Drop-Off Times

Time		Service Times								
7:30-7:35	No. of cars	1	3	2	1	1	1			
	Service Times (s)	13	26	23	4	7	15			
7:35-7:40	No. of cars	2	1	2	1					
	Service Times (s)	28	17	29	16					
7:40-7:45	No. of cars	3	1	1						
	Service Times (s)	21	9	22						
7:45-7:50	No. of cars	1	2	2	1					
	Service Times (s)	13	30	15	17					
7:50-7:55	No. of cars	1	1	3	4	3	3			
	Service Times (s)	18	23	52	38	22	20			
7:55-8:00	No. of cars	3	4	4	3	3	4			
	Service Times (s)	20	30	17	23	30	40			
8:00-8:05	No. of cars	3	3	2	2	4	4	3	2	4
	Service Times (s)	24	20	16	12	30	35	22	17	30
8:05-8:10	No. of cars	2	3	2	1	1	1	1		
	Service Times (s)	13	25	14	8	8	10	10		
8:10-8:15	No. of cars	1	1	1	1	1	1			
	Service Times (s)	7	8	8	10	5	8			

Table A.8: Arrivals

Time	Buses	Employees	Parents	Total
7:30-7:35	0	5	10	15
7:35-7:40	0	5	21	26
7:40-7:45	0	2	12	14
7:45-7:50	4	2	15	21
7:50-7:55	4	6	24	34
7:55-8:00	5	10	29	44
8:00-8:05	1	5	35	41
8:05-8:10	0	1	27	28
8:10-8:15	0	0	6	6
Totals	14	36	179	229

Table A.9: Average Arrivals of Parents

Time	Arrivals (per minute)
7:30-7:35	2
7:35-7:40	4.2
7:40-7:45	2.4
7:45-7:50	3
7:50-7:55	4.8
7:55-8:00	5.8
8:00-8:05	7
8:05-8:10	5.4
8:10-8:15	1.2

Table A.10: Rainy Day Drop-Off Times

Time	Service Times														
7:30-7:35	No. of cars	1	1	1	2	1	1	1	2						
	Svc Time(s)	17	10	8	30	21	8	12	25						
7:35-7:40	No. of cars	3	2	1	3	3	2	1	2						
	Svc Time(s)	23	22	11	26	24	8	12	22						
7:40-7:45	No. of cars	2	3	1	1	1	1	2	2	1	1				
	Svc Time(s)	20	25	10	10	8	17	20	16	12	18				
7:45-7:50	No. of cars	1	2	2	3	2	2	2							
	Svc Time(s)	11	30	16	30	14	8	20							
7:50-7:55	No. of cars	2	1	2	3	1	1	1	2	4	3	2			
	Svc Time(s)	18	13	17	30	19	14	25	30	22	22	19			
7:55-8:00	No. of cars	4	2	3	3	3	3	2	1	2	3	1	3	4	
	Svc Time(s)	42	13	20	18	20	14	23	10	8	14	5	34	20	
8:00-8:05	No. of cars	3	4	2	4	4	3	5	3						
	Svc Time(s)	21	30	13	18	18	12	20	18						
8:05-8:10	No. of cars	3	3	1	1	4	2	3	3	1	3	3	1	2	1
	Svc Time(s)	15	24	11	9	28	17	13	11	8	22	19	43	19	15
8:10-8:15	No. of cars														
	Svc Time(s)														

APPENDIX B

Synchro Reports:
2022 Build Out
AM and PM Peak Hours

Approach		
Approach Direction	EB	
Median Present?	Yes	
Approach Delay(s)	0.8	
Level of Service	A	

Crosswalk		
Length (ft)	12	28
Lanes Crossed	2	2
Veh Vol Crossed	74	22
Ped Vol Crossed	0	0
Yield Rate(%)	0	0
Ped Platooning	No	No
Critical Headway (s)	6.43	11.00
Prob of Delayed X-ing	0.12	0.07
Prob of Blocked Lane	0.06	0.03
Delay for adq Gap	3.59	5.82
Avg Ped Delay (s)	0.44	0.38

Approach		
Approach Direction	WB	
Median Present?	Yes	
Approach Delay(s)	1.5	
Level of Service	A	

Crosswalk		
Length (ft)	12	28
Lanes Crossed	2	2
Veh Vol Crossed	22	74
Ped Vol Crossed	0	0
Yield Rate(%)	0	0
Ped Platooning	No	No
Critical Headway (s)	6.43	11.00
Prob of Delayed X-ing	0.04	0.20
Prob of Blocked Lane	0.02	0.11
Delay for adq Gap	3.32	6.64
Avg Ped Delay (s)	0.13	1.34

Approach		
Approach Direction	EB	
Median Present?	Yes	
Approach Delay(s)	1.3	
Level of Service	A	
Crosswalk		
Length (ft)	12	28
Lanes Crossed	2	2
Veh Vol Crossed	90	43
Ped Vol Crossed	0	0
Yield Rate(%)	0	0
Ped Platooning	No	No
Critical Headway (s)	6.43	11.00
Prob of Delayed X-ing	0.15	0.12
Prob of Blocked Lane	0.08	0.06
Delay for adq Gap	3.67	6.13
Avg Ped Delay (s)	0.55	0.76

Approach		
Approach Direction	WB	
Median Present?	Yes	
Approach Delay(s)	1.9	
Level of Service	A	
Crosswalk		
Length (ft)	12	28
Lanes Crossed	2	2
Veh Vol Crossed	43	90
Ped Vol Crossed	0	0
Yield Rate(%)	0	0
Ped Platooning	No	No
Critical Headway (s)	6.43	11.00
Prob of Delayed X-ing	0.07	0.24
Prob of Blocked Lane	0.04	0.13
Delay for adq Gap	3.43	6.91
Avg Ped Delay (s)	0.25	1.66

Approach	
Approach Direction	NB
Median Present?	No
Approach Delay(s)	0.6
Level of Service	A
Crosswalk	
Length (ft)	32
Lanes Crossed	2
Veh Vol Crossed	29
Ped Vol Crossed	39
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	12.14
Prob of Delayed X-ing	0.09
Prob of Blocked Lane	0.05
Delay for adq Gap	6.59
Avg Ped Delay (s)	0.61
Approach	
Approach Direction	SB
Median Present?	No
Approach Delay(s)	0.6
Level of Service	A
Crosswalk	
Length (ft)	32
Lanes Crossed	2
Veh Vol Crossed	29
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	12.14
Prob of Delayed X-ing	0.09
Prob of Blocked Lane	0.05
Delay for adq Gap	6.59
Avg Ped Delay (s)	0.61

Approach	
Approach Direction	WB
Median Present?	No
Approach Delay(s)	0.1
Level of Service	A

Crosswalk	
Length (ft)	20
Lanes Crossed	1
Veh Vol Crossed	14
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	8.71
Prob of Delayed X-ing	0.03
Prob of Blocked Lane	0.03
Delay for adq Gap	4.48
Avg Ped Delay (s)	0.15

Approach	
Approach Direction	WB
Median Present?	No
Approach Delay(s)	0.9
Level of Service	A

Crosswalk	
Length (ft)	20
Lanes Crossed	1
Veh Vol Crossed	81
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	8.71
Prob of Delayed X-ing	0.18
Prob of Blocked Lane	0.18
Delay for adq Gap	5.13
Avg Ped Delay (s)	0.91

Approach	
Approach Direction	NB
Median Present?	No
Approach Delay(s)	0.0
Level of Service	A
Crosswalk	
Length (ft)	32
Lanes Crossed	2
Veh Vol Crossed	0
Ped Vol Crossed	20
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	12.14
Prob of Delayed X-ing	0.00
Prob of Blocked Lane	0.00
Delay for adq Gap	0.00
Avg Ped Delay (s)	0.00
Approach	
Approach Direction	SB
Median Present?	No
Approach Delay(s)	0.0
Level of Service	A
Crosswalk	
Length (ft)	32
Lanes Crossed	2
Veh Vol Crossed	0
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	12.14
Prob of Delayed X-ing	0.00
Prob of Blocked Lane	0.00
Delay for adq Gap	0.00
Avg Ped Delay (s)	0.00

Approach		
Approach Direction	EB	
Median Present?	Yes	
Approach Delay(s)	0.9	
Level of Service	A	
Crosswalk		
Length (ft)	12	28
Lanes Crossed	2	2
Veh Vol Crossed	30	42
Ped Vol Crossed	0	0
Yield Rate(%)	0	0
Ped Platooning	No	No
Critical Headway (s)	6.43	11.00
Prob of Delayed X-ing	0.05	0.12
Prob of Blocked Lane	0.03	0.06
Delay for adq Gap	3.36	6.12
Avg Ped Delay (s)	0.18	0.74

Approach		
Approach Direction	WB	
Median Present?	Yes	
Approach Delay(s)	0.8	
Level of Service	A	
Crosswalk		
Length (ft)	12	28
Lanes Crossed	2	2
Veh Vol Crossed	42	30
Ped Vol Crossed	0	0
Yield Rate(%)	0	0
Ped Platooning	No	No
Critical Headway (s)	6.43	11.00
Prob of Delayed X-ing	0.07	0.09
Prob of Blocked Lane	0.04	0.04
Delay for adq Gap	3.42	5.94
Avg Ped Delay (s)	0.25	0.52

Approach		
Approach Direction	EB	
Median Present?	Yes	
Approach Delay(s)	1.3	
Level of Service	A	
Crosswalk		
Length (ft)	12	28
Lanes Crossed	2	2
Veh Vol Crossed	90	43
Ped Vol Crossed	0	0
Yield Rate(%)	0	0
Ped Platooning	No	No
Critical Headway (s)	6.43	11.00
Prob of Delayed X-ing	0.15	0.12
Prob of Blocked Lane	0.08	0.06
Delay for adq Gap	3.67	6.13
Avg Ped Delay (s)	0.55	0.76

Approach		
Approach Direction	WB	
Median Present?	Yes	
Approach Delay(s)	1.9	
Level of Service	A	
Crosswalk		
Length (ft)	12	28
Lanes Crossed	2	2
Veh Vol Crossed	43	90
Ped Vol Crossed	0	0
Yield Rate(%)	0	0
Ped Platooning	No	No
Critical Headway (s)	6.43	11.00
Prob of Delayed X-ing	0.07	0.24
Prob of Blocked Lane	0.04	0.13
Delay for adq Gap	3.43	6.91
Avg Ped Delay (s)	0.25	1.66

Approach	
Approach Direction	NB
Median Present?	No
Approach Delay(s)	1.3
Level of Service	A

Crosswalk	
Length (ft)	32
Lanes Crossed	2
Veh Vol Crossed	58
Ped Vol Crossed	20
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	12.14
Prob of Delayed X-ing	0.18
Prob of Blocked Lane	0.09
Delay for adq Gap	7.14
Avg Ped Delay (s)	1.27

Approach	
Approach Direction	SB
Median Present?	No
Approach Delay(s)	1.3
Level of Service	A

Crosswalk	
Length (ft)	32
Lanes Crossed	2
Veh Vol Crossed	58
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	12.14
Prob of Delayed X-ing	0.18
Prob of Blocked Lane	0.09
Delay for adq Gap	7.14
Avg Ped Delay (s)	1.27

Approach	
Approach Direction	WB
Median Present?	No
Approach Delay(s)	0.1
Level of Service	A

Crosswalk	
Length (ft)	20
Lanes Crossed	1
Veh Vol Crossed	9
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	8.71
Prob of Delayed X-ing	0.02
Prob of Blocked Lane	0.02
Delay for adq Gap	4.44
Avg Ped Delay (s)	0.10

Approach	
Approach Direction	WB
Median Present?	No
Approach Delay(s)	0.2
Level of Service	A

Crosswalk	
Length (ft)	20
Lanes Crossed	1
Veh Vol Crossed	19
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	8.71
Prob of Delayed X-ing	0.04
Prob of Blocked Lane	0.04
Delay for adq Gap	4.53
Avg Ped Delay (s)	0.20

Approach	
Approach Direction	NB
Median Present?	No
Approach Delay(s)	0.0
Level of Service	A

Crosswalk	
Length (ft)	32
Lanes Crossed	2
Veh Vol Crossed	0
Ped Vol Crossed	10
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	12.14
Prob of Delayed X-ing	0.00
Prob of Blocked Lane	0.00
Delay for adq Gap	0.00
Avg Ped Delay (s)	0.00

Approach	
Approach Direction	SB
Median Present?	No
Approach Delay(s)	0.0
Level of Service	A

Crosswalk	
Length (ft)	32
Lanes Crossed	2
Veh Vol Crossed	0
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	12.14
Prob of Delayed X-ing	0.00
Prob of Blocked Lane	0.00
Delay for adq Gap	0.00
Avg Ped Delay (s)	0.00