

TRAFFIC IMPACT & MITIGATION ANALYSIS
FOR THE DEVELOPMENT AT THE
NWC Pima Road and Dynamite Boulevard
Scottsdale, Arizona

Prepared for:

City of Scottsdale
Transportation Systems Department
7447 East Indian School Road, Suite 205
Scottsdale, Arizona 85251

Prepared by:



Transportation | Environmental | Geotechnical | Structural | Land Development



*Traffic Impact & Mitigation Analysis
for the development at the*
NWC Pima Road and Dynamite Boulevard
Scottsdale, Arizona

UCGC Project Number: TR9084

City of Scottsdale Project Numbers:
7-TA-2009
38-PA-2009

Prepared for:

City of Scottsdale
Transportation Systems Department
7447 East Indian School Road, Suite 205
Scottsdale, Arizona 85251

June 11, 2010

Prepared by:

United Civil Group Corporation



Conducted by: Expires 12/31/2012
Keith A. Winney, P.E.
Project Engineer

TABLE OF CONTENTS

I. INTRODUCTION AND SUMMARY	3
A. PURPOSE OF THE REPORT	3
B. STUDY OBJECTIVES	3
II. PROPOSED DEVELOPMENT	4
A. SITE LOCATION	4
B. LAND USE AND INTENSITY	4
C. SITE ACCESSIBILITY AND INTERNAL CIRCULATION	4
D. PHASING AND TIMING	4
Figure 1: Vicinity Map	5
Figure 2: Site Plan	6
Figure 3: Vicinity Aerial View	7
III. STUDY AREA CONDITIONS	8
A. STUDY AREA LAND USE	8
B. ANTICIPATED FUTURE DEVELOPMENT	8
C. OBSERVED OFF-SITE ISSUES	8
IV. METHODOLOGIES AND STANDARDS	9
A. LEVEL OF SERVICE (LOS)	9
Table 1: Level of Service for Signalized Intersections	9
Table 2: Level of Service for TWSC Intersections	10
V. EXISTING CONDITIONS	11
A. PHYSICAL CHARACTERISTICS	11
B. TRAFFIC VOLUMES	11
B.1 Existing Average Daily Traffic	11
B.2 Turning Movement Counts	11
Figure 4: Existing Geometrics – Year 2009	12
Figure 5: Existing Traffic – Year 2009	13
C. EXISTING INTERSECTION LEVEL OF SERVICE	14
Table 3: Existing Conditions Level of Service	14
VI. PROJECTED TRAFFIC	15
A. TRAFFIC GENERATION	15
A.1. Trip Generation for the Existing Zoning (R1-190 ESL)	15
Table 4: Trip Generation – Existing Zoning	16
A.2. Trip Generation for the Proposed Development	16
Table 5: Trip Generation – Proposed Development (Weekday)	17
Figure 6: Site Generated Traffic and Trip Distribution	18
Table 6: Trip Generation – Proposed Development (Sunday)	19
A.3. Trip Generation Comparison	19
Table 7: Trip Generation Comparisons	20

A.4. Pass-By Trips	20
Table 8: Pass-By Trips	21
B. TRIP DISTRIBUTION	21
Table 9: Trip Distribution Percentages	21
C. PROJECTED NON-SITE GENERATED TRAFFIC	21
D. TOTAL TRAFFIC	22
Figure 7: Scottsdale First Assembly School Site Generated Traffic	23
Figure 8: Background Traffic and Levels of Service – Year 2015	24
Figure 9: Total Traffic and Levels of Service – Year 2015	25
VII. TRAFFIC AND IMPROVEMENT ANALYSIS	26
A. DECELERATION LANE ANALYSES	26
Table 10: Warrants for Right-Turn Deceleration Lanes	26
Table 11: Warrants for Left-Turn Deceleration Lanes	27
B. SIGHT TRIANGLES	27
Figure 10: Recommendations	28
C. SITE ACCESSIBILITY AND ON-SITE CIRCULATION IMPROVEMENTS	29
C.1 Site Accessibility	29
C.2 On-site Circulation	29
D. INTERSECTION LEVEL OF SERVICE ANALYSES	30
D.1 Background traffic – Year 2015	30
Table 12: Levels of Service – 2015 Background Traffic	30
D.2 Total traffic – Year 2015	30
Table 13: Levels of Service – 2015 Total Traffic	31
VIII. CONCLUSIONS AND RECOMMENDATIONS	32
IX. LIMITATIONS	34
X. SOURCES	35

Appendix A . . . Traffic Counts
Appendix B . . . Capacity Analyses

I. INTRODUCTION AND SUMMARY

A. PURPOSE OF THE REPORT

The City of Scottsdale initiated this traffic impact study which has been performed under the City of Scottsdale guidelines for *Transportation Impact and Mitigation Analysis (TIMA) for Proposed Developments*. This traffic impact analysis has been performed in general accordance with these requirements, locally accepted standards, and industry practice to determine the extent of the transportation impacts of the proposed development.

The City of Scottsdale has received a request for a text amendment to the Zoning Ordinance along with an application for a conditional use permit, which will allow for rural neighborhood support services on an approximate ten acre property located at the northwest corner of Pima Road and Dynamite Boulevard. The rural neighborhood support services of this proposed development include a six-pump (12-fueling position) automotive service/gasoline station with alternative fueling and energy sources and an attached 5,500 square foot general store, along with 13,000 square feet of retail and restaurant land use. Currently, the parcel of land is undeveloped native desert.

B. STUDY OBJECTIVES

The objective of this report is to analyze the traffic impacts of the rural neighborhood support services use permit request. More specifically, to analyze the traffic impacts of the proposed development on the northwest corner of Pima Road and Dynamite Boulevard and to recommend any needed improvements to maintain efficient and safe traffic operations on the street system in the vicinity of the site.

II. PROPOSED DEVELOPMENT

A. SITE LOCATION

The proposed development is located on the northwest corner of Pima Road and Dynamite Boulevard in Scottsdale, Arizona, as shown in *Figure 1: Vicinity Map*.

B. LAND USE AND INTENSITY

The intent of the text amendment and use permit application is to allow the development of the retail, restaurant, and gasoline/service station with alternative fueling and energy sources on the existing, vacant, approximate ten acre (approximately 435,000 square feet) parcel. The development is planned to contain a total of 13,000 square feet of retail and restaurant land use space in separate buildings. In addition, a 6-pump (12 fueling position) gasoline station with attached 5,500 square foot general store is planned within the development.

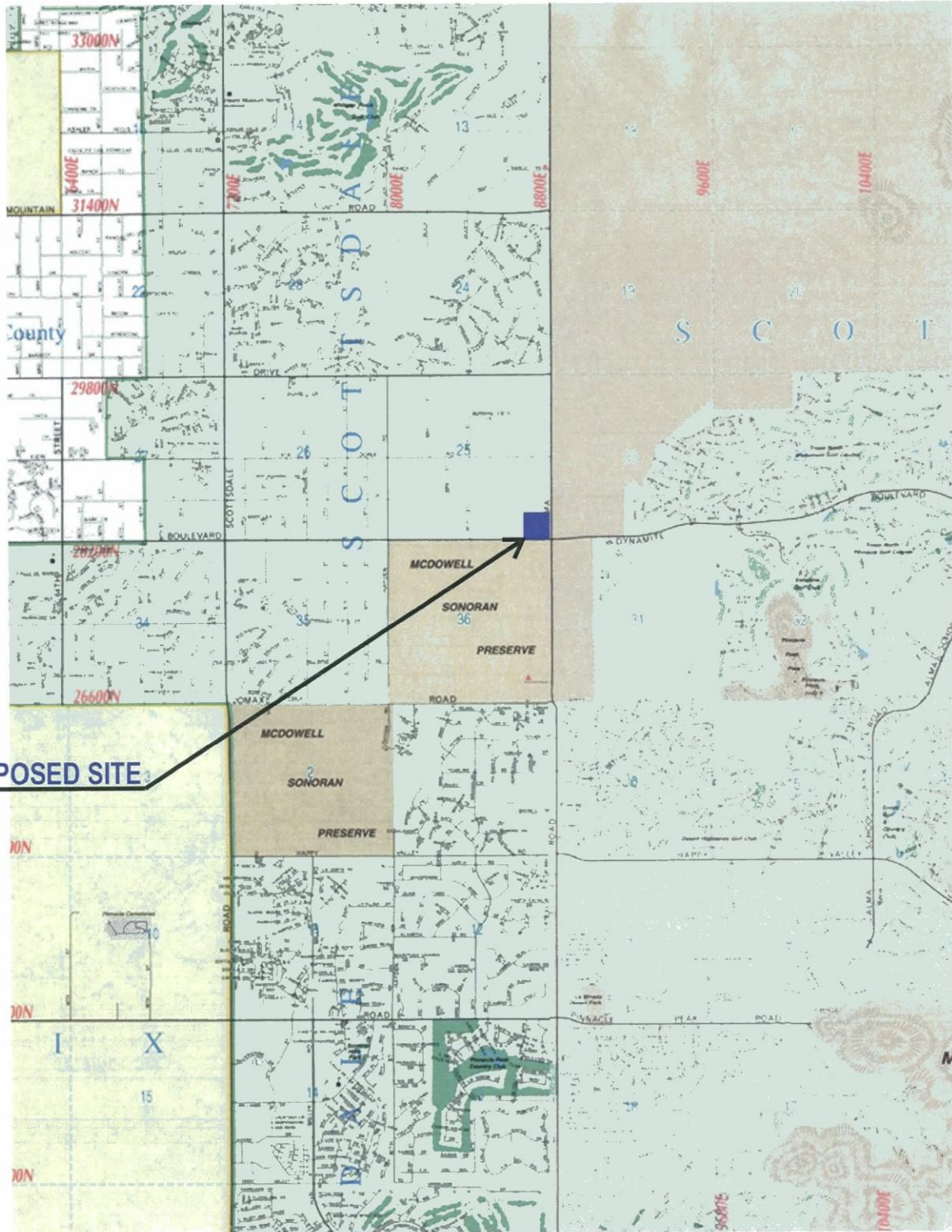
C. SITE ACCESSIBILITY AND INTERNAL CIRCULATION

Four site access driveways are proposed to serve the development, Access A, Access B, Access C, and Access D. Access A (western-most driveway accessing Dynamite Boulevard) is located approximately 600 feet west of Pima Road. Access B is located approximately 230 feet east of Access A, approximately 370 feet west of Pima Road, and accesses Dynamite Boulevard. Access C is located approximately 350 feet north of Dynamite Boulevard and accesses Pima Road. Access D (northern-most driveway accessing Pima Road) is located approximately 280 feet north of Access C, approximately 630 feet north of Dynamite Boulevard, and accesses Pima Road. Access A and Access D are planned to be full accesses. Access B and Access C are planned to be right-in/right-out restricted accesses. *Figure 2: Site Plan* graphically depicts the existing accesses in relation to the proposed development. *Figure 3: Vicinity Aerial View* graphically depicts the subject site in relation to the surrounding street network.

Internal site circulation, layout, site access, and parking areas were reviewed for the proposed development. *Figure 2: Site Plan* conceptualizes the proposed development's accessibility. Additional discussion related to on-site circulation and site accessibility is located in section VII of this report.

D. PHASING AND TIMING

The proposed development is anticipated to be constructed in one phase and is expected to be open and operating by the year 2015. Regardless if the development is constructed and operational prior to the year 2015, all recommendations remain valid and apply.



Wide World of Maps, Inc copyright notice and reproduced with permission No. 442166



Not to Scale

Figure 1: Vicinity Map



Not to Scale

Figure 2: Site Plan

PROPOSED SITE



<http://www.maricopa.gov/Assessor/GIS/map.html>



Not to Scale

Figure 3: Vicinity Aerial View

III. STUDY AREA CONDITIONS

Descriptions of existing land uses in the study area are presented in this section along with the existing and future transportation systems available to serve the study area.

A. STUDY AREA LAND USE

The property on which the proposed development will be located is currently vacant, native desert. To the north of the subject site is native desert followed by a church. To the west of the property is native desert followed by a large ranch. To the east of the development is Pima Road followed by native desert. To the south of the development is Dynamite Boulevard followed by native desert.

B. ANTICIPATED FUTURE DEVELOPMENT

Located approximately one-quarter mile north of the proposed development is the Scottsdale First Assembly Church. The church was recently granted an approved conditional use permit to operate a private school within the existing church. The forecasted traffic associated with the operation of the Scottsdale First Assembly Church private school is included in the non-site generated traffic portion of this study, presented in section VI.C.

C. OBSERVED OFF-SITE ISSUES

During the site visit and turning movement count at Pima Road and Dynamite Boulevard, no off-site issues were noted.

IV. METHODOLOGIES AND STANDARDS

This chapter defines the methodologies and standards utilized in the analysis of intersection performance, deceleration lane criteria, and street classification systems.

A. LEVEL OF SERVICE (LOS)

Levels of service provide a common and consistent means of evaluating the need for roadway improvements. The LOS concept is widely used and offers a uniform analysis methodology.

Beginning in 1965, the level of service (LOS) concept has been used in traffic engineering to describe the quality of traffic flow and the degree of congestion a driver can expect. The concept defines the near-capacity condition as Level of Service "E" while a free flow condition under which a driver would experience very little or no delay is defined as Level of Service "A". Capacity analysis is the procedure used to compare the forecast traffic volumes with the theoretical carrying capacity of an intersection. The roadway system's ability to accommodate traffic demand is typically controlled and limited by the capacity of the intersections. Therefore, intersection capacity analysis is a principal tool used in traffic engineering to determine the adequacy of a system to meet traffic demands.

Based on peak hour turning movement counts, the level of service at each signalized intersection is calculated using methodologies as presented in Chapter 16 of the *Highway Capacity Manual 2000* published by the Transportation Research Board. The capacity analysis methodologies for un-signalized intersections are outlined in Chapter 17 of the same document.

For signalized intersections, LOS is based on control delay per vehicle, measured in seconds. Table 1 shows the seconds of control delay per vehicle that defines each level of service for signalized intersections.

TABLE 1: LEVEL OF SERVICE FOR SIGNALIZED INTERSECTIONS

Level of Service	Control Delay per Vehicle (Sec/Veh)
A	≤ 10.0
B	> 10.0 and ≤ 20.0
C	> 20.0 and ≤ 35.0
D	> 35.0 and ≤ 55.0
E	> 55.0 and ≤ 80.0
F	> 80.0

Exhibit 16-2 Highway Capacity Manual 2000

For un-signalized intersections, level of service is determined by the computed or measured average total delay and is defined for each minor movement. The LOS is not defined for the intersection as a whole. Typically, LOS D or better is desirable. Table 2 shows the level of service criteria for two-way stop controlled (TWSC) intersections.

TABLE 2: LEVEL OF SERVICE FOR TWSC INTERSECTIONS

Level of Service	Average Total Delay (Sec/Veh)
A	≤ 10
B	> 10 and ≤ 15
C	> 15 and ≤ 25
D	> 25 and ≤ 35
E	> 35 and ≤ 50
F	> 50

Exhibit 17-2 Highway Capacity Manual 2000

The level of service criteria for two-way stop controlled intersections is somewhat different from the criteria used for signalized intersections primarily because different transportation facilities create different driver perceptions. The expectation is that a signalized intersection is designed to carry higher traffic volumes and experience greater delay than an un-signalized intersection.

V. EXISTING CONDITIONS

The analysis of existing conditions includes the following items: physical characteristics; traffic volumes; and existing condition capacity analyses for intersections. The analysis of existing conditions provides a base against which the incremental traffic impacts on Pima Road, Dynamite Boulevard, and the associated intersection can be measured, due to the change in traffic from the proposed development.

A. PHYSICAL CHARACTERISTICS

Currently, Pima Road is a two-lane roadway north of Dynamite Boulevard and a four-lane roadway south of Dynamite Boulevard. The posted speed limit adjacent to the development is 50 miles per hour. Pima Road is classified as a minor arterial in the City of Scottsdale's 2008 Transportation Master Plan.

Currently, Dynamite Boulevard is a two-lane roadway west of Pima Road and a four-lane roadway with a raised median east of Pima Road. The posted speed limit adjacent to the development is 50 miles per hour. Dynamite Boulevard is classified as a minor arterial in the City of Scottsdale's 2008 Transportation Master Plan.

The existing geometrics for the Pima Road/Dynamite Boulevard intersection are as follows:

- Northbound* – 1 left-turn lane/1 through lane/1 right-turn lane
- Southbound* – 1 left-turn lane/2 through lanes/1 right-turn lane
- Eastbound* – 1 left-turn lane/1 through lane/1 right-turn lane
- Westbound* – 1 left-turn lane/1 through lane/1 right-turn lane

The Pima Road/Dynamite Boulevard intersection is a signalized intersection. *Figure 4: Existing Geometrics – Year 2009* graphically depicts the existing geometrics.

B. TRAFFIC VOLUMES

B.1 EXISTING AVERAGE DAILY TRAFFIC

United Civil Group collected existing 24-hour traffic volume counts on Thursday, September 10, 2009 on Pima Road and Dynamite Boulevard. The resulting directional ADT volumes are presented on *Figure 5: Existing Traffic – Year 2009*.

B.2 TURNING MOVEMENT COUNTS

United Civil Group collected turning movement counts at the intersection of Pima Road/Dynamite Boulevard on Wednesday, September 9th, 2009. The turning movement counts were collected in 15-minute intervals during the AM peak period (7:00 a.m. to 9:00 a.m.) and PM peak period (4:00 p.m. to 6:00 p.m.). The AM peak hour was found to be from 7:45 a.m. to 8:45 a.m. with 2,242 vehicles entering the intersection. The PM peak hour was found to be between 4:45 p.m. and 5:45 p.m. with 1,959 vehicles entering the intersection. All collected traffic volume data can be found in *Appendix A: Traffic Counts*.

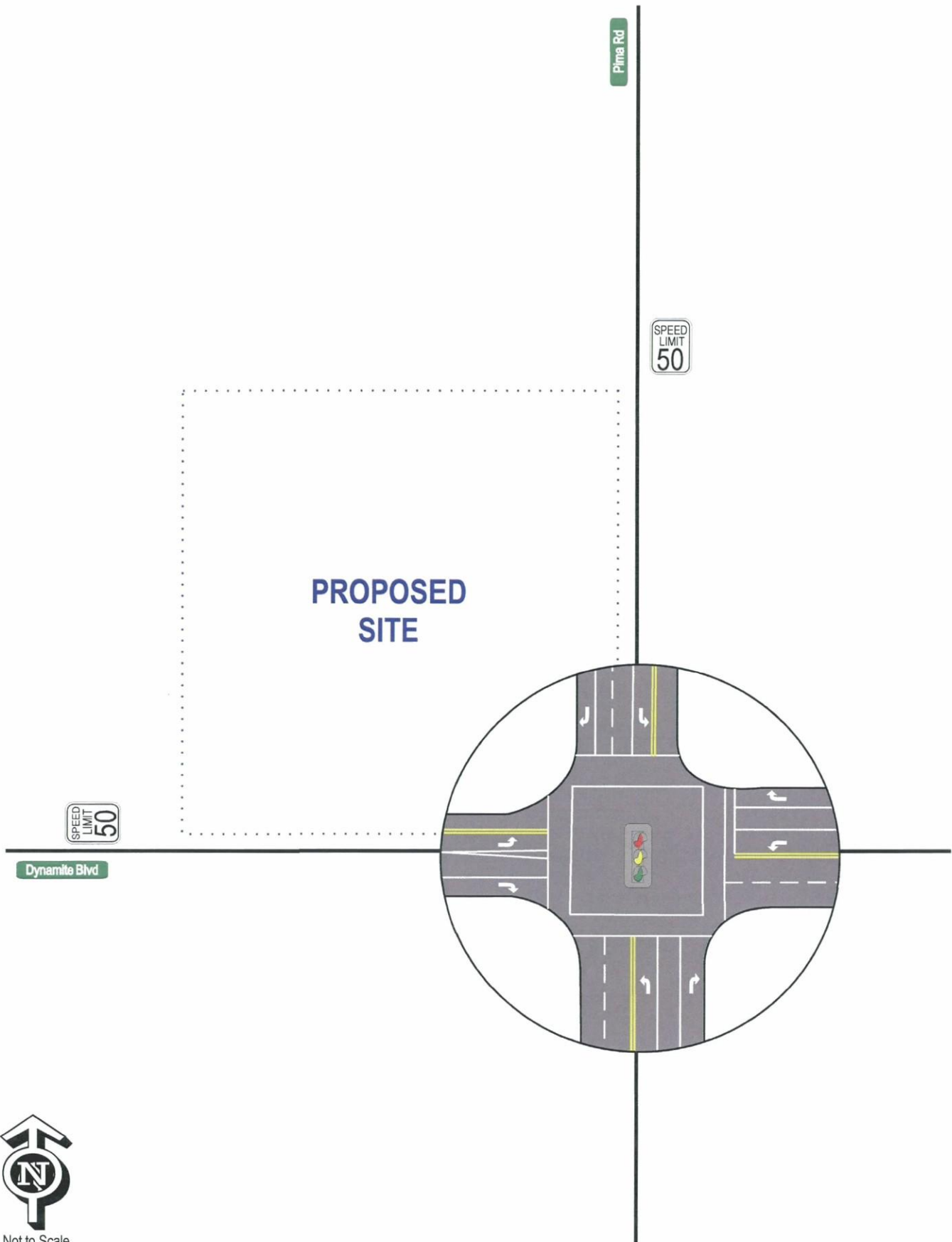
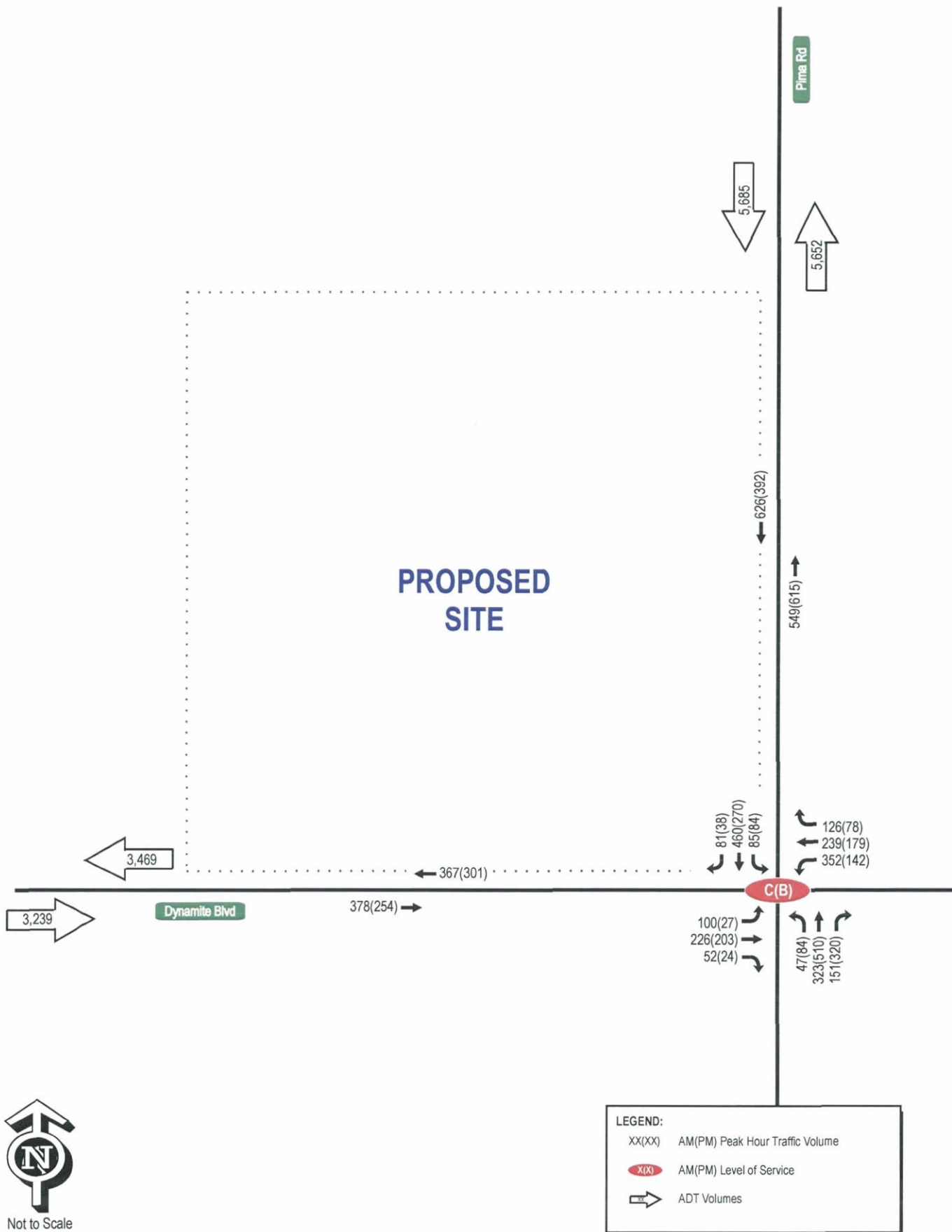


Figure 4: Existing Geometrics - Year 2009



Not to Scale

Figure 5: Existing Traffic - Year 2009

C. EXISTING INTERSECTION LEVEL OF SERVICE

The levels of service at the intersections within the study area were evaluated using the turning movement counts collected by United Civil Group in September, 2009. TRAFFIX version 7.9 was utilized to analyze the study area intersection of Pima Road/Dynamite Boulevard using the methodologies as presented in the Highway Capacity Manual, HCM 2000. The levels of service descriptions for intersections are presented in Section IV of this report. The existing intersection geometry and the type of traffic control, as presented in *Figure 4*, along with the collected existing traffic presented in *Figure 5*, were used to perform the capacity analysis and obtain the level of service results.

The results of the existing levels of service are presented in *Table 4: Existing Conditions Level of Service* and are shown on *Figure 5*.

TABLE 3: EXISTING CONDITIONS LEVEL OF SERVICE

Intersection Location	EB	WB	NB	SB	Intersection
Pima Road/Dynamite Boulevard – signalized					
<i>AM Peak Hour</i>	C	B	C	C	C
<i>PM Peak Hour</i>	C	C	B	B	B

As can be seen in the above table, the intersection of Pima Road/Dynamite Boulevard currently operates at acceptable levels of service, LOS C and LOS B, during the AM and PM peak hours, respectively. Summaries of the TRAFFIX version 7.9 output calculations are included in *Appendix B: Capacity Analyses*.

VI. PROJECTED TRAFFIC

A. TRAFFIC GENERATION

Estimates of the traffic volumes for the various allowed land uses of the subject site were determined from transportation planning data taken from the Institute of Transportation Engineers (ITE) publication titled Trip Generation, 8th Edition, 2008. The ITE rates are based on studies that measure the trip generation characteristics for various types of land uses. The rates are expressed in terms of trips per unit of land use type. This publication is considered the standard for the transportation engineering profession.

A.1. TRIP GENERATION FOR THE EXISTING ZONING (R1-190 ESL)

Based on the City of Scottsdale's zoning ordinance definitions, the uses allowed in the R1-190 district are generally, but not limited to, single-family residential, public elementary and high schools, and churches and places of worship. Single-family residences and churches and places of worship have been assumed as the most likely land uses that would be developed at the existing subject site under its existing zoning. Based on this assumption, Single-Family Detached Housing (ITE land use code 210) and Church (ITE land use code 560) have been assumed for trip generation and comparison purposes. Descriptions of the assumed land uses of the site follow.

Single-family detached housing – Single-family detached housing includes all single-family detached homes on individual lots. A typical site surveyed is a suburban subdivision. City of Scottsdale property development standards under the R1-190 zoning designation require that each lot shall have a minimum area of at least 190,000 square feet.

Church – A church is a building in which public worship services are held. A church houses an assembly hall or sanctuary; it may also house meeting rooms, classrooms and, occasionally, dining, catering, or party facilities. Based on the existing City of Scottsdale zoning ordinance, a floor area ratio (FAR) of 0.2 has been assumed for this land use.

The trip generation figures are presented on the following page in *Table 4: Trip Generation – Existing Zoning*.

TABLE 4: TRIP GENERATION – EXISTING ZONING

Land Use	ITE Code	Units	Size	Daily	AM Peak			PM Peak		
					In	Out	Total	In	Out	Total
Single-Family Detached Housing (weekday)	210	D.U.	2	19	0	2	2	1	1	2
Church (weekday)	560	1000s sf	87.1	793	30	19	49	23	25	48
Church (Sunday)	560	1000s sf	87.1	3,190	512	512	1,024	-	-	-

Single-Family Detached Housing (210)

Weekday Total	T = 9.57 (X)	50% entering, 50% exiting
AM Peak Hour	T = 0.75 (X)	25% entering, 75% exiting
PM Peak Hour	T = 1.01 (X)	63% entering, 37% exiting

Church (560)

Weekday Total	T = 9.11 (X)	50% entering, 50% exiting
AM Peak Hour	T = 0.56 (X)	62% entering, 38% exiting
PM Peak Hour	T = 0.55 (X)	48% entering, 52% exiting
Sunday Total	T = 36.63 (X)	50% entering, 50% exiting
Peak Hour of Church	T = 11.76 (X)	50% entering, 50% exiting

Source: ITE Trip Generation Manual 8th Edition

A.2. TRIP GENERATION FOR THE PROPOSED DEVELOPMENT

The development is planned to include a 13,000 square foot shopping center, which includes retail and restaurant uses. In addition, a six-pump (12-fueling position) gasoline/service station with attached 5,500 square foot general store (convenience market) is part of the planned development. Shopping Center (ITE land use code 820) and Gasoline/Service Station with Convenience Market (ITE land use code 945) have been assumed for trip generation and comparison purposes. A description of the assumed land uses of the proposed development, as according to ITE's *Trip Generation* follows.

Shopping center – A shopping center is an integrated group of commercial establishments that is planned, developed, owned and managed as a unit. Many shopping centers, in addition to the integrated unit of shops in one building or enclosed around a mall, include outparcels. These buildings are typically drive-in banks, retail stores, restaurants, or small offices.

Gasoline/service station with convenience market – This land use includes gasoline/service stations with convenience markets where the primary business is the fueling of motor vehicles. Some commonly sold convenience items are newspapers, coffee or other beverages, and snack items that are usually consumed in the car.

The trip generation estimate for the proposed development for a weekday is presented in *Table 5: Trip Generation – Proposed Development (Weekday)*.

TABLE 5: TRIP GENERATION – PROPOSED DEVELOPMENT (WEEKDAY)

Land Use	ITE Code	Units	Size	Daily	AM Peak			PM Peak		
					In	Out	Total	In	Out	Total
Shopping Center (Weekday)	820	1000s S.F.	13	558	8	5	13	24	25	49
Gasoline/Service Station with Convenience Market (Weekday)	945	Fueling Pos.	12	1,953	61	61	122	80	80	160
Totals (Weekday)				2,511	69	66	135	104	105	209

Shopping Center (820)

Weekday Total	T = 42.94 (X)	50% entering, 50% exiting
AM Peak Hour	T = 1.00 (X)	61% entering, 39% exiting
PM Peak Hour	T = 3.73 (X)	49% entering, 51% exiting

Gasoline/Service Station with Convenience Market (945)

Weekday Total	T = 162.78 (X)	50% entering, 50% exiting
AM Peak Hour	T = 10.16 (X)	50% entering, 50% exiting
PM Peak Hour	T = 13.38 (X)	50% entering, 50% exiting

Source: ITE Trip Generation Manual 8th Edition

The proposed development is forecasted to generate 135 trips during the AM peak hour and 209 trips during the PM peak hour. *Figure 6: Site Generated Traffic and Trip Distribution* presents the site generated traffic graphically.

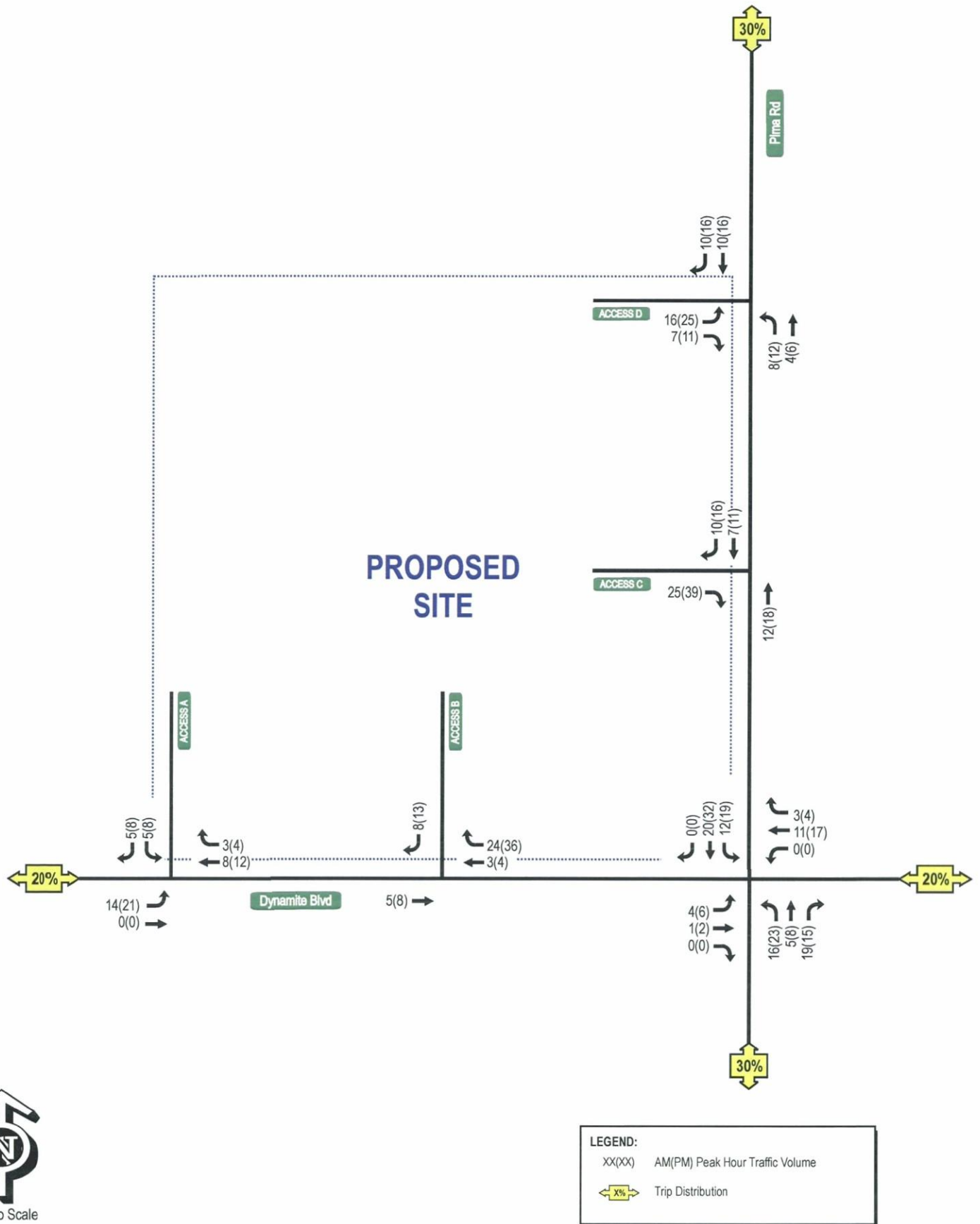


Figure 6: Site Generated Traffic and Trip Distribution

The trip generation estimate for the proposed development for a Sunday is presented in *Table 6: Trip Generation – Proposed Development (Sunday)*.

TABLE 6: TRIP GENERATION – PROPOSED DEVELOPMENT (SUNDAY)

Land Use	ITE Code	Units	Size	Daily	AM Peak			PM Peak		
					In	Out	Total	In	Out	Total
Shopping Center (Sunday)	820	1000s S.F.	13	315	20	21	41	-	-	-
Gasoline/Service Station with Convenience Market (Sunday – N/A*)	945	Fueling Pos.	12	1,953	61	61	122	-	-	-
Totals (Sunday)				2,268	81	82	163	-	-	-

Shopping Center (820)

Sunday Total T = 25.24 (X) 50% entering, 50% exiting

Peak Hour of Shopping Center T = 3.12 (X) 49% entering, 51% exiting

Gasoline/Service Station with Convenience Market (945)

Sunday Total* T = 162.78 (X) 50% entering, 50% exiting

AM Peak Hour* T = 10.16 (X) 50% entering, 50% exiting

Source: ITE Trip Generation Manual 8th Edition

*Assumes gasoline/service station with convenience market generates similar traffic volumes on a Sunday as a Weekday (Weekday equations used, equations for Sunday for this land use not given in ITE's Trip Generation) and that the shopping center's peak hour and gasoline/service station with convenience market's peak hour coincide.

A.3. TRIP GENERATION COMPARISON

Estimated trip generation totals for potential land uses on the existing parcel were compared to the estimated trip generation totals for the proposed development. These comparisons, as depicted in *Table 7: Trip Generation Comparisons* shows the difference in projected traffic volumes between the proposed development and land uses that could potentially be developed on the subject site.

TABLE 7: TRIP GENERATION COMPARISONS

TOTALS	Daily	AM Peak			PM Peak		
		In	Out	Total	In	Out	Total
Existing Zoning (R1-190) as Single-Family Residential (Weekday)	19	0	2	2	1	1	2
Proposed Development (Weekday)	2,511	69	66	135	104	105	209
Difference	+2,492	+69	+64	+133	+103	+104	+207
Existing Zoning (R1-190) as Church (Weekday)	793	30	19	49	23	25	48
Proposed Development (Weekday)	2,511	69	66	135	104	105	209
Difference	+1,718	+39	+47	+86	+81	+80	+161
Existing Zoning (R1-190) as Church (Sunday)	3,190	512	512	1,024	-	-	-
Proposed Development (Sunday*)	2,268	81	82	163	-	-	-
Difference	-922	-431	-430	-861	-	-	-

*Assumes Gasoline/Service Station with Convenience Market generates similar traffic volumes on a Sunday as a Weekday (Equations for Sunday for this land use not given in ITE's *Trip Generation*). Assumes Sunday peak hour of church corresponds to Sunday peak hour of proposed development.

A.4. PASS-BY TRIPS

An important phenomenon that must be addressed for developments of this type is pass-by trips. As defined by ITE's *Trip Generation*, pass-by trips are made as an immediate stop on the way from an origin to a primary trip destination, without a route diversion. For analysis, the total amount of trips determined to be pass-by trips are subtracted from the existing through volumes on the adjacent roadways passing a given site access point, and are included in the site driveway movements. It is forecasted, based on the rural location of the proposed development along minor arterials, only the fueling station will attract pass-by trips, as the shopping center portion of the development is likely to attract unique trips. As reported in ITE's *Trip Generation Handbook, 1998*, the pass-by trip percentage for a land use similar to the fueling station of the proposed development for the AM peak period ranges between 46% and 78% percent, or an average of 62%. For the PM peak period, the pass-by trip percentage ranges between 46% and 72% percent, or an average of 56%. These are reasonable percentages based on the location of the proposed development. *Table 8: Pass-By Trips* presents the total amount of pass-by trips of the proposed development, which are subtracted from the existing through volumes on the adjacent roadways at the site accesses.

TABLE 8: PASS-BY TRIPS

Land Use	ITE Code	Units	Size	Daily	AM Peak			PM Peak		
					In	Out	Total	In	Out	Total
Gasoline/Service Station with Convenience Market	945	Fueling Pos.	12	1,953	61	61	122	80	80	160
Pass-By Trips (62% AM, 56% PM)				N/A	(38)	(38)	(76)	(45)	(45)	(90)

B. TRIP DISTRIBUTION

The trip distribution procedure determines the general pattern of travel for vehicles entering and leaving the development in the study area. The assumed trip distribution percentages for the proposed development are shown in *Table 9: Trip Distribution Percentages*. These percentages are based on the land uses surrounding the site, and the associated street patterns outside the development. Given the relatively unique nature of the proposed development, it may be likely vehicles will originate from longer distances than a typical development, so the percentages are based on a 10-mile radius from the center of the site. The areas surrounding the development within the search radius are largely residential areas, from which the largest percentage of unique trips to the development will originate. These residential areas are generally evenly distributed to the north, south, east, and west, with a slightly higher proportion of residential areas to the north and to the south on Pima Road.

TABLE 9: TRIP DISTRIBUTION PERCENTAGES

Direction	Trip Distribution Percentage
Pima Road north of Dynamite Boulevard	30%
Pima Road south of Dynamite Boulevard	30%
Dynamite Boulevard west of Pima Road	20%
Dynamite Boulevard east of Pima Road	20%

C. PROJECTED NON-SITE GENERATED TRAFFIC

Non-site or background traffic volumes representing the amount of traffic estimated to be on the area roadway network without the proposed development within the study area were projected for the horizon year being analyzed, year 2015. The yearly growth trends coupled with any known proposed development in the study area are used to forecast the background traffic.

As a whole, the City of Scottsdale population growth rates, according to estimates from the United States Census, show a downward trend in the increasing growth rate over the last five years. Therefore, the base for the horizon year was determined by increasing the existing year 2009 AM and PM peak hour traffic volumes by 2.0% per year.

At the request of the City of Scottsdale engineering staff, one development has been included in the background traffic volumes. Located approximately one-quarter mile north of the proposed development is the Scottsdale First Assembly School. Based on discussions with the church school's staff, at the time of this traffic study, the school is open and operational with a current enrollment of 110 students. At full enrollment, the school is anticipated to serve 250 students; therefore, currently the school is operating at 44% capacity. It has been assumed the school will be operating at full capacity in the horizon year of 2015; therefore, 56% of the forecasted site generated traffic associated with the operation of the Scottsdale First Assembly School is included in the background traffic for the horizon year 2015. The traffic from the portion of the school that is currently operational (44%) has been captured via the in-field collected existing traffic volumes.

The forecasted traffic volumes associated with the Scottsdale First Assembly School for the AM and PM peak hours were taken from the approved TIMA entitled *Scottsdale First Assembly School*, prepared by United Civil Group, July 2008. *Figure 7: Scottsdale First Assembly School Site Generated Traffic* depicts the forecasted AM and PM peak traffic volumes from the school included in the overall forecasted year 2015 background traffic. The overall forecasted year 2015 background traffic volumes are illustrated on *Figure 8: Background Traffic and Levels of Service – Year 2015*.

D. TOTAL TRAFFIC

Total traffic projections for the horizon year of 2015 were determined by adding the proposed development's site generated traffic in *Figure 6* to the estimated overall year 2015 background traffic in *Figure 8*. *Figure 9: Total Traffic and Levels of Service – Year 2015* presents the total traffic volumes anticipated during the AM and PM peak hours on the roadway system during the horizon year 2015.

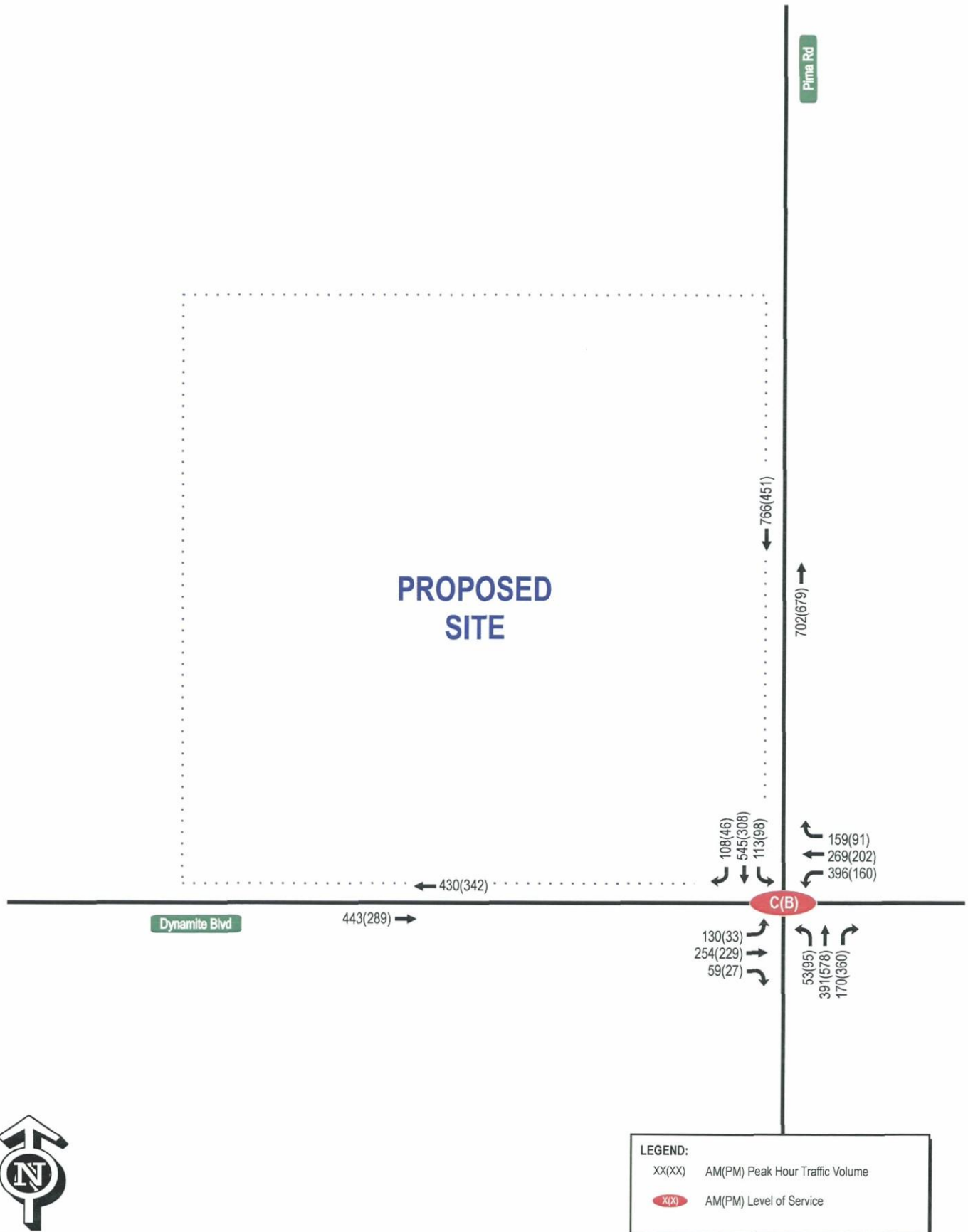
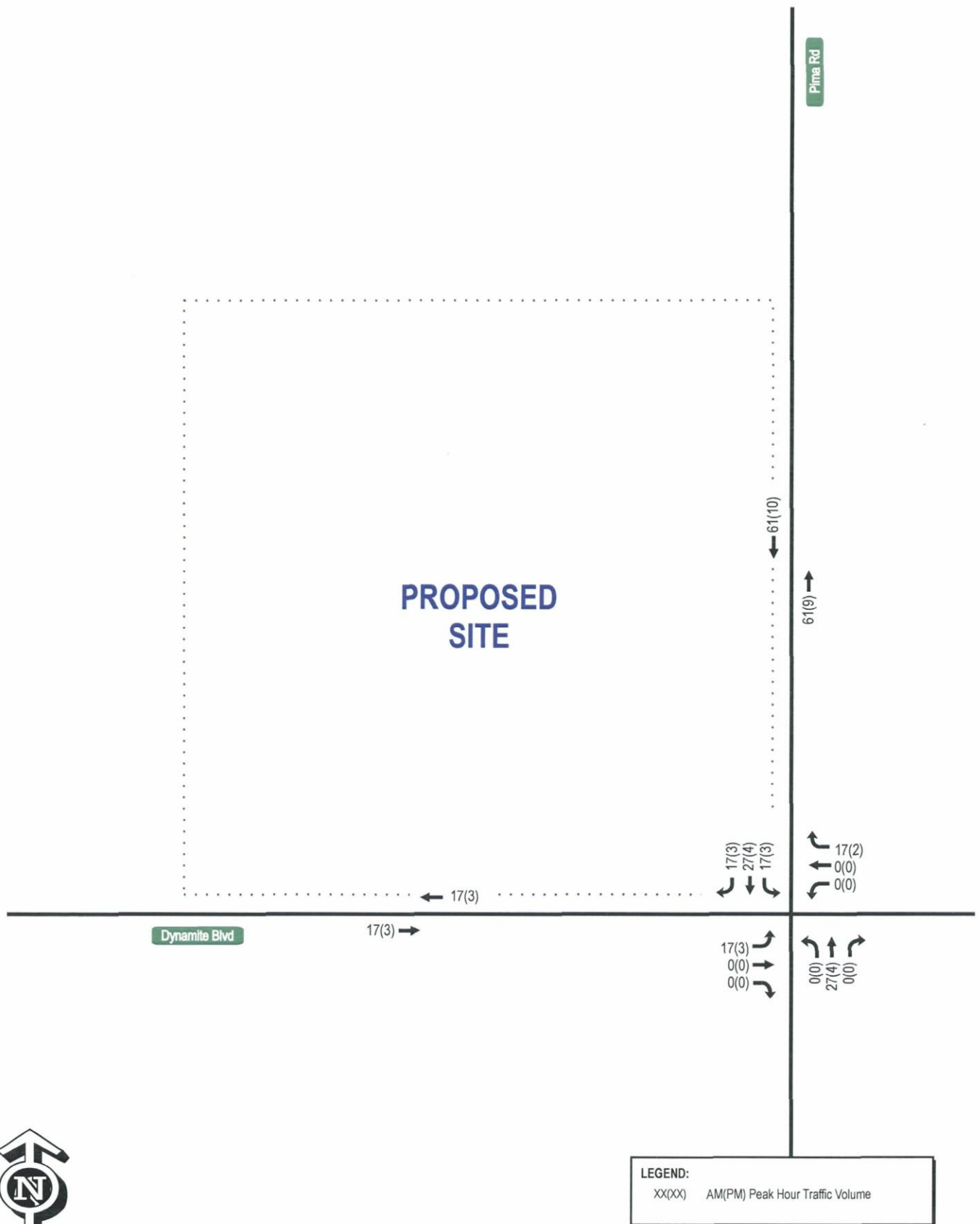


Figure 8: Background Traffic and Levels of Service - Year 2015



Not to Scale

Figure 7: Scottsdale First Assembly School Site Generated Traffic

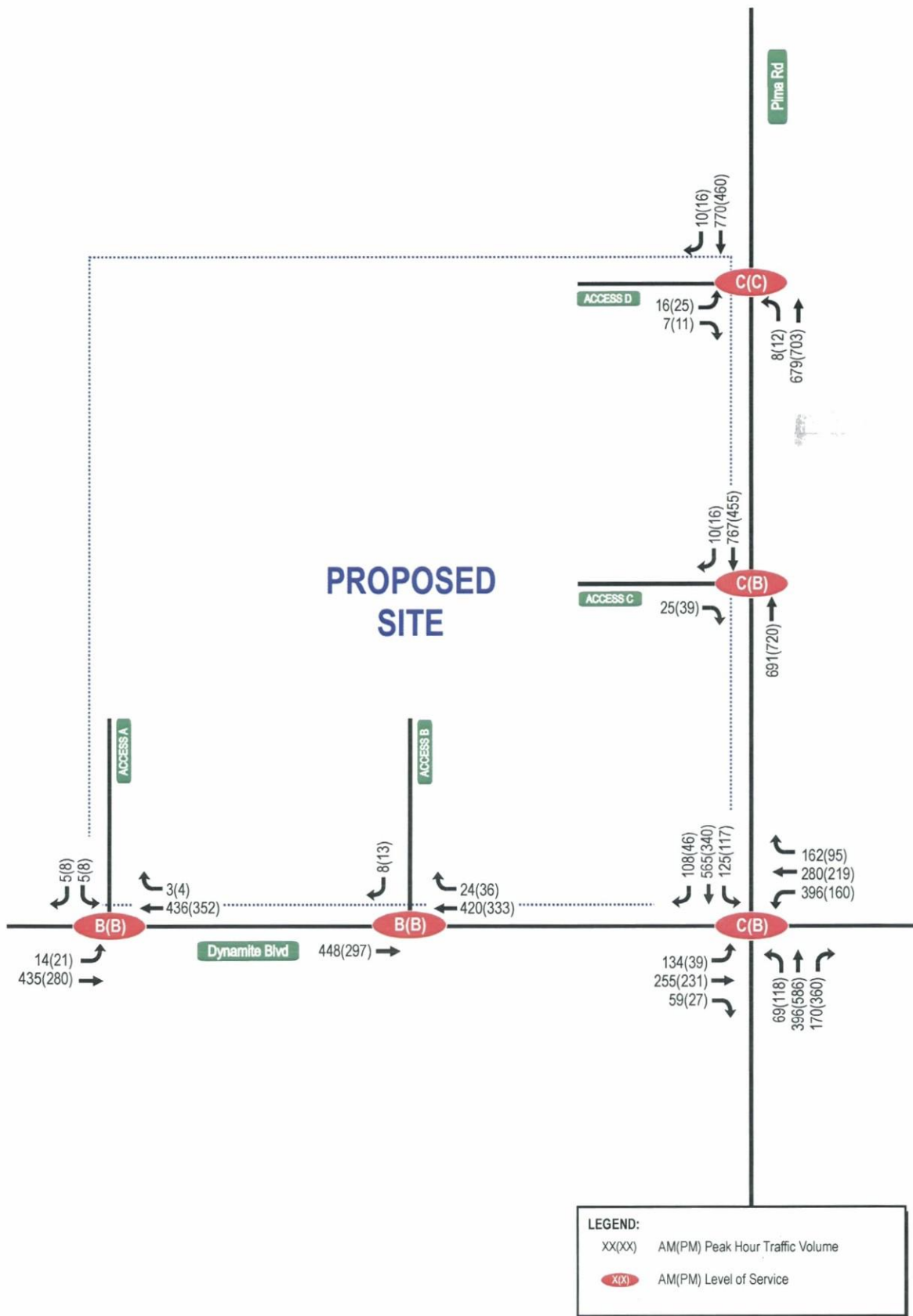


Figure 9: Total Traffic and Levels of Service - Year 2015

VII. TRAFFIC AND IMPROVEMENT ANALYSIS

The purpose of traffic analysis is to show the relations between traffic operations and roadway geometrics; identify needs; and identify alternatives for further consideration.

A. DECELERATION LANE ANALYSES

According to Section 5-3 of the City of Scottsdale's *Design Standards and Policies Manual (DS&PM)*, right-turn and left-turn deceleration lanes are required in conjunction with driveways located on parkways, expressways, and major arterials. Deceleration lanes for driveways may be required on minor arterials and collector streets, and may require additional right of way. The standard storage length for a deceleration lane is 150 feet, with a 100-foot minimum length. If these dimensions are not possible based on existing conditions, modifications must be approved by the Scottsdale Transportation Department. To determine the need for a deceleration lane on streets classified as minor arterial or collector, the following criteria are used:

- At least 5,000 vehicles per day are expected to be using the street.
- The 85th percentile traffic speed on the street is at least 35 mph; or 45 mph for a two lane (one lane in each direction) roadway.
- At least 30 vehicles will be making turns into the driveway during a one-hour period.

Table 10: Warrants for Right-Turn Deceleration Lanes presents the deceleration lane criteria as according to the DS&PM and the associated values for the proposed development's site accesses.

TABLE 10: WARRANTS FOR RIGHT-TURN DECELERATION LANES

Location	ADT Threshold Volume: 5000 vehicles/day	Speed Threshold Speed: 45 mph	Turning Vehicle Threshold Volume: 30 vehicles/hour	Warrant Satisfied?
WB Dynamite Blvd at Access A	3,500	50 mph	4	Yes
WB Dynamite Blvd Access B	3,500	50 mph	36	Yes
SB Pima Rd at Access C	5,700	50 mph	16	Yes
SB Pima Rd at Access D	5,700	50 mph	16	Yes

Based on the above criteria, right-turn deceleration lanes are required at all study area accesses, which includes; westbound Dynamite Blvd at Access A, westbound Dynamite Blvd at Access B, southbound Pima Road at Access C, and southbound Pima Road at Access D.

Based on the relatively low forecasted right-turning volume, and the fact that right-turning vehicles need not stop as they turn into the development, storage lengths for the right-turn deceleration lanes shall be the minimum length according to the DS&PM, 100 feet. For the

posted speed limit of 50 mph, the taper length shall be 90 feet, which is in accordance with section 430 of the ADOT *Traffic Engineering Policies, Guidelines, and Procedures Manual*, January 2000.

Table 11: Warrants for Left-Turn Deceleration Lanes presents the deceleration lane criteria as according to the DS&PM and the associated values for the proposed development's site accesses.

TABLE 11: WARRANTS FOR LEFT-TURN DECELERATION LANES

Location	ADT Threshold Volume: 5000 vehicles/day	Speed Threshold Speed: 45 mph	Turning Vehicle Threshold Volume: 30 vehicles/hour	Warrant Satisfied?
EB Dynamite Blvd at Access A	3,500	50 mph	21	Yes
EB Dynamite Blvd at Access B	N/A	N/A	N/A	N/A
NB Pima Rd at Access C	N/A	N/A	N/A	N/A
NB Pima Rd at Access D	5,700	50 mph	12	Yes

Based on the above criteria, left-turn deceleration lanes are required at eastbound Dynamite Boulevard at Access A and at northbound Pima Road at Access D. Access B and Access C are not applicable to the left-turn deceleration warrants as they shall be restricted to right-in, right-out access only, mitigated by a raised median island.

Two-way left-turn lanes (TWLTL) are recommended for left-in access into the site, in addition to being used as refuge for left-out turning vehicles. The length of the TWLTL at Access A and Access D should be equivalent to the storage and taper length of a dedicated left-turn deceleration lane. For Access A and Access D, the TWLTL shall be 190 feet.

Figure 10: Recommendations presents the recommended off-site improvements for the proposed development.

B. SIGHT TRIANGLES

It is recommended that sight triangles be provided at site access points to give drivers exiting the site a clear view of oncoming traffic on Pima Road and Dynamite Boulevard. The landscape and hardscape within the site triangles must not obstruct the driver's view of the adjacent travel lanes. After a vehicle has stopped at an intersection, the driver must have sufficient sight distance to make a safe departure through the intersection area. Sight triangles and their appropriate equations are presented in the City of Scottsdale Transportation Design Standards and Policies Manual Figure 5.3-26 and Appendix 5-3C.

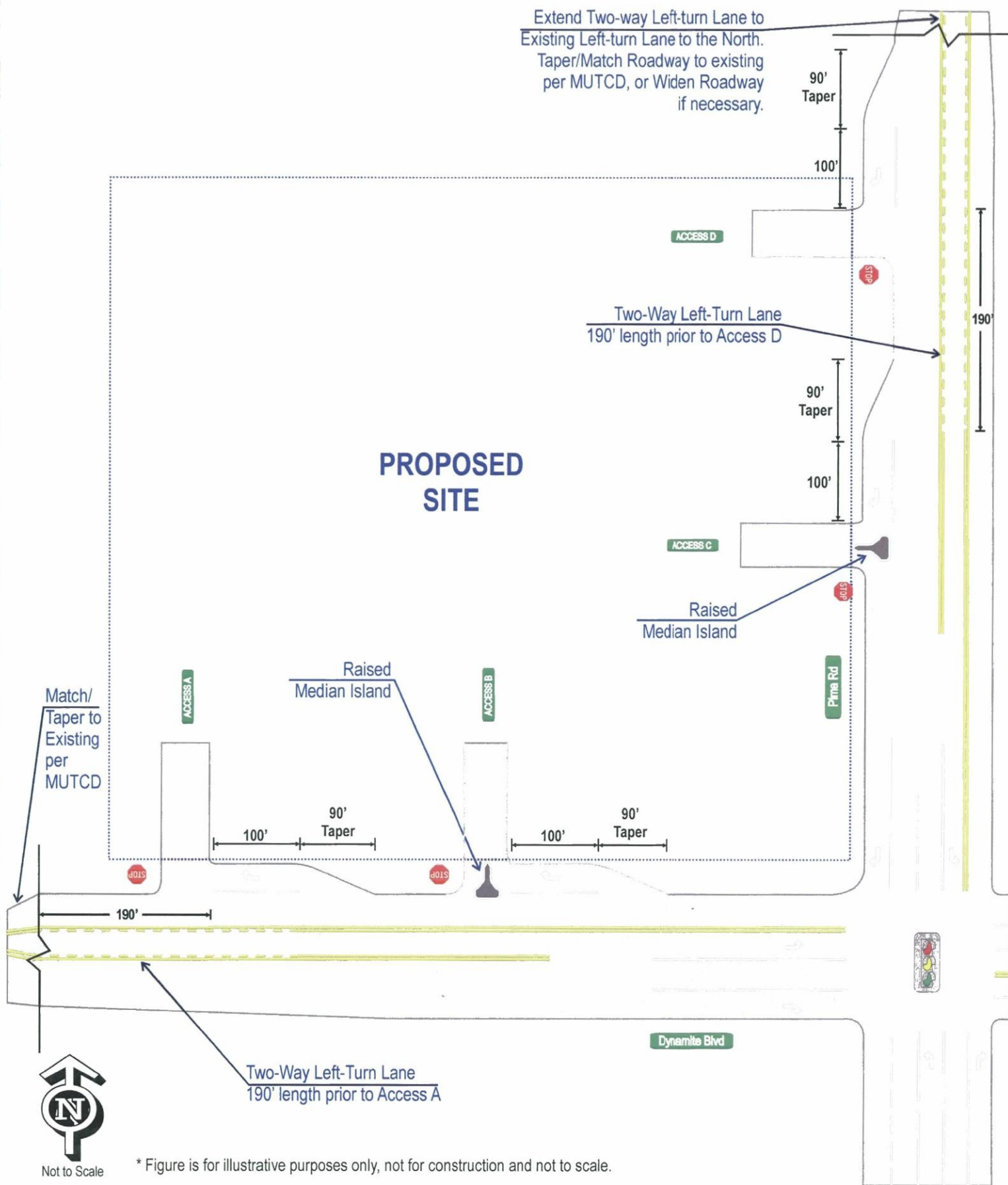


Figure 10: Recommendations

C. SITE ACCESSIBILITY AND ON-SITE CIRCULATION IMPROVEMENTS

C.1 SITE ACCESSIBILITY

The site accessibility for the proposed development was reviewed based on the provided illustrative/conceptual site plan and information from City of Scottsdale engineering staff. In addition, site accessibility was reviewed considering Pima Road and Dynamite Boulevard have *minor arterial* functional classifications, which is according to the City of Scottsdale's roadway functional classification map. The following recommendations have been provided based on this review.

- According to section 5-3.201 of the DS&PM, driveway spacing for the proposed development should be 330 feet on a minor arterial. Driveway spacing of 250 feet (for major collectors) may be considered based on the low collected ADTs on Pima Road and Dynamite Boulevard. Collected ADTs were less than 15,000 vpd on Pima Road and Dynamite Boulevard. According to the DS&PM, major collectors typically have an ADT of 15,000 – 30,000 vpd.
- Full-access driveways, Access A and Access D, should be driveway type CH-2 or CH-3. Right-in, right-out driveways, Access B and Access C, should be driveway type CH-1, and mitigated by a raised median island.
- Half-street right-of-way of 75' should be dedicated along the Pima Road and Dynamite Boulevard property frontages for potential future expansion of the roadways to major arterials, aesthetics, and consistency with the area's master plan.
- Driveway throat or stacking lengths appear adequate at all site accesses.

C.2 ON-SITE CIRCULATION

The on-site circulation for the proposed development was reviewed based on the provided illustrative/conceptual site plan and information from City of Scottsdale engineering staff. The following recommendations have been provided based on this review.

- Refuse enclosures should be located on site to avoid backtracking. Trucks should not have to back up on-site more than 35 feet. In addition, refuse enclosures should not be located on a dead-end aisle.
- Loading/delivery and service areas should be located away from the perimeter of the site and away from site driveways. In addition, the loading areas shouldn't hinder the parking or circulation of other vehicles on-site.
- Proper pedestrian connectivity should be provided between buildings on site and the surrounding sidewalks or trail system.
- Bicycle parking should be provided near the main entrances of the buildings on site.

D. INTERSECTION LEVEL OF SERVICE ANALYSES

Because a roadway system's ability to accommodate traffic demand is typically controlled and limited by the capacity of the intersections, intersection level of service analyses were performed for the horizon year at the major intersection and site driveways throughout the study area. TRAFFIX version 7.9 was utilized to analyze the un-signalized and signalized intersections using the methodologies as presented in the Highway Capacity Manual, HCM 2000.

D.1 BACKGROUND TRAFFIC – YEAR 2015

Capacity analyses at the study area intersection of Pima Road and Dynamite Boulevard were performed using TRAFFIX software for the year 2015 background traffic, as presented in Figure 8. This analysis assumes that the subject site remains in its current condition without the implementation of the proposed development. Table 12: Levels of Service – 2015 Background Traffic presents the 2015 background traffic levels of service at the study area intersections within the local area roadway network using the geometrics as shown on Figure 4.

TABLE 12: LEVELS OF SERVICE – 2015 BACKGROUND TRAFFIC

Intersection Location	EB	WB	NB	SB	Intersection
Pima Road/Dynamite Boulevard - signalized					
AM Peak Hour	D	C	C	C	C
PM Peak Hour	C	C	B	B	B

As can be seen in the above table, the intersection of Pima Road/Dynamite Boulevard operates at acceptable levels of service, LOS C and LOS B, during the AM and PM peak hours, respectively, for the forecasted year 2015 background traffic. Summaries of the TRAFFIX output calculations are included in Appendix B.

D.2 TOTAL TRAFFIC – YEAR 2015

Capacity analyses at the study area intersection and site access intersections were performed using TRAFFIX software for the year 2015 total traffic, as presented on Figure 9. The total traffic incorporates growth-related traffic increases, traffic from the adjacent Scottsdale First Assembly School (assuming it is operating a full capacity), all existing and recommended lane geometrics, and the site generated traffic. Table 13: Levels of Service – 2015 Total Traffic presents the AM and PM levels of service for the year 2015 total traffic conditions.

TABLE 13: LEVELS OF SERVICE – 2015 TOTAL TRAFFIC

Intersection Location	EB	WB	NB	SB	Intersection
Pima Road/Dynamite Boulevard – signalized					
AM Peak Hour	D	C	C	C	C
PM Peak Hour	C	C	B	B	B
Dynamite Boulevard/Access A – unsignalized					
AM Peak Hour	A	A	-	B	B
PM Peak Hour	A	A	-	B	B
Dynamite Boulevard/Access B – unsignalized					
AM Peak Hour	A	A	-	B	B
PM Peak Hour	A	A	-	B	B
Pima Road/Access C – unsignalized					
AM Peak Hour	C	-	A	A	C
PM Peak Hour	B	-	A	A	B
Pima Road/Access C – unsignalized					
AM Peak Hour	C	-	A	A	C
PM Peak Hour	C	-	A	A	C

As can be seen in the above table, all study area intersections and site access intersections operate at an acceptable level of service, LOS C or better, during the AM and PM peak hours for the forecasted year 2015 total traffic. Summaries of the TRAFFIX output calculations are included in *Appendix B*.

VIII. CONCLUSIONS AND RECOMMENDATIONS

The City of Scottsdale has received a request for a text amendment to the Zoning Ordinance along with an application for a conditional use permit, which will allow for rural neighborhood support services on an approximate ten acre property located at the northwest corner of Pima Road and Dynamite Boulevard. The rural neighborhood support services of this proposed development include a six-pump (12-fueling position) automotive service/gasoline station with alternative fueling and energy sources and an attached 5,500 square foot general store, along with 13,000 square feet of retail and restaurant land use.

Average daily traffic counts were collected on Thursday, September 10, 2009 on Pima Road and Dynamite Boulevard adjacent to the subject site. Pima Road currently carries approximately 11,400 vehicles per day on an average weekday. Dynamite Boulevard currently carries approximately 6,700 vehicles per day on an average weekday.

Turning movement counts were collected at the intersection of Pima Road/Dynamite Boulevard on Wednesday, September 9th, 2009. The turning movement counts were collected in 15-minute intervals during the AM peak period (7:00 a.m. to 9:00 a.m.) and PM peak period (4:00 p.m. to 6:00 p.m.). The AM peak hour was found to be from 7:45 a.m. to 8:45 a.m. with 2,242 vehicles entering the intersection. The PM peak hour was found to be between 4:45 p.m. and 5:45 p.m. with 1,959 vehicles entering the intersection.

The existing levels of service at the study area intersection of Pima Road and Dynamite Boulevard are LOS C and LOS B, during the AM and PM peak hours, respectively.

The proposed development is forecasted to generate a total of 135 trips in the AM peak hour and 209 trips in the PM peak hour.

All study area intersections, including the site access intersections, will operate at acceptable levels of service, LOS C or better, during the AM and PM peak hours based on total traffic conditions in the horizon year of 2015. The overall LOS designations for year 2015 total traffic conditions at the Pima Road/Dynamite Boulevard intersection remain the same as for the existing conditions; LOS C and LOS B in the AM and PM peak hours, respectively.

Based on City of Scottsdale criteria, right-turn deceleration lanes are warranted for implementation at all site access intersections, which includes; westbound Dynamite Boulevard at Access A, westbound Dynamite Boulevard at Access B, southbound Pima Road at Access C, and southbound Pima Road at Access D.

Based on City of Scottsdale criteria, left-turn deceleration lanes are warranted for implementation at eastbound Dynamite Boulevard at Access A and northbound Pima Road at Access D. Two-way left-turn lanes are recommended for the left-turning access into the site.

Access B and Access C shall be restricted right-in, right-out only accesses, mitigated by a raised median island.

Storage lengths for the right-turn deceleration lanes shall be a minimum of 100 feet, with a minimum taper length of 90 feet.

The length of the two-way left-turn lanes at Access A and Access D should be equivalent to the storage and taper length of a dedicated left-turn deceleration lane. For Access A and Access D, the two-way left-turn lane shall be 190 feet. The two-way left-turn deceleration lanes should tie into the respective left-turn lanes downstream.

Based on an analysis of the illustrative/conceptual site plan of the proposed development, several recommended improvements should be considered in relation to the site accessibility and on-site circulation of the proposed development. Section VII.C presents these recommendations.

It is recommended that sight triangles be provided at site access points to give drivers exiting the site a clear view of oncoming traffic on Pima Road and Dynamite Boulevard. Sight triangles and their appropriate equations are presented in the City of Scottsdale Transportation Design Standards and Policies Manual Figure 5.3-26 and Appendix 5-3C.

IX. LIMITATIONS

Our professional services have been performed using the degree of skill ordinarily exercised, under similar circumstances, by reputable transportation engineering firms practicing in this locality. No other warranty, expressed or implied, is made.

The contents of this report are intended for the sole use of the addressee and his/her designees. In completing this report, data was obtained from a variety of sources (i.e. City, County, State and Federal sources); United Civil Group has assumed these sources to be reliable and accurate. Should deviations from this report be noted, this firm shall be contacted for review of the area of concern.

Every reasonable attempt was made to acquire recent traffic impact studies, traffic projections and/or data that may be helpful in more accurately projecting traffic volumes. United Civil Group is not responsible for incorporating data made available after this document has been finalized.

This report is issued with the understanding that it is the responsibility of the owner to see that its provisions are carried out or brought to the attention of those concerned. In the event that any changes of the proposed project are planned, the conclusions and recommendations contained in this report shall be reviewed and the report shall be modified or supplemented as necessary.

X. SOURCES

A Policy on Geometric Design of Highways and Streets, American Association of State Highway and Transportation Officials, 2000.

Arizona Department of Transportation Traffic Engineering Policies, Guidelines and Procedures, January 2000.

Design Standards & Policy Manual, City of Scottsdale, 2008.

Highway Capacity Manual, HCM 2000, Transportation Research Board, 2000.

Manual on Uniform Traffic Control Devices, Federal Highway Administration, MUTCD 2003.

Traffic Engineering Handbook 5th Ed., Institute of Transportation Engineers, 1999.

Transportation Master Plan, City of Scottsdale, 2008.

Trip Generation, 8th Edition. Institute of Transportation Engineers, 2008.

APPENDIX A

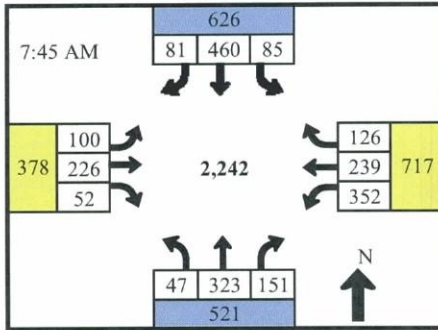
Traffic Counts

Turning Movement Count

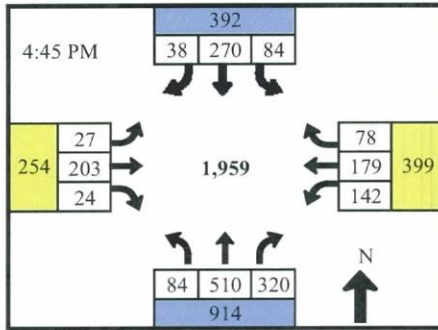
Project No: TR9084

9-Sep-09 (Wednesday)

Location: Pima Road and Dynamite Boulevard
 Intersection Configuration: signalized



Start Time	Pima Road Southbound				Dynamite Boulevard Westbound				Pima Road Northbound				Dynamite Boulevard Eastbound				Total	Peak Hour
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds		
7:00 AM	11	104	14	1	30	37	70	12	24	57	4	1	7	42	17	4	417	
7:15 AM	7	111	22	0	33	48	88	0	41	62	4	0	18	42	20	0	496	
7:30 AM	12	144	24	0	18	47	89	1	35	65	16	1	10	56	17	3	533	
7:45 AM	21	97	30	5	51	66	107	1	40	79	9	0	18	63	32	0	613	2,059
8:00 AM	25	108	15	0	16	40	72	0	39	80	16	0	2	29	31	0	473	2,115
8:15 AM	19	104	18	0	31	61	89	0	30	86	12	0	14	56	16	6	536	2,155
8:30 AM	16	151	22	0	28	72	84	0	42	78	10	0	18	78	21	0	620	2,242
8:45 AM	16	160	29	0	35	48	58	1	45	90	7	0	6	55	20	0	569	2,198
Peak Hour Total	81	460	85	5	126	239	352	1	151	323	47	0	52	226	100	6	2,242	



Start Time	Pima Road Southbound				Dynamite Boulevard Westbound				Pima Road Northbound				Dynamite Boulevard Eastbound				Total	Peak Hour
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds		
4:00 PM	11	48	17	0	18	34	41	0	54	96	13	0	9	29	5	0	375	
4:15 PM	7	56	32	0	12	52	44	0	64	106	16	0	5	36	6	0	436	
4:30 PM	15	52	17	0	20	36	43	0	64	106	17	0	5	36	3	0	414	
4:45 PM	15	70	26	0	16	57	27	0	79	147	19	0	7	41	8	0	512	1,737
5:00 PM	8	75	27	0	20	50	47	0	83	124	19	0	6	53	8	0	520	1,882
5:15 PM	8	77	14	0	23	41	37	0	88	132	26	0	7	48	8	0	509	1,955
5:30 PM	7	48	17	0	19	31	31	0	70	107	20	0	4	61	3	0	418	1,959
5:45 PM	5	49	18	1	21	33	36	1	113	103	19	0	2	56	7	0	462	1,909
Peak Hour Total	38	270	84	0	78	179	142	0	320	510	84	0	24	203	27	0	1,959	

United Civil Group
2803 N. 7th Avenue, #16
602-265-6155

Street: Dynamite Boulevard
Location: W. of Pima Road

Date: 9/10/2009
Thursday

24 Hour Volume						24 Hour Volume							
Begin	WB	EB	Combined	Begin	WB	EB	Combined	Begin	WB	EB	Combined		
00:00	1	5	3	10	4	15	12:00	50	221	41	171	91	392
00:15	1		1		2		12:15	68		46		114	
00:30	2		3		5		12:30	55		51		106	
00:45	1		3		4		12:45	48		33		81	
01:00	0	6	1	4	1	10	13:00	57	288	50	174	107	462
01:15	1		1		2		13:15	68		42		110	
01:30	1		1		2		13:30	92		37		129	
01:45	4		1		5		13:45	71		45		116	
02:00	0	1	2	8	2	9	14:00	69	300	41	184	110	484
02:15	0		1		1		14:15	73		38		111	
02:30	0		3		3		14:30	81		56		137	
02:45	1		2		3		14:45	77		49		126	
03:00	0	4	2	13	2	17	15:00	87	278	32	194	119	472
03:15	0		1		1		15:15	70		43		113	
03:30	2		2		4		15:30	54		67		121	
03:45	2		8		10		15:45	67		52		119	
04:00	2	17	2	48	4	65	16:00	65	246	43	196	108	442
04:15	4		7		11		16:15	54		54		108	
04:30	4		10		14		16:30	52		54		106	
04:45	7		29		36		16:45	75		45		120	
05:00	10	47	34	157	44	204	17:00	53	244	45	203	98	447
05:15	6		34		40		17:15	64		50		114	
05:30	14		53		67		17:30	73		43		116	
05:45	17		36		53		17:45	54		65		119	
06:00	27	157	34	218	61	375	18:00	50	171	43	168	93	339
06:15	40		61		101		18:15	44		49		93	
06:30	45		60		105		18:30	40		39		79	
06:45	45		63		108		18:45	37		37		74	
07:00	67	257	59	286	126	543	19:00	34	88	33	135	67	223
07:15	76		56		132		19:15	22		42		64	
07:30	59		81		140		19:30	16		22		38	
07:45	55		90		145		19:45	16		38		54	
08:00	82	302	59	279	141	581	20:00	16	66	26	92	42	158
08:15	82		68		150		20:15	22		16		38	
08:30	80		77		157		20:30	17		25		42	
08:45	58		75		133		20:45	11		25		36	
09:00	58	230	50	192	108	422	21:00	13	54	20	79	33	133
09:15	62		42		104		21:15	21		25		46	
09:30	61		51		112		21:30	8		21		29	
09:45	49		49		98		21:45	12		13		25	
10:00	54	199	41	191	95	390	22:00	10	33	14	38	24	71
10:15	47		43		90		22:15	10		12		22	
10:30	46		68		114		22:30	5		8		13	
10:45	52		39		91		22:45	8		4		12	
11:00	71	241	39	186	110	427	23:00	6	14	6	13	12	27
11:15	62		51		113		23:15	2		3		5	
11:30	55		49		104		23:30	5		2		7	
11:45	53		47		100		23:45	1		2		3	
24 Hour Volume						WB	EB	Combined					
						3469 (51.7%)	3239 (48.3%)	6708					

Count	00:00 - 12:00			12:00 - 00:00		
	WB	EB	Combined	WB	EB	Combined
	1466	1592	3058	2003	1647	3650
	47.9 %	52.1 %		54.9 %	45.1 %	
Peak Hour	08:00	07:30	07:45	14:15	15:30	14:30
Volume	302	298	593	318	216	495
Factor	0.92	0.83	0.94	0.91	0.81	0.90

United Civil Group
2803 N. 7th Avenue, #16
602-265-6155

Street: Pima Road
Location: N. of Dynamite Boulevard

Date: 9/10/2009
Thursday

24 Hour Volume														
Begin	SB		NB		Combined	Begin	SB		NB		Combined			
00:00	1	3	5	12	6	15	12:00	100	402	82	333	182	735	
00:15	0		4		4		12:15	92		88		180		
00:30	0		0		0		12:30	115		78		193		
00:45	2		3		5		12:45	95		85		180		
01:00	1	3	4	8	5	11	13:00	91	377	79	345	170	722	
01:15	1		1		2		13:15	89		80		169		
01:30	0		2		2		13:30	88		94		182		
01:45	1		1		2		13:45	109		92		201		
02:00	2	5	1	11	3	16	14:00	103	481	85	359	188	840	
02:15	2		3		5		14:15	115		82		197		
02:30	1		1		2		14:30	133		96		229		
02:45	0		6		6		14:45	130		96		226		
03:00	2	7	1	5	3	12	15:00	102	425	122	423	224	848	
03:15	1		1		2		15:15	113		101		214		
03:30	2		1		3		15:30	109		105		214		
03:45	2		2		4		15:45	101		95		196		
04:00	4	38	3	29	7	67	16:00	92	353	93	482	185	835	
04:15	6		7		13		16:15	95		136		231		
04:30	9		3		12		16:30	87		117		204		
04:45	19		16		35		16:45	79		136		215		
05:00	23	139	23	134	46	273	17:00	87	322	105	496	192	818	
05:15	26		34		60		17:15	91		139		230		
05:30	45		40		85		17:30	77		127		204		
05:45	45		37		82		17:45	67		125		192		
06:00	73	345	45	250	118	595	18:00	71	236	108	383	179	619	
06:15	81		58		139		18:15	59		110		169		
06:30	91		74		165		18:30	58		87		145		
06:45	100		73		173		18:45	48		78		126		
07:00	109	495	84	399	193	894	19:00	58	131	59	197	117	328	
07:15	120		95		215		19:15	28		43		71		
07:30	150		97		247		19:30	23		50		73		
07:45	116		123		239		19:45	22		45		67		
08:00	120	483	98	383	218	866	20:00	16	73	32	201	48	274	
08:15	115		103		218		20:15	22		57		79		
08:30	138		90		228		20:30	15		61		76		
08:45	110		92		202		20:45	20		51		71		
09:00	120	425	86	316	206	741	21:00	20	76	40	133	60	209	
09:15	113		80		193		21:15	21		36		57		
09:30	95		90		185		21:30	20		23		43		
09:45	97		60		157		21:45	15		34		49		
10:00	111	373	75	321	186	694	22:00	8	42	20	66	28	108	
10:15	86		84		170		22:15	9		26		35		
10:30	88		81		169		22:30	8		13		21		
10:45	88		81		169		22:45	17		7		24		
11:00	124	434	74	333	198	767	23:00	2	17	6	33	8	50	
11:15	115		73		188		23:15	4		10		14		
11:30	99		102		201		23:30	6		9		15		
11:45	96		84		180		23:45	5		8		13		
24 Hour Volume					SB	NB	Combined							
					5685 (50.1%)	5652 (49.9%)	11337							
00:00 - 12:00												12:00 - 00:00		
Count	SB		NB		Combined	SB		NB		Combined				
	2750		2201		4951	2935		3451		6386				
	55.5 %		44.5 %			46.0 %		54.0 %						
Peak Hour	07:15		07:30		07:30	14:00		16:45		14:30				
Volume	506		421		922	481		507		893				
Factor	0.84		0.86		0.93	0.90		0.91		0.97				

APPENDIX B

Capacity Analyses

Scenario Report

Scenario: Existing AM
Command: Default Command
Volume: Existing AM
Geometry: Existing
Impact Fee: Default Impact Fee
Trip Generation: None
Trip Distribution: None
Paths: Default Path
Routes: Default Route
Configuration: Default Configuration

Turning Movement Report
None

Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
#1 Pima Road and Dynamite Boulevard													
Base	47	323	151	85	460	81	100	226	52	352	239	126	2242
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	47	323	151	85	460	81	100	226	52	352	239	126	2242
#2 Access A & Dynamite Boulevard													
Base	0	0	0	0	0	0	0	378	0	0	367	0	745
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	378	0	0	367	0	745
#3 Access B & Dynamite Boulevard													
Base	0	0	0	0	0	0	0	378	0	0	367	0	745
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	378	0	0	367	0	745
#4 Access C & Pima Road													
Base	0	549	0	0	626	0	0	0	0	0	0	0	1175
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	549	0	0	626	0	0	0	0	0	0	0	1175
#5 Access D & Pima Road													
Base	0	549	0	0	626	0	0	0	0	0	0	0	1175
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	549	0	0	626	0	0	0	0	0	0	0	1175

Level of Service Computation Report
 2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 Pima Road and Dynamite Boulevard

Cycle (sec): 100 Critical Vol./Cap. (X): 0.517
 Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 24.5
 Optimal Cycle: 25 Level of Service: C

Street Name: Pima Road Dynamite Boulevard
 Approach: North Bound South Bound East Bound West Bound
 Movement: L - T - R L - T - R L - T - R L - T - R

Control:	Permitted Include			Permitted Include			Permit+Prot Include			Permit+Prot Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1	0	1	0	1	0	1	0	1	0

Volume Module:

Base Vol:	47	323	151	85	460	81	100	226	52	352	239	126
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Base:	47	323	151	85	460	81	100	226	52	352	239	126
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Passerby Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	47	323	151	85	460	81	100	226	52	352	239	126
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	52	359	168	94	511	90	111	251	58	391	266	140
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	52	359	168	94	511	90	111	251	58	391	266	140
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	52	359	168	94	511	90	111	251	58	391	266	140

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.34	1.00	0.85	0.28	0.95	0.85	0.47	1.00	0.85	0.69	1.00	0.85
Lanes:	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	640	1900	1615	526	3610	1615	896	1900	1615	1310	1900	1615

Capacity Analysis Module:

Vol/Sat:	0.08	0.19	0.10	0.18	0.14	0.06	0.12	0.13	0.04	0.30	0.14	0.09
Crit Moves:	****											
Green/Cycle:	0.34	0.34	0.34	0.34	0.34	0.34	0.44	0.24	0.24	0.64	0.43	0.43
Volume/Cap:	0.24	0.56	0.31	0.53	0.42	0.17	0.21	0.56	0.15	0.45	0.32	0.20
Uniform Del:	23.9	27.1	24.5	26.8	25.6	23.3	23.1	33.6	30.3	16.5	18.7	17.6
IncrementDel:	0.6	1.1	0.3	3.1	0.2	0.1	0.2	1.6	0.2	0.4	0.2	0.1
InitQueueDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	24.5	28.2	24.8	29.9	25.8	23.4	23.3	35.2	30.5	16.9	19.0	17.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	24.5	28.2	24.8	29.9	25.8	23.4	23.3	35.2	30.5	16.9	19.0	17.8
LOS by Move:	C	C	C	C	C	C	C	D	C	B	B	B
HCM2kAVGQ:	1	9	4	3	6	2	2	7	1	6	5	3

Note: Queue reported is the number of cars per lane.

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 Access A & Dynamite Boulevard

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

Table with columns for Street Name, Approach, Movement, Control, Rights, and Lanes. Rows include Access A (North/South Bound) and Dynamite Boulevard (East/West Bound).

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and FinalVolume. Rows include Access A and Dynamite Boulevard.

Critical Gap Module table with columns for Critical Gap and FollowUpTime. Rows include Access A and Dynamite Boulevard.

Capacity Module table with columns for Conflict Vol, Potent Cap., Move Cap., and Volume/Cap. Rows include Access A and Dynamite Boulevard.

Level Of Service Module table with columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS. Rows include Access A and Dynamite Boulevard.

Note: Queue reported is the number of cars per lane.

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #3 Access B & Dynamite Boulevard

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

Table with columns for Street Name, Approach, Movement, Control, Rights, and Lanes. Rows include Access B (North/South Bound) and Dynamite Boulevard (East/West Bound).

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and FinalVolume. Rows include Access B and Dynamite Boulevard.

Critical Gap Module table with columns for Critical Gap and FollowUpTime. Rows include Access B and Dynamite Boulevard.

Capacity Module table with columns for Conflict Vol, Potent Cap., Move Cap., and Volume/Cap. Rows include Access B and Dynamite Boulevard.

Level Of Service Module table with columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS. Rows include Access B and Dynamite Boulevard.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4 Access C & Pima Road

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A [0.0]

Table with columns: Street Name, Approach, Movement, Control, Rights, Lanes. Rows for Pima Road and Access C.

Volume Module: Base Vol, Growth Adj, Initial Base, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume.

Critical Gap Module: FollowUpTim

Capacity Module: Conflict Vol, Potent Cap, Move Cap, Volume/Cap

Level Of Service Module: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap, Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Access D & Pima Road

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A [0.0]

Table with columns: Street Name, Approach, Movement, Control, Rights, Lanes. Rows for Pima Road and Access D.

Volume Module: Base Vol, Growth Adj, Initial Base, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume.

Critical Gap Module: FollowUpTim

Capacity Module: Conflict Vol, Potent Cap, Move Cap, Volume/Cap

Level Of Service Module: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap, Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS

Note: Queue reported is the number of cars per lane.

 Scenario Report
 Scenario: Existing PM
 Command: Default Command
 Volume: Existing PM
 Geometry: Existing
 Impact Fee: Default Impact Fee
 Trip Generation: None
 Trip Distribution: None
 Paths: Default Path
 Routes: Default Route
 Configuration: Default Configuration

 Turning Movement Report
 None

Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
#1 Pima Road and Dynamite Boulevard													
Base	84	510	320	84	270	38	27	203	24	142	179	78	1959
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	84	510	320	84	270	38	27	203	24	142	179	78	1959
#2 Access A & Dynamite Boulevard													
Base	0	0	0	0	0	0	0	254	0	0	301	0	555
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	254	0	0	301	0	555
#3 Access B & Dynamite Boulevard													
Base	0	0	0	0	0	0	0	254	0	0	301	0	555
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	254	0	0	301	0	555
#4 Access C & Pima Road													
Base	0	615	0	0	392	0	0	0	0	0	0	0	1007
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	615	0	0	392	0	0	0	0	0	0	0	1007
#5 Access D & Pima Road													
Base	0	615	0	0	392	0	0	0	0	0	0	0	1007
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	615	0	0	392	0	0	0	0	0	0	0	1007

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 Pima Road and Dynamite Boulevard

Cycle (sec): 100 Critical Vol./Cap.(X): 0.483
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 17.8
Optimal Cycle: 23 Level Of Service: B

Street Name:	Pima Road				Dynamite Boulevard										
	North Bound		South Bound		East Bound		West Bound								
Approach:	L	T	R	L	T	R	L	T	R	L	T	R			
Control:	Permitted		Permitted		Permit+Prot		Permit+Prot		Permit+Prot		Permit+Prot				
Rights:	Include		Include		Include		Include		Include		Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0			
Lanes:	1	0	1	0	1	1	0	1	0	1	1	0	1	0	1

Volume Module:	Pima Road			Dynamite Boulevard								
	North	South	East	North	South	West						
Base Vol:	84	510	320	84	270	38	27	203	24	142	179	78
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	84	510	320	84	270	38	27	203	24	142	179	78
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	84	510	320	84	270	38	27	203	24	142	179	78
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	93	567	356	93	300	42	30	226	27	158	199	87
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	93	567	356	93	300	42	30	226	27	158	199	87
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	93	567	356	93	300	42	30	226	27	158	199	87

Saturation Flow Module:	Pima Road			Dynamite Boulevard								
Sat/Lane:	North	South	East	North	South	West						
Adjustment:	0.55	1.00	0.85	0.28	0.95	0.85	0.43	1.00	0.85	0.52	1.00	0.85
Lanes:	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1036	1900	1615	536	3610	1615	826	1900	1615	993	1900	1615

Capacity Analysis Module:	Pima Road			Dynamite Boulevard								
Vol/Sat:	North	South	East	North	South	West						
Crit Moves:	0.09	0.30	0.22	0.17	0.08	0.03	0.04	0.12	0.02	0.16	0.10	0.05
Green/Cycle:	0.57	0.57	0.57	0.57	0.57	0.57	0.29	0.23	0.23	0.41	0.34	0.34
Volume/Cap:	0.16	0.53	0.39	0.31	0.15	0.05	0.10	0.53	0.07	0.33	0.31	0.16
Uniform Del:	10.3	13.3	12.0	11.3	10.2	9.6	30.9	34.0	30.5	27.7	24.4	23.1
IncrementDel:	0.1	0.5	0.3	0.6	0.0	0.0	0.1	1.2	0.1	0.4	0.3	0.1
InitQueueDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	10.4	13.8	12.3	11.9	10.2	9.6	31.0	35.2	30.5	28.1	24.7	23.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	10.4	13.8	12.3	11.9	10.2	9.6	31.0	35.2	30.5	28.1	24.7	23.3
LOS by Move:	B	B	B	B	B	A	C	D	C	C	C	C
HCM2kAvgQ:	1	11	6	2	2	1	1	7	1	4	5	2

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4 Access C & Pima Road

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A [0.0]

Table with columns: Street Name, Approach, Movement, Control, Rights, Lanes. Rows for North Bound, South Bound, East Bound, West Bound.

Volume Module:

Table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume.

Critical Gap Module:

Critical Gap: XXXXX XXXX XXXXX XXXXX XXXX XXXXX XXXXX XXXX XXXXX
FollowUpTim: XXXXX XXXX XXXXX XXXXX XXXX XXXXX XXXXX XXXX XXXXX

Capacity Module:

Conflict Vol: XXXX XXXX XXXXX XXXX XXXX XXXXX XXXX XXXX XXXXX
Potent Cap.: XXXX XXXX XXXXX XXXX XXXX XXXXX XXXX XXXX XXXXX
Move Cap.: XXXX XXXX XXXXX XXXX XXXX XXXXX XXXX XXXX XXXXX
Volume/Cap: XXXX XXXX XXXX XXXX XXXX XXXXX XXXX XXXX XXXXX

Level Of Service Module:

2Way95thQ: XXXX XXXX XXXXX XXXX XXXX XXXXX XXXX XXXX XXXXX
Control Del: XXXXX XXXX XXXXX XXXXX XXXX XXXXX XXXXX XXXX XXXXX
LOS by Move: * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: XXXX XXXX XXXXX XXXX XXXX XXXXX XXXX XXXX XXXXX
SharedQueue: XXXXX XXXX XXXXX XXXXX XXXX XXXXX XXXXX XXXX XXXXX
Shrd ConDel: XXXXX XXXX XXXXX XXXXX XXXX XXXXX XXXXX XXXX XXXXX
Shared LOS: * * * * *
ApproachDel: XXXXXX XXXXXX XXXXXX XXXXXX
ApproachLOS: * * * * *

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Access D & Pima Road

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A [0.0]

Table with columns: Street Name, Approach, Movement, Control, Rights, Lanes. Rows for North Bound, South Bound, East Bound, West Bound.

Volume Module:

Table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume.

Critical Gap Module:

Critical Gap: XXXXX XXXX XXXXX XXXXX XXXX XXXXX XXXXX XXXX XXXXX
FollowUpTim: XXXXX XXXX XXXXX XXXXX XXXX XXXXX XXXXX XXXX XXXXX

Capacity Module:

Conflict Vol: XXXX XXXX XXXXX XXXX XXXX XXXXX XXXX XXXX XXXXX
Potent Cap.: XXXX XXXX XXXXX XXXX XXXX XXXXX XXXX XXXX XXXXX
Move Cap.: XXXX XXXX XXXXX XXXX XXXX XXXXX XXXX XXXX XXXXX
Volume/Cap: XXXX XXXX XXXX XXXX XXXX XXXXX XXXX XXXX XXXXX

Level Of Service Module:

2Way95thQ: XXXX XXXX XXXXX XXXX XXXX XXXXX XXXX XXXX XXXXX
Control Del: XXXXX XXXX XXXXX XXXXX XXXX XXXXX XXXXX XXXX XXXXX
LOS by Move: * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: XXXX XXXX XXXXX XXXX XXXX XXXXX XXXX XXXX XXXXX
SharedQueue: XXXXX XXXX XXXXX XXXXX XXXX XXXXX XXXXX XXXX XXXXX
Shrd ConDel: XXXXX XXXX XXXXX XXXXX XXXX XXXXX XXXXX XXXX XXXXX
Shared LOS: * * * * *
ApproachDel: XXXXXX XXXXXX XXXXXX XXXXXX
ApproachLOS: * * * * *

Note: Queue reported is the number of cars per lane.

Scenario Report
Scenario: Background Year 2015 AM

Command: Default Command
Volume: Background Year 2015 AM
Geometry: Existing
Impact Fee: Default Impact Fee
Trip Generation: School AM
Trip Distribution: Total
Paths: Default Path
Routes: Default Route
Configuration: Default Configuration

Trip Generation Report

Forecast for School AM

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
2	Scottsdale F	1.00	School	61.00	61.00	61	61	122	100.0
Zone 2 Subtotal						61	61	122	100.0
TOTAL						61	61	122	100.0

Turning Movement Report
School AM

Volume Type	Northbound Left Thru Right	Southbound Left Thru Right	Eastbound Left Thru Right	Westbound Left Thru Right	Total Volume
#1 Pima Road and Dynamite Boulevard					
Base	53 364 170	96 518 91	113 254 59	396 269 142	2524
Added	0 27 0	17 27 17	17 0 0	0 0 17	122
Total	53 391 170	113 545 108	130 254 59	396 269 159	2646
#2 Access A & Dynamite Boulevard					
Base	0 0 0	0 0 0	0 426 0	0 413 0	839
Added	0 0 0	0 0 0	0 17 0	0 17 0	34
Total	0 0 0	0 0 0	0 443 0	0 430 0	873
#3 Access B & Dynamite Boulevard					
Base	0 0 0	0 0 0	0 426 0	0 413 0	839
Added	0 0 0	0 0 0	0 17 0	0 17 0	34
Total	0 0 0	0 0 0	0 443 0	0 430 0	873
#4 Access C & Pima Road					
Base	0 618 0	0 705 0	0 0 0	0 0 0	1323
Added	0 61 0	0 61 0	0 0 0	0 0 0	122
Total	0 679 0	0 766 0	0 0 0	0 0 0	1445
#5 Access D & Pima Road					
Base	0 618 0	0 705 0	0 0 0	0 0 0	1323
Added	0 61 0	0 61 0	0 0 0	0 0 0	122
Total	0 679 0	0 766 0	0 0 0	0 0 0	1445

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 Pima Road and Dynamite Boulevard

Cycle (sec): 100 Critical Vol./Cap. (X): 0.653
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 26.4
Optimal Cycle: 31 Level Of Service: C

Street Name:	Pima Road			Dynamite Boulevard		
Approach:	North Bound	South Bound	East Bound	West Bound	West Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Permitted	Permitted	Permit+Prot	Permit+Prot	Permit+Prot	Permit+Prot
Rights:	Include	Include	Include	Include	Include	Include
Min. Green:	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
Lanes:	1 0 1 0 1	1 0 2 0 1	1 0 1 0 1	1 0 1 0 1	1 0 1 0 1	1 0 1 0 1
Volume Module:						
Base Vol:	47 323 151	85 460 81	100 226 52	352 239 126		
Growth Adj:	1.13 1.13 1.13	1.13 1.13 1.13	1.13 1.13 1.13	1.13 1.13 1.13		
Initial Bse:	53 364 170	96 518 91	113 254 59	396 269 142		
Added Vol:	0 27 0	17 27 17	17 0 0	0 0 17		
PasserByVol:	0 0 0	0 0 0	0 0 0	0 0 0		
Initial Fut:	53 391 170	113 545 108	130 254 59	396 269 159		
User Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00		
PHF Adj:	0.90 0.90 0.90	0.90 0.90 0.90	0.90 0.90 0.90	0.90 0.90 0.90		
PHF Volume:	59 434 189	125 606 120	144 283 65	440 299 177		
Reduct Vol:	0 0 0	0 0 0	0 0 0	0 0 0		
Reduced Vol:	59 434 189	125 606 120	144 283 65	440 299 177		
PCE Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00		
MLF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00		
Final Volume:	59 434 189	125 606 120	144 283 65	440 299 177		
Saturation Flow Module:						
Sat/Lane:	1900 1900 1900	1900 1900 1900	1900 1900 1900	1900 1900 1900		
Adjustment:	0.33 1.00 0.85	0.29 0.95 0.85	0.38 1.00 0.85	0.58 1.00 0.85		
Lanes:	1.00 1.00 1.00	1.00 2.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00		
Final Sat.:	627 1900 1615	549 3610 1615	718 1900 1615	1106 1900 1615		
Capacity Analysis Module:						
Vol/Sat:	0.09 0.23 0.12	0.23 0.17 0.07	0.20 0.15 0.04	0.40 0.16 0.11		
Crit Moves:	****			****		
Green/Cycle:	0.35 0.35 0.35	0.35 0.35 0.35	0.45 0.23 0.23	0.62 0.40 0.40		
Volume/Cap:	0.27 0.65 0.33	0.65 0.48 0.21	0.29 0.65 0.18	0.56 0.39 0.27		
Uniform Del:	23.1 27.1 23.7	27.1 25.1 22.6	28.0 34.8 30.9	21.1 21.2 20.0		
IncrementDel:	0.6 2.2 0.3	7.3 0.3 0.2	0.3 3.4 0.2	0.9 0.3 0.2		
InitQueueDel:	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0		
Delay Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00		
Delay/Veh:	23.7 29.3 24.0	34.5 25.4 22.8	28.3 38.2 31.1	22.0 21.5 20.2		
User DelAdj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00		
AdjDel/Veh:	23.7 29.3 24.0	34.5 25.4 22.8	28.3 38.2 31.1	22.0 21.5 20.2		
LGS by Move:	C C C	C G C	C C C	C C C		
HCM2kAvgQ:	2 12 4	4 8 3	3 9 2	8 7 4		

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)
Intersection #3 Access B & Dynamite Boulevard

Table with columns for Street Name, Approach, Movement, Control, Rights, Lanes, Volume Module, Critical Gap Module, Capacity Module, and Level of Service Module. Includes data for North Bound, South Bound, East Bound, and West Bound movements.

Note: Queue reported is the number of cars per lane.

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)
Intersection #4 Access C & Pima Road

Table with columns for Street Name, Approach, Movement, Control, Rights, Lanes, Volume Module, Critical Gap Module, Capacity Module, and Level of Service Module. Includes data for North Bound, South Bound, East Bound, and West Bound movements.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Access D & Pima Road

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

Street Name:	Pima Road				Access D							
	North Bound		South Bound		East Bound		West Bound					
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled		Uncontrolled		Stop Sign		Stop Sign					
Rights:	Include		Include		Include		Include					
Lanes:	0	0	1	0	0	0	1	0	0	0	0	0

Volume Module:												
Base Vol:	0	549	0	0	626	0	0	0	0	0	0	0
Growth Adj:	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13
Initial Bse:	0	618	0	0	705	0	0	0	0	0	0	0
Added Vol:	0	61	0	0	61	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	679	0	0	766	0	0	0	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	755	0	0	851	0	0	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	755	0	0	851	0	0	0	0	0	0	0

Critical Gap Module:
Critical Gap: xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim: xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx

Capacity Module:
Conflict Vol: xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Potent Cap.: xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Move Cap.: xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Volume/Cap: xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx

Level Of Service Module:
2Way95thQ: xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Control Del: xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move: * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
SharedQueue: xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel: xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS: * * * * *
ApproachDel: xxxxxx xxxxxx xxxxxx xxxxxx
ApproachLOS: * * * * *

Note: Queue reported is the number of cars per lane.

Scenario Report

Scenario: Background Year 2015 PM
Command: Default Command
Volume: Background Year 2015 PM
Geometry: Existing
Impact Fee: Default Impact Fee
Trip Generation: School PM
Trip Distribution: Total
Paths: Default Path
Routes: Default Route
Configuration: Default Configuration

Trip Generation Report

Forecast for School PM

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
2	Scottsdale F	1.00	School	10.00	10.00	10	10	20	100.0
Zone 2 Subtotal						10	10	20	100.0
TOTAL						10	10	20	100.0

Turning Movement Report
School PM

Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
#1 Pima Road and Dynamite Boulevard													
Base	95	574	360	95	304	43	30	229	27	160	202	88	2206
Added	0	4	0	3	4	3	3	0	0	0	0	3	20
Total	95	578	360	98	308	46	33	229	27	160	202	91	2226
#2 Access A & Dynamite Boulevard													
Base	0	0	0	0	0	0	0	286	0	0	339	0	625
Added	0	0	0	0	0	0	0	3	0	0	3	0	6
Total	0	0	0	0	0	0	0	289	0	0	342	0	631
#3 Access B & Dynamite Boulevard													
Base	0	0	0	0	0	0	0	286	0	0	339	0	625
Added	0	0	0	0	0	0	0	3	0	0	3	0	6
Total	0	0	0	0	0	0	0	289	0	0	342	0	631
#4 Access C & Pima Road													
Base	0	692	0	0	441	0	0	0	0	0	0	0	1134
Added	0	10	0	0	10	0	0	0	0	0	0	0	20
Total	0	702	0	0	451	0	0	0	0	0	0	0	1154
#5 Access D & Pima Road													
Base	0	692	0	0	441	0	0	0	0	0	0	0	1134
Added	0	10	0	0	10	0	0	0	0	0	0	0	20
Total	0	702	0	0	451	0	0	0	0	0	0	0	1154

Level of Service Computation Report
 2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 Pima Road and Dynamite Boulevard

Cycle (sec): 100 Critical Vol./Cap.(X): 0.551
 Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 18.7
 Optimal Cycle: 27 Level Of Service: B

Street Name: Pima Road Dynamite Boulevard
 Approach: North Bound South Bound East Bound West Bound
 Movement: L - T - R L - T - R L - T - R L - T - R

Control Rights:	Permitted Include			Permitted Include			Permit+Prot Include			Permit+Prot Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1	0	1	0	1	0	1	0	1	

Volume Module:

Base Vol:	84	510	320	84	270	38	27	203	24	142	179	78
Growth Adj:	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13
Initial Bse:	95	574	360	95	304	43	30	229	27	160	202	88
Added Vol:	0	4	0	3	4	3	3	0	0	0	0	3
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	95	578	360	98	308	46	33	229	27	160	202	91
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	105	643	400	108	342	51	37	254	30	178	224	101
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	105	643	400	108	342	51	37	254	30	178	224	101
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	105	643	400	108	342	51	37	254	30	178	224	101

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.52	1.00	0.85	0.23	0.95	0.85	0.39	1.00	0.85	0.49	1.00	0.85
Lanes:	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	990	1900	1615	433	3610	1615	741	1900	1615	934	1900	1615

Capacity Analysis Module:

Vol/Sat:	0.11	0.34	0.25	0.25	0.09	0.03	0.05	0.13	0.02	0.19	0.12	0.06
Crit Moves:	****			****			****			****		
Green/Cycle:	0.57	0.57	0.57	0.57	0.57	0.57	0.30	0.23	0.23	0.40	0.33	0.33
Volume/Cap:	0.19	0.59	0.44	0.44	0.17	0.06	0.13	0.59	0.08	0.40	0.35	0.19
Uniform Del:	10.4	14.0	12.3	12.4	10.2	9.6	31.8	34.7	30.6	29.9	25.2	23.7
IncrementDel:	0.2	0.9	0.3	1.3	0.0	0.0	0.2	2.3	0.1	0.6	0.3	0.2
InitQueueDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	10.5	14.9	12.7	13.6	10.3	9.6	32.0	36.9	30.7	30.4	25.6	23.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	10.5	14.9	12.7	13.6	10.3	9.6	32.0	36.9	30.7	30.4	25.6	23.9
LOS by Move:	B	B	B	B	B	A	C	D	C	C	C	C
HCM2kAvgQ:	2	13	7	2	3	1	1	8	1	4	5	2

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 Access A & Dynamite Boulevard

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A [0.0]

Table with columns for Street Name, Approach, Movement, Control, Rights, and Lanes. Rows include North Bound, South Bound, East Bound, and West Bound for Access A and Dynamite Boulevard.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume. Rows include North Bound, South Bound, East Bound, and West Bound.

Critical Gap Module table with columns for Critical Gap and FollowUpTim.

Capacity Module table with columns for Conflict Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module table with columns for ZWay95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #3 Access B & Dynamite Boulevard

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A [0.0]

Table with columns for Street Name, Approach, Movement, Control, Rights, and Lanes. Rows include North Bound, South Bound, East Bound, and West Bound for Access B and Dynamite Boulevard.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume. Rows include North Bound, South Bound, East Bound, and West Bound.

Critical Gap Module table with columns for Critical Gap and FollowUpTim.

Capacity Module table with columns for Conflict Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module table with columns for ZWay95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4 Access C & Pima Road

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A(0.0)

Table with columns for Street Name (Pima Road, Access C), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Uncontrolled, Stop Sign), Rights (Include), and Lanes (0, 0, 1, 0, 0).

Table with columns for Volume Module (Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume) and rows for North Bound, South Bound, East Bound, West Bound.

Critical Gap Module:
Critical Gap: XXXXX XXXX XXXXX XXXX XXXX XXXXX XXXX XXXX XXXXX XXXX XXXX XXXXX
FollowUpTim: XXXXX XXXX XXXXX XXXX XXXX XXXXX XXXX XXXX XXXXX XXXX XXXX XXXXX

Capacity Module:
Conflict Vol: XXXX XXXX XXXXX XXXX XXXX XXXXX XXXX XXXX XXXXX XXXX XXXX XXXXX
Potent Cap.: XXXX XXXX XXXXX XXXX XXXX XXXXX XXXX XXXX XXXXX XXXX XXXX XXXXX
Move Cap.: XXXX XXXX XXXXX XXXX XXXX XXXXX XXXX XXXX XXXXX XXXX XXXX XXXXX
Volume/Cap: XXXX XXXX XXXX XXXX XXXX XXXXX XXXX XXXX XXXXX XXXX XXXX XXXXX

Level Of Service Module:
2Way95thQ: XXXX XXXX XXXXX XXXX XXXX XXXXX XXXX XXXX XXXXX XXXX XXXX XXXXX
Control Del: XXXXX XXXX XXXXX XXXXX XXXX XXXXX XXXXX XXXX XXXXX XXXX XXXX XXXXX
LOS by Move: * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: XXXX XXXX XXXXX XXXX XXXX XXXXX XXXX XXXX XXXXX XXXX XXXX XXXXX
SharedQueue: XXXXX XXXX XXXXX XXXXX XXXX XXXXX XXXXX XXXX XXXXX XXXX XXXX XXXXX
Shrd ConDel: XXXXX XXXX XXXXX XXXXX XXXX XXXXX XXXXX XXXX XXXXX XXXX XXXX XXXXX
Shared LOS: * * * * *
ApproachDel: XXXXXX XXXXXX XXXXXX XXXXXX
ApproachLOS: * * * * *

Note: Queue reported is the number of cars per lane.

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Access D & Pima Road

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A(0.0)

Table with columns for Street Name (Pima Road, Access D), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Uncontrolled, Stop Sign), Rights (Include), and Lanes (0, 0, 1, 0, 0).

Table with columns for Volume Module (Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume) and rows for North Bound, South Bound, East Bound, West Bound.

Critical Gap Module:
Critical Gap: XXXXX XXXX XXXXX XXXX XXXX XXXXX XXXX XXXX XXXXX XXXX XXXX XXXXX
FollowUpTim: XXXXX XXXX XXXXX XXXX XXXX XXXXX XXXX XXXX XXXXX XXXX XXXX XXXXX

Capacity Module:
Conflict Vol: XXXX XXXX XXXXX XXXX XXXX XXXXX XXXX XXXX XXXXX XXXX XXXX XXXXX
Potent Cap.: XXXX XXXX XXXXX XXXX XXXX XXXXX XXXX XXXX XXXXX XXXX XXXX XXXXX
Move Cap.: XXXX XXXX XXXXX XXXX XXXX XXXXX XXXX XXXX XXXXX XXXX XXXX XXXXX
Volume/Cap: XXXX XXXX XXXX XXXX XXXX XXXXX XXXX XXXX XXXXX XXXX XXXX XXXXX

Level Of Service Module:
2Way95thQ: XXXX XXXX XXXXX XXXX XXXX XXXXX XXXX XXXX XXXXX XXXX XXXX XXXXX
Control Del: XXXXX XXXX XXXXX XXXXX XXXX XXXXX XXXXX XXXX XXXXX XXXX XXXX XXXXX
LOS by Move: * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: XXXX XXXX XXXXX XXXX XXXX XXXXX XXXX XXXX XXXXX XXXX XXXX XXXXX
SharedQueue: XXXXX XXXX XXXXX XXXXX XXXX XXXXX XXXXX XXXX XXXXX XXXX XXXX XXXXX
Shrd ConDel: XXXXX XXXX XXXXX XXXXX XXXX XXXXX XXXXX XXXX XXXXX XXXX XXXX XXXXX
Shared LOS: * * * * *
ApproachDel: XXXXXX XXXXXX XXXXXX XXXXXX
ApproachLOS: * * * * *

Note: Queue reported is the number of cars per lane.

 Scenario Report
 Scenario: Total Year 2015 AM
 Command: Default Command
 Volume: Year 2015 AM
 Geometry: Year 2015
 Impact Fee: Default Impact Fee
 Trip Generation: AM
 Trip Distribution: Total
 Paths: Default Path
 Routes: Default Route
 Configuration: Default Configuration

 Trip Generation Report

Forecast for AM

Zone #	Subzone	Amount	Units	Rate		Trips		Total % Of	
				In	Out	In	Out	Trips	Total
1	Proposed Dev	1.00	Shopping Cente	69.00	66.00	69	66	135	52.5
	Zone 1 Subtotal					69	66	135	52.5
2	Scottsdale F	1.00	School	0.00	0.00	0	0	0	0.0
TOTAL						69	66	135	52.5

Trip Generation Report

Forecast for School AM

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Trips Total
2	Scottsdale F	1.00	School	61.00	61.00	61	61	122	47.5
Zone 2 Subtotal						61	61	122	47.5
TOTAL						61	61	122	47.5

Turning Movement Report

AM + School AM

Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
#1 Pima Road and Dynamite Boulevard													
Base	53	364	170	96	518	91	113	254	59	396	269	142	2524
Added	16	32	0	29	47	17	21	1	0	0	11	20	194
Total	69	396	170	125	565	108	134	255	59	396	280	162	2718
#2 Access A & Dynamite Boulevard													
Base	0	0	0	0	0	0	0	426	0	0	413	0	839
Added	0	0	0	5	0	5	14	17	0	0	25	3	69
PassBy	0	0	0	0	0	0	0	-8	0	0	-2	0	-10
Total	0	0	0	5	0	5	14	435	0	0	436	3	898
#3 Access B & Dynamite Boulevard													
Base	0	0	0	0	0	0	0	426	0	0	413	0	839
Added	0	0	0	0	0	8	0	22	0	0	20	24	74
PassBy	0	0	0	0	0	0	0	0	0	0	-13	0	-13
Total	0	0	0	0	0	8	0	448	0	0	420	24	900
#4 Access C & Pima Road													
Base	0	618	0	0	705	0	0	0	0	0	0	0	1323
Added	0	73	0	0	68	10	0	0	25	0	0	0	176
PassBy	0	0	0	0	-6	0	0	0	0	0	0	0	-6
Total	0	691	0	0	767	10	0	0	25	0	0	0	1493
#5 Access D & Pima Road													
Base	0	618	0	0	705	0	0	0	0	0	0	0	1323
Added	8	65	0	0	71	10	16	0	7	0	0	0	177
PassBy	0	-4	0	0	-6	0	0	0	0	0	0	0	-10
Total	8	679	0	0	770	10	16	0	7	0	0	0	1490

Level Of Service Computation Report
 2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 Pima Road and Dynamite Boulevard

Cycle (sec): 100 Critical Vol./Cap.(X): 0.698
 Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 25.9
 Optimal Cycle: 35 Level Of Service: C

Street Name:	Pima Road				Dynamite Boulevard					
	North Bound		South Bound		East Bound		West Bound			
Approach:	L	T	R	L	T	R	L	T	R	
Movement:										
Control:	Permitted		Permitted		Permit+Prot		Permit+Prot			
Rights:	Include		Include		Include		Include			
Min. Green:	0	0	0	0	0	0	0	0	0	
Lanes:	1	0	1	0	1	1	0	1	0	1

Volume Module:

Base Vol:	47	323	151	85	460	81	100	226	52	352	239	126
Growth Adj:	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13
Initial Base:	53	364	170	96	518	91	113	254	58	396	269	142
Added Vol:	16	32	0	29	47	17	21	1	0	0	11	20
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	69	396	170	125	565	108	134	255	59	396	280	162
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	77	440	189	139	628	120	148	284	65	440	311	180
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	77	440	189	139	628	120	148	284	65	440	311	180
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	77	440	189	139	628	120	148	284	65	440	311	180

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.31	1.00	0.85	0.26	0.95	0.85	0.39	1.00	0.85	0.59	1.00	0.85
Lanes:	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	583	1900	1615	498	3610	1615	742	1900	1615	1125	1900	1615

Capacity Analysis Module:

Vol/Sat:	0.13	0.23	0.12	0.28	0.17	0.07	0.20	0.15	0.04	0.39	0.16	0.11
Crit Moves:	****											
Green/Cycle:	0.40	0.40	0.40	0.40	0.40	0.40	0.41	0.21	0.21	0.58	0.37	0.37
Volume/Cap:	0.33	0.58	0.29	0.70	0.44	0.19	0.32	0.70	0.19	0.60	0.44	0.30
Uniform Del:	20.9	23.6	20.5	25.1	21.9	19.6	29.0	36.4	32.2	22.9	23.4	22.0
IncrementDel:	0.8	1.2	0.3	10.6	0.2	0.1	0.4	5.4	0.3	1.4	0.4	0.3
InitQueueDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	21.7	24.7	20.8	35.7	22.2	19.7	29.4	41.7	32.5	24.3	23.8	22.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	21.7	24.7	20.8	35.7	22.2	19.7	29.4	41.7	32.5	24.3	23.8	22.3
LOS by Move:	C	C	C	D	C	B	C	D	C	C	C	C
HCM2XAvqQ:	2	11	4	5	7	2	3	9	2	9	7	4

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 Access A & Dynamite Boulevard

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: B(12.5)

Street Name:	Access A				Dynamite Boulevard				
	North Bound		South Bound		East Bound		West Bound		
Approach:	L	T	R	L	T	R	L	T	R
Movement:	L	T	R	L	T	R	L	T	R
Control:	Stop Sign		Stop Sign		Uncontrolled		Uncontrolled		
Rights:	Include		Include		Include		Include		
Lanes:	0	0	0	0	1	0	0	0	1

Volume Module:

Base Vol:	0	0	0	0	0	0	378	0	0	367	0
Growth Adj:	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13
Initial Bse:	0	0	0	0	0	0	426	0	0	413	0
Added Vol:	0	0	0	5	0	5	14	17	0	25	3
PasserByVol:	0	0	0	0	0	0	0	-8	0	0	-2
Initial Fut:	0	0	0	5	0	5	14	435	0	436	3
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	6	0	6	16	483	0	485	3
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	6	0	6	16	483	0	485	3

Critical Gap Module:

Critical Gap:	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxxx	xxxx	xxxxxx	3.5	xxxx	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxxx

Capacity Module:

Cnflct Vol:	xxxx	xxxx	xxxxx	937	xxxx	360	364	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap:	xxxx	xxxx	xxxxxx	264	xxxx	614	1074	xxxx	xxxxx	xxxx	xxxx	xxxxxx
Move Cap:	xxxx	xxxx	xxxxxx	261	xxxx	614	1074	xxxx	xxxxx	xxxx	xxxx	xxxxxx
Total Cap:	357	357	xxxxx	405	361	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.01	xxxx	0.01	0.01	xxxx	xxxx	xxxx	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	0.0	xxxx	0.0	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	14.0	xxxx	10.9	8.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	B	*	B	A	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			12.5			xxxxxx			xxxxxx		
ApproachLOS:	*	*	*	B	*	*	*	*	*	*	*	*

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #3 Access B & Dynamite Boulevard

Average Delay (sec/veh): 0.1 Worst Case Level Of Service: B(10.8)

Street Name:	Access B				Dynamite Boulevard				
	North Bound		South Bound		East Bound		West Bound		
Approach:	L	T	R	L	T	R	L	T	R
Movement:	L	T	R	L	T	R	L	T	R
Control:	Stop Sign		Stop Sign		Uncontrolled		Uncontrolled		
Rights:	Include		Include		Include		Include		
Lanes:	0	0	0	0	0	1	0	0	1

Volume Module:

Base Vol:	0	0	0	0	0	0	378	0	0	367	0
Growth Adj:	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13
Initial Bse:	0	0	0	0	0	0	426	0	0	413	0
Added Vol:	0	0	0	0	0	8	0	22	0	20	24
PasserByVol:	0	0	0	0	0	0	0	0	0	0	-13
Initial Fut:	0	0	0	0	0	8	0	448	0	420	24
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	0	0	9	0	497	0	467	27
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	9	0	497	0	467	27

Critical Gap Module:

Critical Gap:	xxxxxx	xxxx	xxxxx	xxxxx	xxxx	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflct Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	340	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap:	xxxx	xxxx	xxxxxx	xxxx	xxxx	630	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxxx
Move Cap:	xxxx	xxxx	xxxxxx	xxxx	xxxx	630	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	0.0	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	10.8	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	B	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx					10.8	xxxxxx			xxxxxx		
ApproachLOS:	*	*	*	*	*	B	*	*	*	*	*	*

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4 Access C & Pima Road

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: C [15.8]

Table with columns for Street Name, Approach, Movement, Control, Rights, and Lanes. Rows include North Bound, South Bound, East Bound, and West Bound movements.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module table with columns for Critical Gap and FollowUpTim.

Capacity Module table with columns for Conflict Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module table with columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, Approach Del, and Approach LOS.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Access D & Pima Road

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: C [19.1]

Table with columns for Street Name, Approach, Movement, Control, Rights, and Lanes. Rows include North Bound, South Bound, East Bound, and West Bound movements.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module table with columns for Critical Gap and FollowUpTim.

Capacity Module table with columns for Conflict Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module table with columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, Approach Del, and Approach LOS.

Note: Queue reported is the number of cars per lane.

Scenario Report
Scenario: Total Year 2015 PM
Command: Default Command
Volume: Year 2015 PM
Geometry: Year 2015
Impact Fee: Default Impact Fee
Trip Generation: PM
Trip Distribution: Total
Paths: Default Path
Routes: Default Route
Configuration: Default Configuration

Trip Generation Report

Forecast for PM

Zone #	Subzone	Amount	Units	Rate		Trips		Total % Of	
				In	Out	In	Out	Trips	Total
1	Proposed Dev	1.00	Shopping Cente	104.00	105.00	104	105	209	91.3
	Zone 1 Subtotal					104	105	209	91.3
2	Scottsdale F	1.00	School	0.00	0.00	0	0	0	0.0
TOTAL						104	105	209	91.3

Trip Generation Report

Forecast for School PM

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total	
2	Scottsdale F	1.00	School	10.00	10.00	10	10	20	8.7	
Zone 2 Subtotal									20	8.7
TOTAL						10	10	20	8.7	

Turning Movement Report

PM + School PM

Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
#1 Pima Road and Dynamite Boulevard													
Base	95	574	360	95	304	43	30	229	27	160	202	88	2205
Added	23	12	0	22	36	3	9	2	0	0	17	7	131
Total	118	586	360	117	340	46	39	231	27	160	219	95	2337
#2 Access A & Dynamite Boulevard													
Base	0	0	0	0	0	0	0	286	0	0	339	0	625
Added	0	0	0	8	0	8	21	3	0	0	15	4	59
PassBy	0	0	0	0	0	0	0	-9	0	0	-2	0	-11
Total	0	0	0	8	0	8	21	280	0	0	352	4	673
#3 Access B & Dynamite Boulevard													
Base	0	0	0	0	0	0	0	286	0	0	339	0	625
Added	0	0	0	0	0	13	0	11	0	0	7	36	67
PassBy	0	0	0	0	0	0	0	0	0	0	-16	0	-16
Total	0	0	0	0	0	13	0	297	0	0	330	36	676
#4 Access C & Pima Road													
Base	0	592	0	0	441	0	0	0	0	0	0	0	1134
Added	0	28	0	0	21	16	0	0	39	0	0	0	104
PassBy	0	0	0	0	-7	0	0	0	0	0	0	0	-7
Total	0	720	0	0	455	16	0	0	39	0	0	0	1231
#5 Access D & Pima Road													
Base	0	592	0	0	441	0	0	0	0	0	0	0	1134
Added	12	16	0	0	26	16	25	0	11	0	0	0	106
PassBy	0	-5	0	0	-7	0	0	0	0	0	0	0	-12
Total	12	703	0	0	460	16	25	0	11	0	0	0	1228

Level Of Service Computation Report
 2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 Pima Road and Dynamite Boulevard

Cycle (sec): 100 Critical Vol./Cap. (X): 0.557
 Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 18.8
 Optimal Cycle: 27 Level Of Service: B

Street Name:	Pima Road				Dynamite Boulevard							
	North Bound		South Bound		East Bound		West Bound					
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted		Permitted		Permit+Prot		Permit+Prot		Permit+Prot		Permit+Prot	
Rights:	Include		Include		Include		Include		Include		Include	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1	0	1	0	1	1	0	1	0	1

Volume Module:												
	84	510	320	84	270	38	27	203	24	142	179	78
Base Vol:	84	510	320	84	270	38	27	203	24	142	179	78
Growth Adj:	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13
Initial Bse:	95	574	360	95	304	43	30	229	27	160	202	88
Added Vol:	23	12	0	22	36	3	9	2	0	0	17	7
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	118	586	360	117	340	46	39	231	27	160	219	95
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	131	651	400	130	378	51	44	256	30	178	243	105
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	131	651	400	130	378	51	44	256	30	178	243	105
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	131	651	400	130	378	51	44	256	30	178	243	105

Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.50	1.00	0.85	0.22	0.95	0.85	0.36	1.00	0.85	0.49	1.00	0.85
Lanes:	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	952	1900	1615	426	3610	1615	676	1900	1615	925	1900	1615

Capacity Analysis Module:												
Vol/Sat:	0.14	0.34	0.25	0.30	0.10	0.03	0.06	0.13	0.02	0.19	0.13	0.07
Crit Moves:	****						****			****		
Green/Cycle:	0.57	0.57	0.57	0.57	0.57	0.57	0.30	0.22	0.22	0.40	0.33	0.33
Volume/Cap:	0.24	0.60	0.43	0.53	0.18	0.06	0.15	0.60	0.08	0.40	0.39	0.20
Uniform Del:	10.7	14.0	12.2	13.2	10.3	9.5	32.6	34.7	30.6	30.1	26.0	24.2
IncrementDel:	0.2	0.9	0.3	2.3	0.0	0.0	0.2	2.4	0.1	0.6	0.4	0.2
InitQueueDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	10.9	14.9	12.5	15.5	10.3	9.5	32.8	37.1	30.7	30.7	26.4	24.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	10.9	14.9	12.5	15.5	10.3	9.5	32.8	37.1	30.7	30.7	26.4	24.4
LOS by Move:	B	B	B	B	B	A	C	D	C	C	C	C
HCM2kAvqQ:	2	13	7	3	3	1	1	8	1	4	6	2

Note: Queue reported is the number of cars per lane.

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 Access A & Dynamite Boulevard

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: B [11.3]

Street Name:	Access A				Dynamite Boulevard			
Approach:	North Bound		South Bound		East Bound		West Bound	
Movement:	L - T - R	R	L - T - R	R	L - T - R	R	L - T - R	R
Control:	Stop Sign		Stop Sign		Uncontrolled		Uncontrolled	
Rights:	Include		Include		Include		Include	
Lanes:	0 0 0 0 0		1 0 0 0 1		1 0 1 0 0		0 0 1 0 1	

Volume Module:

Base Vol:	0	0	0	0	0	254	0	0	301	0
Growth Adj:	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13
Initial Bse:	0	0	0	0	0	286	0	0	339	0
Added Vol:	0	0	0	8	0	21	3	0	15	4
PasserByVol:	0	0	0	0	0	0	-9	0	0	-2
Initial Fut:	0	0	0	8	0	21	280	0	352	4
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	9	0	23	311	0	391	4
Reduct Vol:	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	9	0	23	311	0	391	4

Critical Gap Module:

Critical Op:	xxxxx	xxxx	xxxxxx	xxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx
FollowUpTim:	xxxxxx	xxxx	xxxxxx	xxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx

Capacity Module:

Cnflct Vol:	xxxx	xxxx	xxxxxx	xxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx
Potent Cap.:	xxxx	xxxx	xxxxxx	xxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx
Move Cap.:	xxxx	xxxx	xxxxxx	xxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx
Total Cap.:	446	435	xxxxxx	498	442	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx
Volume/Cap.:	xxxx	xxxx	xxxxxx	0.02	xxxx	0.01	0.02	xxxx	xxxx	xxxx

Level of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxxx	0.1	xxxx	0.0	0.1	xxxx	xxxxxx	xxxx	xxxx	xxxxxx
Control Del:	xxxxxx	xxxx	xxxxxx	12.4	xxxx	10.3	8.1	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx
LOS by Move:				B	*	B	A	*	*	*	*	*
Movement:	LT - LTR - RT		LT - LTR - RT		LT - LTR - RT		LT - LTR - RT		LT - LTR - RT		LT - LTR - RT	
Shared Cap.:	xxxx	xxxx	xxxxxx	xxxx	xxxx	xxxxxx	xxxx	xxxx	xxxxxx	xxxx	xxxx	xxxxxx
Shared Queue:	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx
Shrd ConDel:	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx
Shared LOS:				*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			11.3			xxxxxx			xxxxxx		
ApproachLOS:				B			*			*		

Note: Queue reported is the number of cars per lane.

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #3 Access B & Dynamite Boulevard

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: B [10.1]

Street Name:	Access B				Dynamite Boulevard			
Approach:	North Bound		South Bound		East Bound		West Bound	
Movement:	L - T - R	R	L - T - R	R	L - T - R	R	L - T - R	R
Control:	Stop Sign		Stop Sign		Uncontrolled		Uncontrolled	
Rights:	Include		Include		Include		Include	
Lanes:	0 0 0 0 0		0 0 0 0 1		0 0 1 0 0		0 0 1 0 1	

Volume Module:

Base Vol:	0	0	0	0	0	254	0	0	301	0
Growth Adj:	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13
Initial Bse:	0	0	0	0	0	286	0	0	339	0
Added Vol:	0	0	0	0	0	13	0	11	0	7
PasserByVol:	0	0	0	0	0	0	0	0	0	-16
Initial Fut:	0	0	0	0	0	13	0	297	0	330
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	0	0	14	0	330	0	367
Reduct Vol:	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	14	0	330	0	367

Critical Gap Module:

Critical Op:	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	6.2	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx
FollowUpTim:	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	3.3	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx

Capacity Module:

Cnflct Vol:	xxxx	xxxx	xxxxxx	xxxx	xxxx	258	xxxx	xxxx	xxxxxx	xxxx	xxxx	xxxxxx
Potent Cap.:	xxxx	xxxx	xxxxxx	xxxx	xxxx	717	xxxx	xxxx	xxxxxx	xxxx	xxxx	xxxxxx
Move Cap.:	xxxx	xxxx	xxxxxx	xxxx	xxxx	717	xxxx	xxxx	xxxxxx	xxxx	xxxx	xxxxxx
Volume/Cap.:	xxxxxx	xxxx	xxxxxx	xxxx	xxxx	0.02	xxxx	xxxx	xxxxxx	xxxx	xxxx	xxxxxx

Level of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxxx	xxxx	xxxx	0.1	xxxx	xxxx	xxxxxx	xxxx	xxxx	xxxxxx
Control Del:	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	10.1	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx
LOS by Move:						B	*	*	*	*	*	*
Movement:	LT - LTR - RT		LT - LTR - RT		LT - LTR - RT		LT - LTR - RT		LT - LTR - RT		LT - LTR - RT	
Shared Cap.:	xxxx	xxxx	xxxxxx	xxxx	xxxx	xxxxxx	xxxx	xxxx	xxxxxx	xxxx	xxxx	xxxxxx
Shared Queue:	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx
Shrd ConDel:	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx
Shared LOS:				*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx					10.1	xxxxxx			xxxxxx		
ApproachLOS:						B	*			*		

Note: Queue reported is the number of cars per lane.

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4 Access C & Pima Road

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: B[11.8]

Table with columns: Street Name, Approach, Movement, Control, Rights, Lanes. Rows include Pima Road and Access C details.

Volume Module table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume.

Critical Gap Module table with columns: Critical Gap, FollowUpTim.

Capacity Module table with columns: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level of Service Module table with columns: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Access D & Pima Road

Average Delay (sec/veh): 0.6 Worst Case Level Of Service: C[16.0]

Table with columns: Street Name, Approach, Movement, Control, Rights, Lanes. Rows include Pima Road and Access D details.

Volume Module table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume.

Critical Gap Module table with columns: Critical Gap, FollowUpTim.

Capacity Module table with columns: Cnflct Vol, Potent Cap., Move Cap., Total Cap., Volume/Cap.

Level of Service Module table with columns: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.