

Beck Property

Traffic
Impact
Analysis

Van Buren Street/143rd Avenue
Goodyear, Arizona

December 2012
Project No. 11-570

CITY OF GOODYEAR - REPORT APPROVAL	
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EXECUTIVE SUMMARY

This report documents a traffic impact and traffic signal warrant analysis performed for the proposed Beck Property Development located along the 143rd Avenue alignment between Van Buren Street and Yuma Road in Goodyear, Arizona. The proposed development is located on 232 acres and will consist of approximately 2,432,000 square feet of Warehouse and 838,000 square feet of High-cube Warehouse land uses within four large building.

The following conclusions and recommendations have been documented in this study.

- ◆ Under the existing conditions all of the movements at the Van Buren Street intersections – 143rd Avenue, 145th Avenue, Bullard Avenue and Litchfield Road – and the Yuma Road intersections – Bullard Avenue and Litchfield Road – are projected to operate with level of service D or better in the peak hours.
- ◆ The proposed Beck Property Development is anticipated to generate 9,870 daily trips, with approximately 810 trips occurring during the AM peak hour and 865 trips occurring during the PM peak hour.
- ◆ Under the future 2013 traffic conditions all of the movements at each study intersection are projected to continue to operate with level of service D or better.
- ◆ Under the future 2018 traffic conditions all of the movements at each study intersection are projected to continue to operate with level of service D or better.
- ◆ The calculated storage lengths in Table 6 should be provided where possible. Existing median breaks and left turn lanes in existing medians may prohibit the construction of the calculated storage lengths.
- ◆ A 3-lane collector roadway should be provided for 143rd Avenue from Van Buren Street south to the development.
- ◆ Striping modifications may be required at the Van Buren Street/Bullard Avenue intersection (provide dual southbound left turn lanes) as well as traffic signal modifications (provide a protected southbound left turn phase and a westbound right turn overlap phase).
- ◆ Striping modifications may be required at the Van Buren Street/Litchfield Road intersection (provide a longer eastbound left turn lane storage).
- ◆ Striping modifications may be required at the Yuma Road/Litchfield Road intersection (provide a longer eastbound left turn lane storage).
- ◆ A traffic signal should be installed at the intersection of Van Buren Street and 143rd Avenue to provide acceptable levels of service for the northbound and southbound movements.

INTRODUCTION

The Beck Property Development is located along the 143rd Avenue alignment between Van Buren Street and Yuma Road west of Litchfield Road in Goodyear, Arizona. A location map is illustrated in **Figure 1**. The proposed development will consist of approximately 3,270,000 square feet of warehouse use.

CivTech Inc. has been retained by Beck Consulting Engineers and the Property Owner to prepare a Traffic Impact Analysis (TIA) for the proposed Beck Property Development as requested by the City of Goodyear.

PURPOSE OF REPORT AND STUDY OBJECTIVES

The purpose of this study is to analyze the impacts of the proposed Beck Property Development on the existing surrounding street system in support of the proposed lot split. The study will be prepared in conformance with the guidelines contained in Chapter 4, Section 1, “Streets and Right-of ways” of the November 2007 City of Goodyear *Design Standards & Policies Manual*. The specific objectives of the study are:

- ◆ To determine whether the existing street system in the vicinity of the site is adequate to accommodate the increased traffic that results from the proposed development, and
- ◆ To evaluate/determine the roadway cross section for 143rd Avenue south of Van Buren Street.

Study Area

The City of Goodyear uses the Maricopa County Department of Transportation (MCDOT) Traffic Impact Procedures. The MCDOT traffic study requirements are dependent on the maximum trip generation potential during the peak hours. The site is anticipated to generate between 500 and 1,000 trips during the PM peak hour. This amount of generated trips requires a Category II type study. The study area should include site accesses and signalized and major unsignalized intersections within ½ mile of the site. The study area for this TIA includes the existing intersections of Van Buren Street at Bullard Avenue, 145th Avenue, 143rd Avenue, and Litchfield Road and the intersections of Yuma Road at Bullard Avenue and Litchfield Road.

Horizon Year

The MCDOT TIA study year requirements for a Category II type study include the opening year and opening year plus 5 years. The opening/build-out year is assumed to be 2013. Therefore, the horizon years were defined as 2013 and 2018. The analysis will be provided for the AM and PM peak hours of the horizon years.

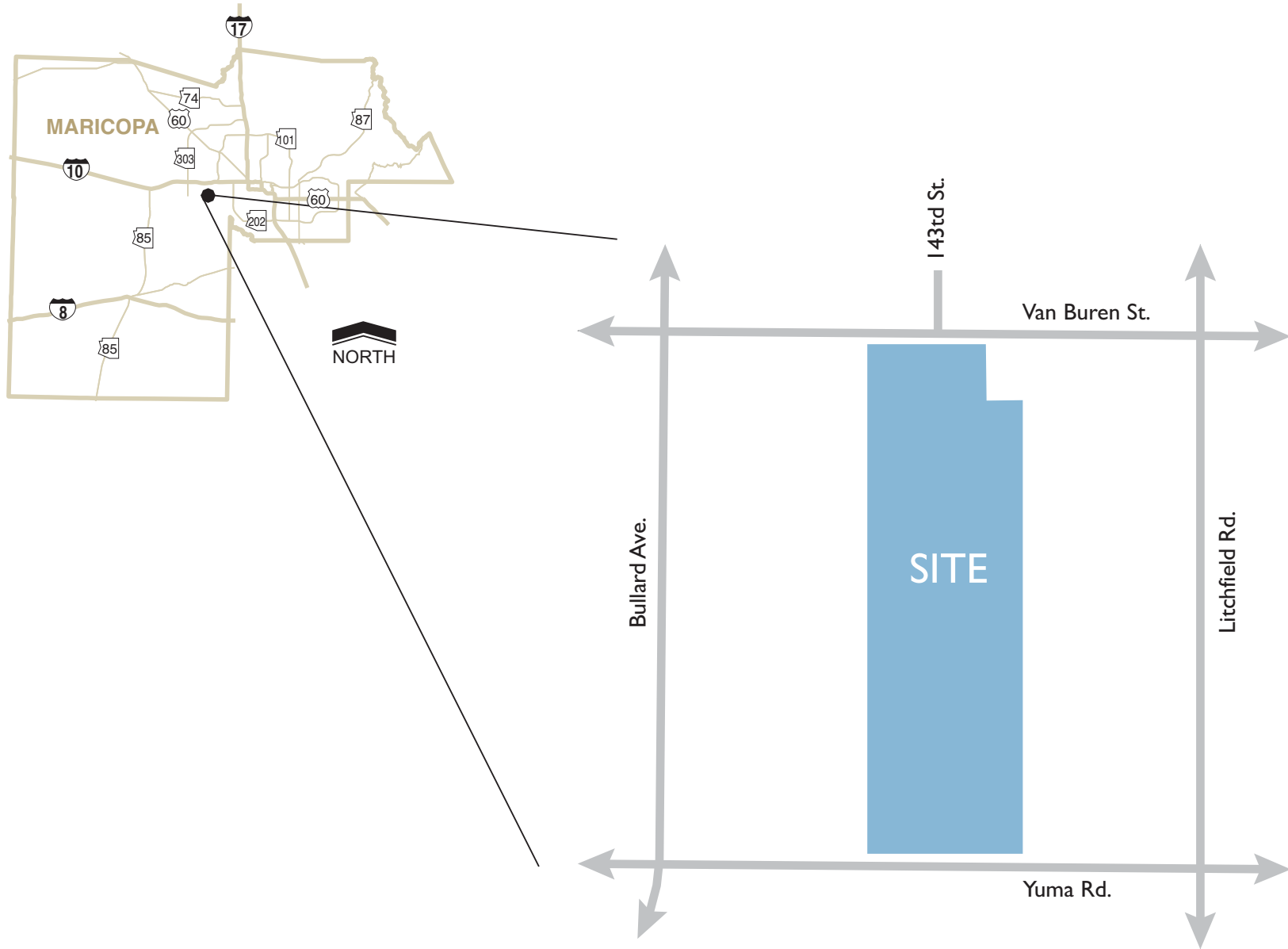


Figure 1: Vicinity Map

EXISTING CONDITIONS

SURROUNDING LAND USE

The majority of the surrounding area is undeveloped agricultural land. Per the City's Land Use Plan (Dated December 2009), the surrounding area is zoned Light Industrial. The City of Goodyear's Engineering Office is located west of the development on the south side of Van Buren Street. The Phoenix Goodyear Airport is to the south of the development.

ROADWAY NETWORK

The existing roadway network within the study area includes Van Buren Street, Bullard Avenue, Litchfield Road, Yuma Road, 143rd Avenue and 145th Avenue.

Van Buren Street is an east-west major arterial roadway located approximately ½ mile south of Interstate 10 (I-10). West of 143rd Avenue, Van Buren Street has three (3) eastbound through lanes and two (2) westbound through lanes separated by a raised median, with median breaks at key intersections. East of 143rd Avenue, Van Buren Street has two (2) through lanes in each direction with a middle two-way left-turn lane. Bullard Avenue (located west of the proposed site) and Litchfield Road (located east of the proposed site) each connect to Van Buren Street and have an interchange with I-10. It has a posted speed limit of 45 mph adjacent to the project site.

Bullard Avenue is a north-south major arterial roadway located approximately ½ mile west of the site. It provides a connection to I-10 to the north and has a posted speed limit of 45 mph. It has three (3) northbound through lanes and one (1) southbound through lane separated by a raised median north of Van Buren Street. South of Van Buren Street it is a two-lane roadway that connects to Yuma Road and eventually Estrella Parkway.

Litchfield Road is a north-south major arterial roadway located approximately ½ mile east of the site. It has three (3) northbound through lanes and two (2) southbound through lanes separated by either a raised median or two-way left turn lane. It provides a connection to I-10 to the north as well as Luke Air Force Base and has a posted speed limit of 40 mph.

Yuma Road is an east-west scenic arterial roadway located 1 mile south of Van Buren Street and forms the southern border of the site. Immediately south and west of the site Yuma Road is a two-lane roadway. At Estrella Parkway it provides two lanes in each direction separated by a raised median. East of the site, Yuma Road consists of two (2) through lanes in each direction separated by a two-way left-turn lane until Central Avenue, where it transitions to a two (2) lane undivided roadway. Yuma Road has posted speed limits of 45 mph westbound, 35 mph eastbound adjacent to the project site and 25 mph (both directions) when it becomes Western Avenue to the east of the site.

143rd Avenue is a north-south collector roadway that currently only exists north of Van Buren Street. It has one (1) through lane in each direction separated by a raised median and provides access to the business complexes north of Van Buren Street. It has a posted speed limit of 35 mph and terminates in a cul-de-sac approximately 1,900 feet north of Van Buren Street.

145th Avenue is a north-south collector roadway located approximately ¼ mile west of the site. It has a posted speed limit of 25 mph. It currently only exists south of Van Buren Street and provides access to the business park complex immediately west of the project site. It has a full access median break at its intersection with Van Buren Street.

INTERSECTION CONFIGURATIONS AND TRAFFIC CONTROLS

The intersection of **Van Buren Street/Bullard Avenue** is currently a four-legged signalized intersection. The northbound approach consists of an exclusive left-turn lane, two (2) through lanes, and an exclusive right-turn lane. The westbound approach consists of an exclusive left-turn lane, two (2) through lanes, and an exclusive right-turn lane. The southbound approach consists of an exclusive left-turn lane, one (1) through lane, and an exclusive right-turn lane. The eastbound approach consists of an exclusive left-turn lane, three (3) through lanes, and an exclusive right-turn lane. The traffic signal operates with lagging permissive/protected left turn phasing. The intersection has been improved to be able to provide dual left turn lanes in the westbound, eastbound and southbound directions, as well as three (3) southbound through lanes. These areas are currently striped out, restricting traffic to the lanes mentioned above.

The intersection of **Van Buren Street/145th Avenue** is currently a three-legged unsignalized intersection. The northbound approach consists of an exclusive left-turn lane and an exclusive right-turn lane under stop sign control. The westbound approach consists of an exclusive left-turn lane and two (2) through lanes. The eastbound approach consists of an exclusive left-turn lane, three (3) through lanes, and an exclusive right-turn lane.

The intersection of **Van Buren Street/143rd Avenue** is currently a three-legged unsignalized intersection. The southbound approach consists of an exclusive left-turn lane and an exclusive right-turn lane under stop sign control. The westbound approach consists of an exclusive left-turn lane, one (1) through lane, and a shared through/right-turn lane. The eastbound approach consists of an exclusive left-turn lane and two (2) through lanes.

The intersection of **Van Buren Street/Litchfield Road** is currently a four-legged signalized intersection. The northbound approach consists of an exclusive left-turn lane, two (2) through lanes, and a shared through/right-turn lane. The westbound approach consists of an exclusive left-turn lane, one (1) through lane, and a shared through/left-turn lane. The southbound approach consists of an exclusive left-turn lane, two (2) through lanes, and an exclusive right-turn lane. The eastbound approach consists of an exclusive left-turn lane, two (2) through lanes, and an exclusive right-turn lane. The traffic signal operates with lagging permissive/protected left turn phasing. The intersection is fully developed and would require right-of-way acquisition to provide any additional lanes.

The intersection of **Yuma Road/Bullard Road** is currently a four-legged signalized intersection. The northbound approach consists of an exclusive left-turn lane, one (1) through lane, and an exclusive right-turn lane. The southbound approach consists of an exclusive left-turn lane and a shared through/right-turn lane. The east- and westbound approaches consist of a single general purpose lane. The traffic signal operates with permissive left turn phasing.

The intersection of **Yuma Road/Litchfield Road** is currently a four-legged signalized intersection. All approaches consist of an exclusive left-turn lane, one (1) through lane, and a shared through/right turn lane. The traffic signal operates with lagging permissive/protected left turn phasing.

The existing lane configurations and traffic controls are illustrated in **Figure 2**.

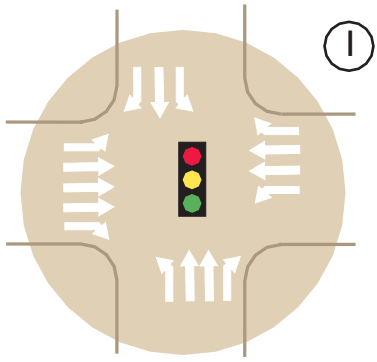
TRAFFIC VOLUMES

CivTech conducted peak hour turning movement counts at the intersections of Van Buren Street/143rd Avenue and Van Buren Street/145th Avenue on Tuesday, May 17, 2011. At the City's request CivTech also collected peak hour turning movement counts at the intersections of Van Buren Street/Bullard Avenue and Van Buren Street/Litchfield Road on Thursday, July 7, 2011. Additional traffic counts were collected at the intersections of Yuma Road/Bullard Avenue and Yuma Road/Litchfield Road on Wednesday, December 5, 2012. In addition, updated traffic counts were collected at the intersection of Van Buren Street/Bullard Avenue on December 5, 2012. The turning movement counts were conducted from 7AM to 9AM and 4PM to 6PM.

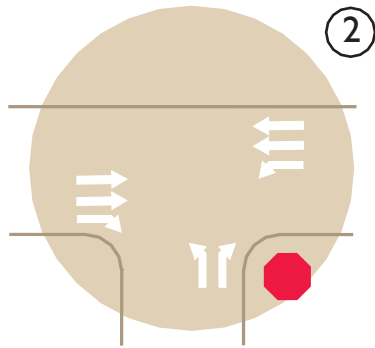
A comparison between the traffic volumes recorded at the intersection of Van Buren Street and Bullard Avenue in 2011 and 2012 indicated a small increase in the AM peak hour (approximately 1.5%) and a decrease in the PM peak hour (approximately 4%). For the purposes of this analysis the recorded traffic volumes for the three (3) intersections counted in December were utilized while a two (2) percent increase was applied to the traffic volumes at the three (3) intersections counted in July of 2011. **Figure 3** depicts the recently recorded (and adjusted) peak hour turning movement volumes during the peak hours. The traffic volume summaries are provided in **Appendix B**.

CAPACITY ANALYSIS

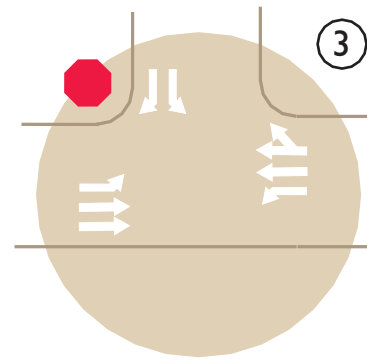
The concept of level of service (LOS) uses qualitative measures that characterize operational conditions within the traffic stream. The individual levels of service are described by factors that include speed, travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. Six levels of service are defined for each type of facility for which analysis procedures are available. They are given letter designations A through F, with LOS A representing the best operating conditions and LOS F the worst. Each level of service represents a range of operating conditions. Levels of service for intersections are defined in terms of average delay ranges for vehicles. **Table 1** lists the level of service criteria for signalized and unsignalized intersections.



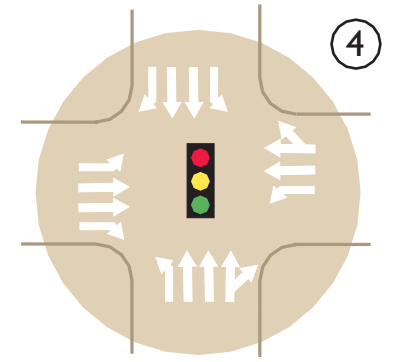
Bullard Ave. & Van Buren St.



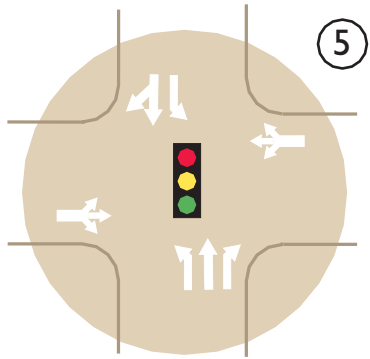
145th Ave. & Van Buren St.



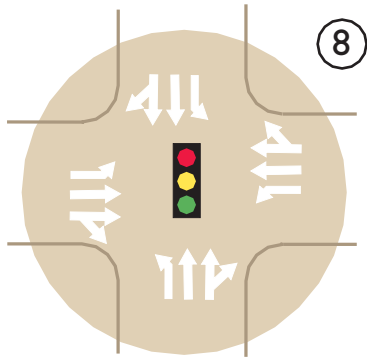
143rd Ave. & Van Buren St.



Litchfield Rd. & Van Buren St.



Yuma Rd. & Bullard Ave.



Yuma Rd. & Litchfield Rd.

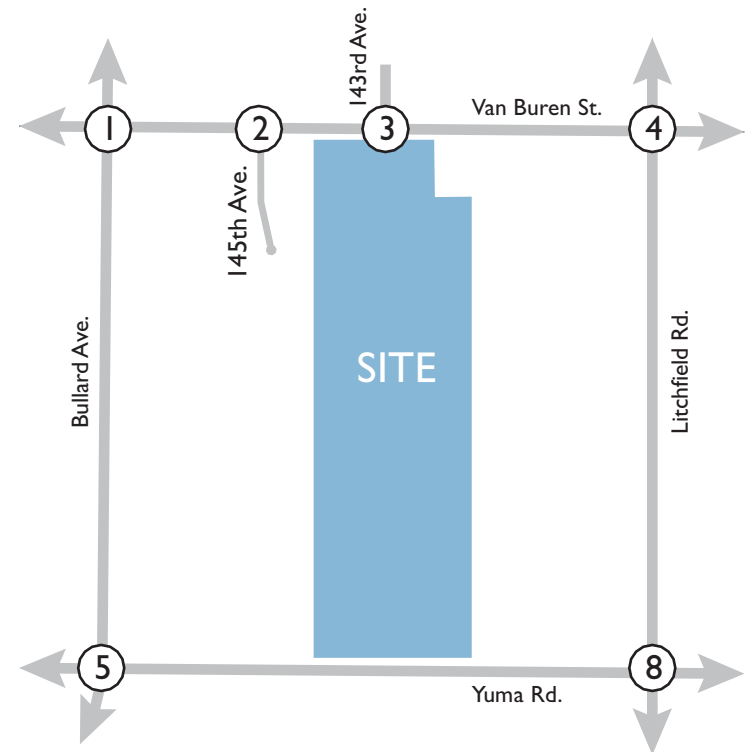
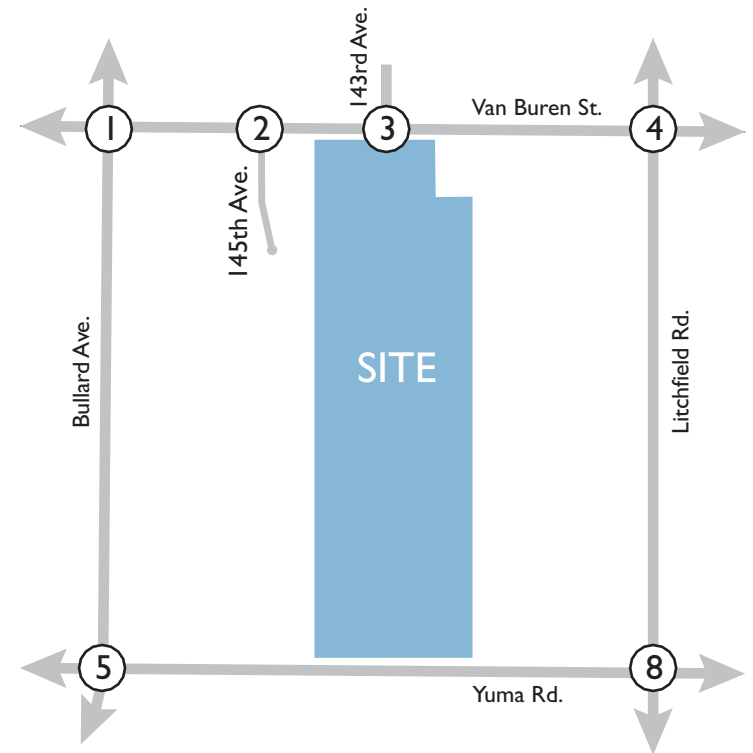
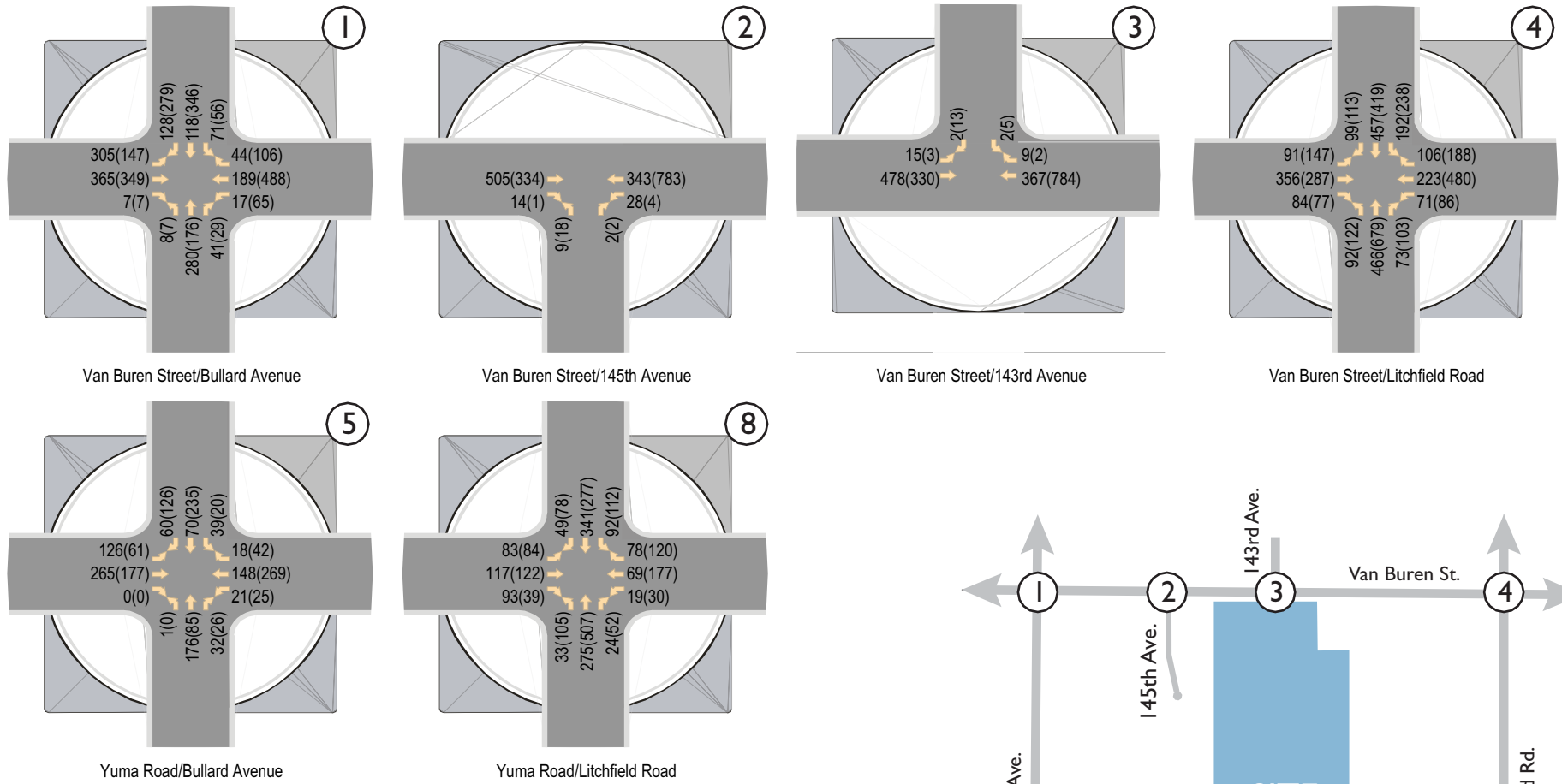


Figure 2: Existing Lane Configurations and Stop Controls

LEGEND

- Thru or Turning Movement
- Stop Sign
- Traffic Signal





LEGEND

XX(XX) - AM(PM) Peak Hour Traffic Volumes



Figure 3: Existing Peak Hour Traffic Volumes

Table 1: Level of Service Criteria

Level of Service	Control Delay (seconds/vehicle)	
	Signalized Intersections	Unsignalized Intersections
A	≤ 10	≤ 10
B	> 10-20	> 10-15
C	> 20-35	> 15-25
D	> 35-55	> 25-35
E	> 55-80	> 35-50
F	> 80	> 50

Source: Exhibit 18-4 and Exhibit 19-1, *Highway Capacity Manual 2010*

Peak hour capacity analyses were conducted for the study intersections based on the existing intersection configurations provided in **Figure 2** and 2011 traffic volumes presented in **Figure 3**. The intersections were analyzed using the methodologies presented in the *Highway Capacity Manual (HCM)*, using HCS software. The LOS for each stop-controlled movement is reported for unsignalized intersections. The resulting levels of service for the existing conditions are summarized in **Table 2**. The existing conditions analyses (2012) have been included in **Appendix C**.

Table 2: 2012 Peak Hour Levels of Service

Intersection	Traffic Control	Approach	Existing LOS	
			AM Peak Hour	PM Peak Hour
Van Buren Street/143 rd Avenue	1-way stop (SB)	SB LT	B	C
		SB RT	A	B
		EB LT	A	A
Van Buren Street/145 th Avenue	1-way stop (NB)	NB LT	C	C
		NB RT	A	A
		WB LT	A	A
Van Buren Street/Bullard Avenue	Signal	NB	C	C
		SB	C	C
		EB	B	C
		WB	D	C
		Overall	C	C
Van Buren Street/Litchfield Road	Signal	NB	C	C
		SB	C	C
		EB	C	C
		WB	C	C
		Overall	C	C
Yuma Road/Bullard Avenue	Signal	NB	C	B
		SB	C	B
		EB	A	B
		WB	A	B
		Overall	B	B

Table 2: 2012 Peak Hour Levels of Service (Con't)

Intersection	Traffic Control	Approach	Existing LOS	
			AM Peak Hour	PM Peak Hour
Yuma Road/Litchfield Road	Signal	NB	B	C
		SB	B	C
		EB	C	C
		WB	D	C
		Overall	B	C

Under the existing conditions, all of the movements at each intersection are projected to operate with level of service D or better.

PROPOSED DEVELOPMENT

LAND USE AND INTENSITY

The proposed Beck Property Development is located south of Van Buren Street along the 143rd Avenue alignment in the City of Goodyear. The project is being proposed for a lot split – creating four (4) lots. The project will have one initial access to Van Buren Street that will form the southern leg of the existing Van Buren Street/143rd Avenue intersection. 143rd Avenue will be extended south connecting to Yuma Road creating a T-intersection. In addition, there will be an additional site access intersection with Yuma Road, east of the 143rd Avenue intersection. It will consist of approximately 2,432,000 square feet of Warehouse and 838,000 square feet of High-cube Warehouse land uses within four large buildings on approximately 232 acres.

The site plan of the proposed Beck Property Development is illustrated in **Figure 4**.

SITE TRIP GENERATION

The Institute of Transportation Engineers (ITE) *Trip Generation, 8th Edition* contains data for a wide range of different land uses. The data includes average rates and equations that correlate between an independent variable that describes the development size and generated trips for each categorized land use. The report provides information for daily, AM and PM peak hour trips for warehouse land uses. Detailed trip generation calculations have been included in **Appendix D**.

The trip generation for the Beck Property Development is based on ITE land use codes 150 and 152, and is illustrated in **Table 3**.

Table 3: Project Generated Trips

Land Use	ITE LUC	Size	Units	Weekday Trips Generated						
				Daily Total	AM Peak Hour			PM Peak Hour		
					Enter	Exit	Total	Enter	Exit	Total
Warehousing	150	2,432	KSF	8,662	550	182	732	213	566	779
High-cube Warehouse	152	838	KSF	1,208	60	16	76	21	63	84
Totals				9,870	610	198	808	234	629	863

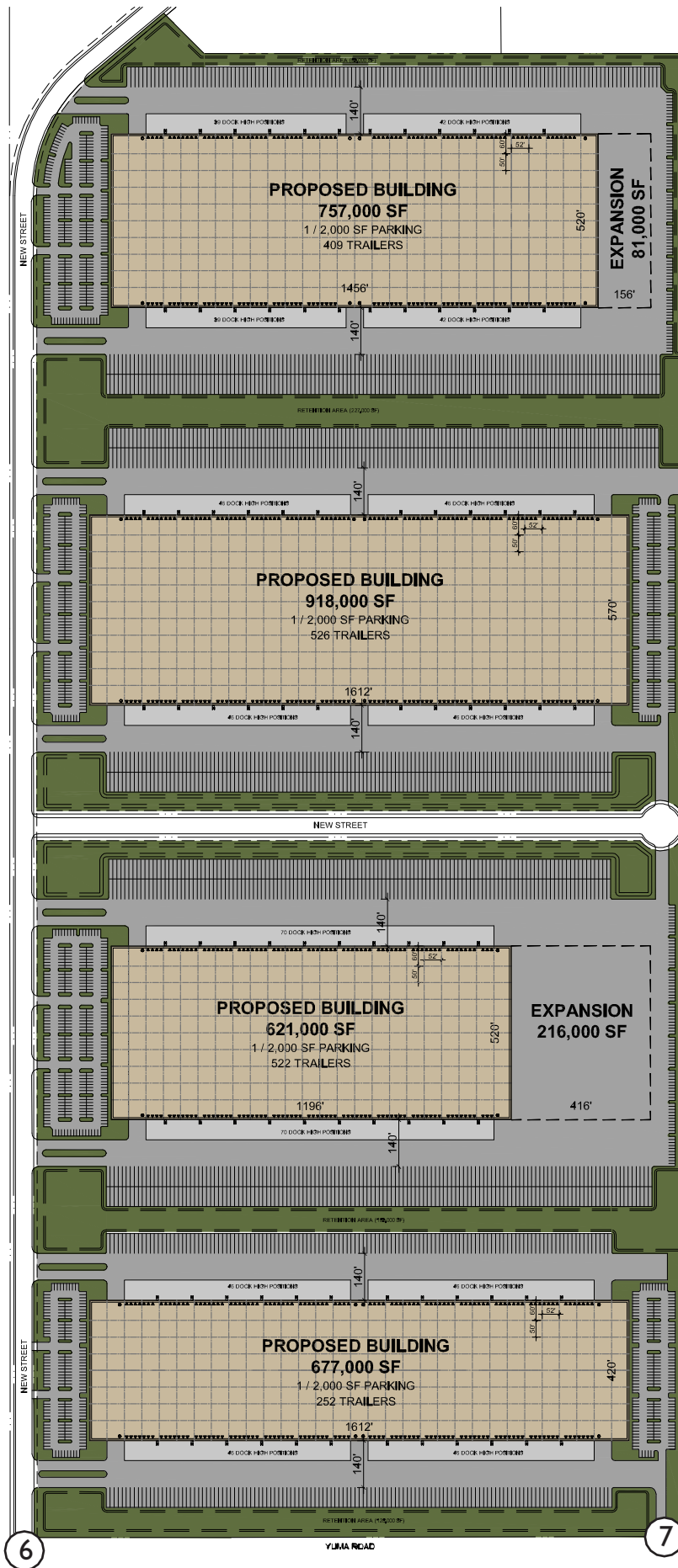


Figure 4: Site Plan and Access Points

Based on ITE rates as summarized in **Table 3**, the Beck Property Development could generate approximately 9,870 daily trips, with approximately 810 trips occurring during the AM peak hour and 865 trips occurring during the PM peak hour.

DIRECTIONAL DISTRIBUTION AND TRIP ASSIGNMENT

As mentioned earlier, access to I-10 and the regional freeway system is available to the east and west of the development along Van Buren Street. Residential areas (origins/destinations for employees) are located in all directions with the majority to the east of the project. With I-10 providing regional access for employee and less than a mile north of the project site, it is anticipated that the majority of the traffic will be to/from I-10.

The trip distribution utilized for this analysis is depicted in **Figure 5**.

TRIP ASSIGNMENT

The distribution percentages were applied to the generated trips to determine the AM and PM peak hour site traffic at the intersections within the study area. **Figure 6** illustrates the opening year/full-build of the proposed Beck Property Development site generated traffic volumes.

BACKGROUND TRAFFIC

The project is scheduled for opening in 2013. An expansion factor of 1.02 was applied to the 2012 traffic volumes in **Figure 3** for the opening year (2013) and an expansion factor of 1.126 was applied for horizon year 2018. These expansion factors explore a linear growth rate of 2.0 percent per year. Background growth calculations are included in **Appendix E**.

The opening year 2013 peak hour background traffic volumes are shown in **Figure 7** and the horizon year 2018 peak hour background traffic is depicted in **Figure 8**.

TOTAL TRAFFIC

The opening year and opening plus five year (2013 and 2018) total traffic volumes were determined by adding the respective background traffic to the build-out site generated traffic for the Beck Property Development. The opening year 2013 total peak hour traffic volumes are shown in **Figure 9** and the horizon year 2018 total peak hour traffic volumes are shown in **Figure 10**.

2013 PEAK HOUR CAPACITY ANALYSIS

Peak hour capacity analyses have been conducted for the study intersections and site driveways. All intersections have been analyzed using the methodologies as described previously and presented in the *Highway Capacity Manual (HCM), Special Report 209*, Updated 2010 and using TRAFFIX Software version 8.0 under the HCM 2010 methodology.

Results of the 2013 level-of-service analyses with the project developed are shown in **Table 4**. The analysis worksheets for the 2013 horizon year conditions have been included in **Appendix F**. The lane configurations provided on **Figure 11** were utilized for the intersection analyses.

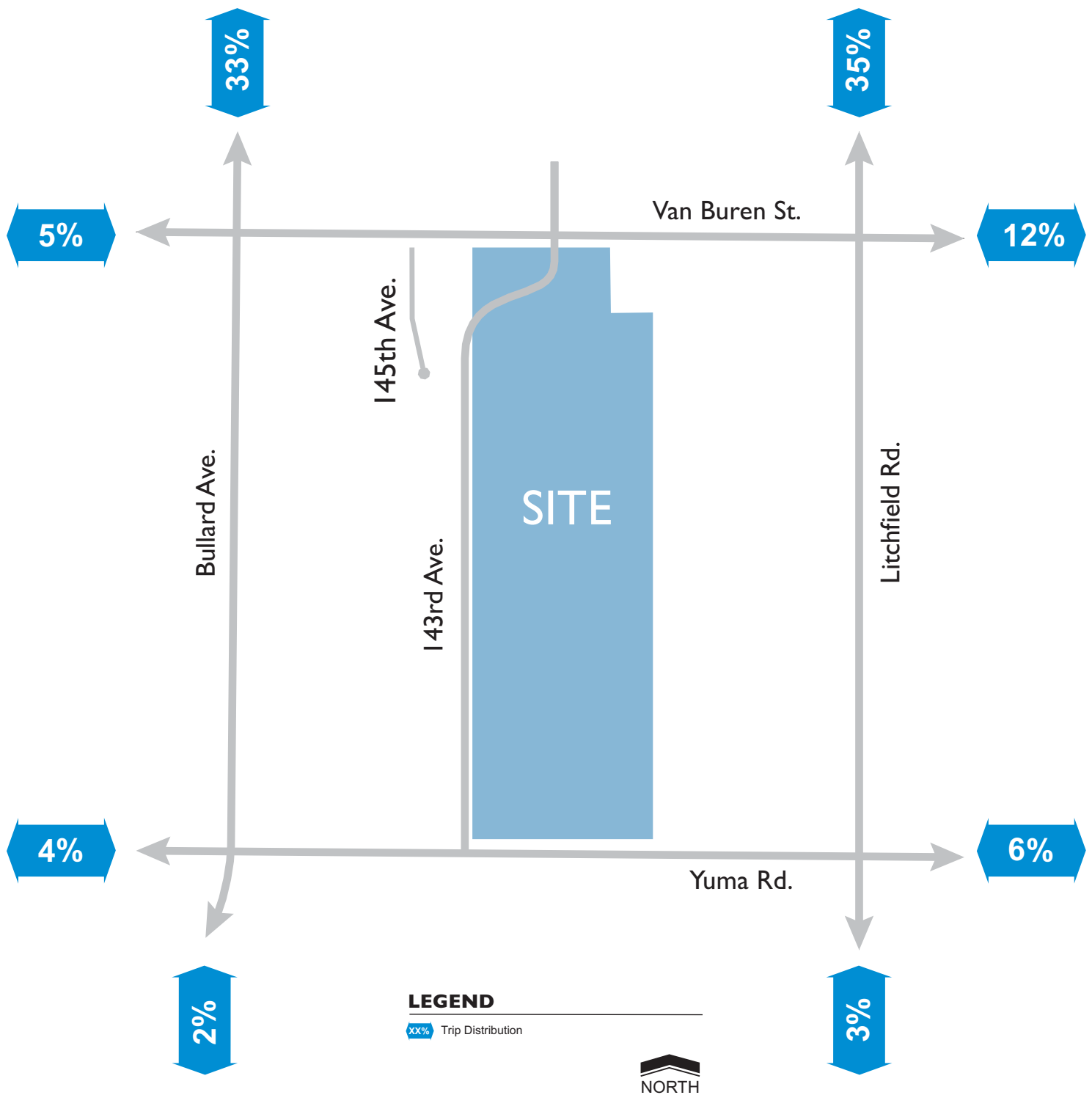
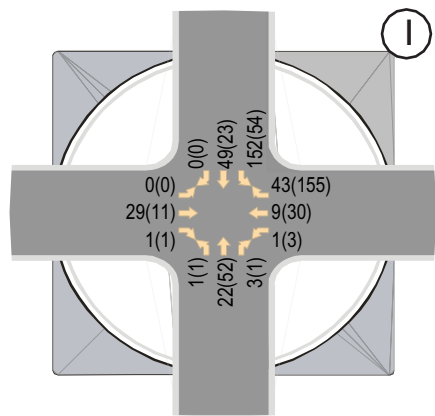
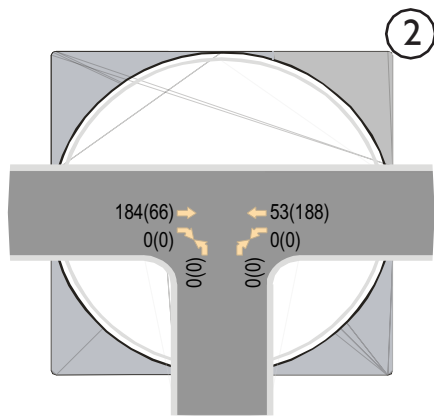


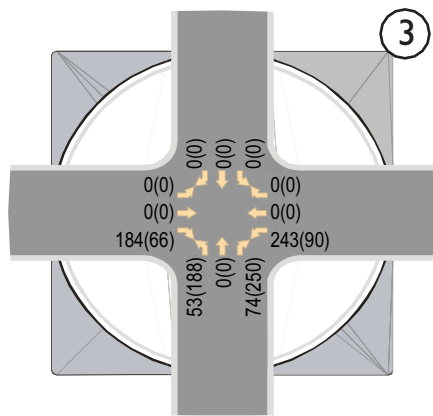
Figure 5: Trip Distribution



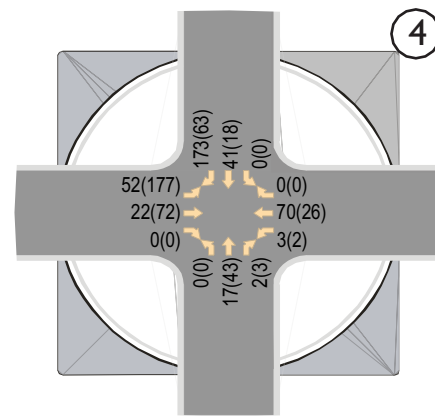
Van Buren Street/Bullard Avenue



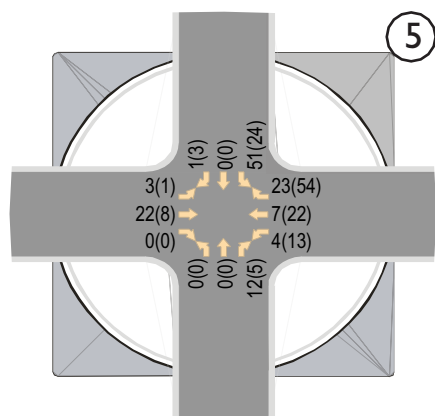
Van Buren Street/145th Avenue



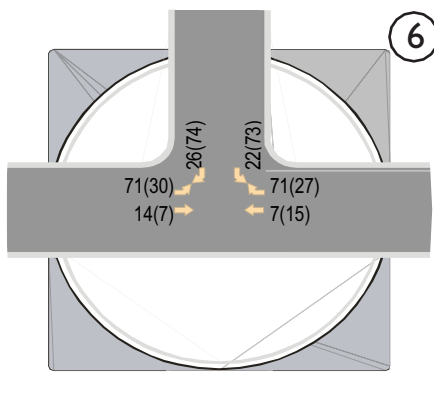
Van Buren Street/143rd Avenue



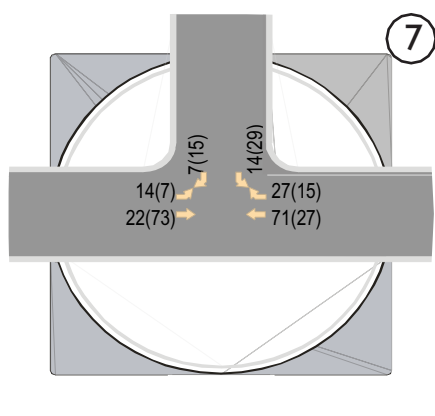
Van Buren Street/Litchfield Road



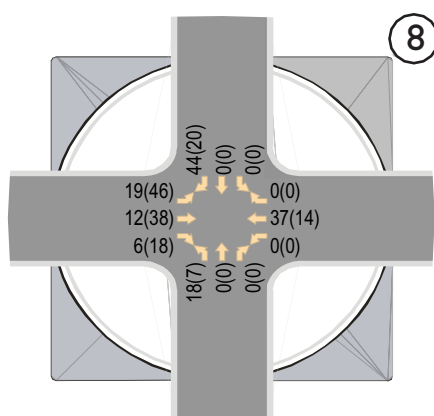
Yuma Road/Bullard Avenue



Yuma Road/143rd Avenue



Yuma Road/Access C



Yuma Road/Litchfield Road

LEGEND

XX(XX) - AM(PM) Peak Hour Traffic Volumes

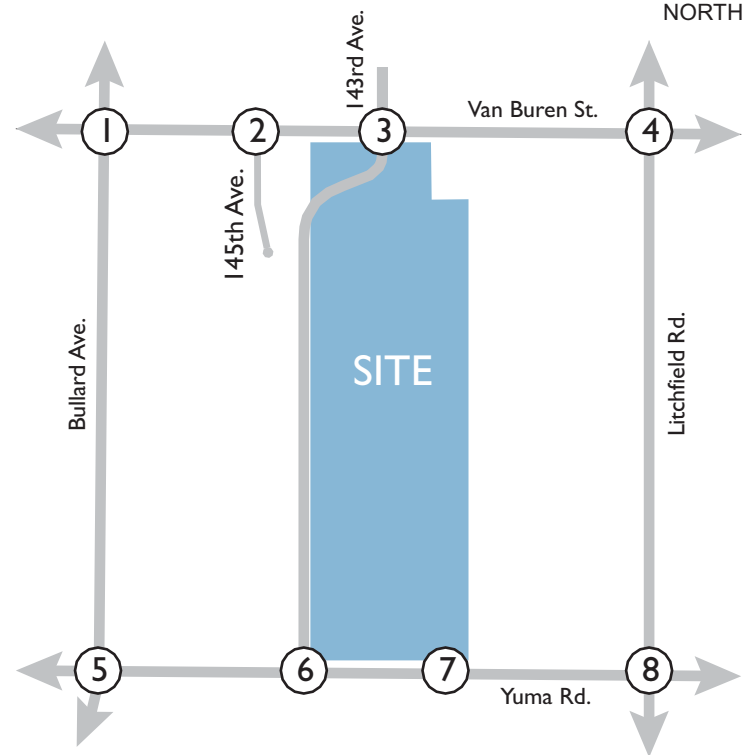
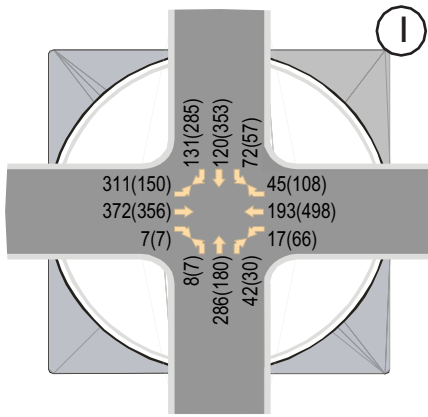
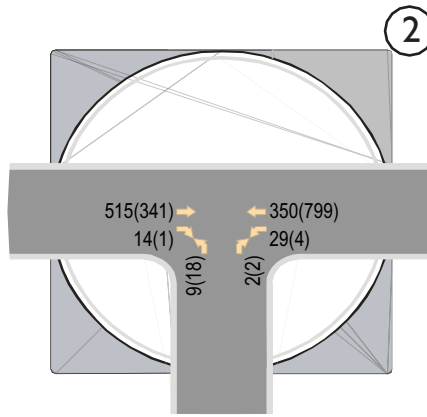


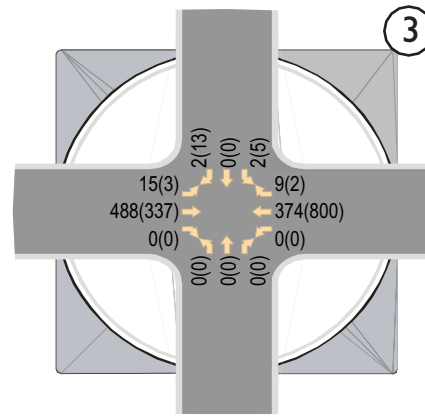
Figure 6: Site Generated Traffic Volumes



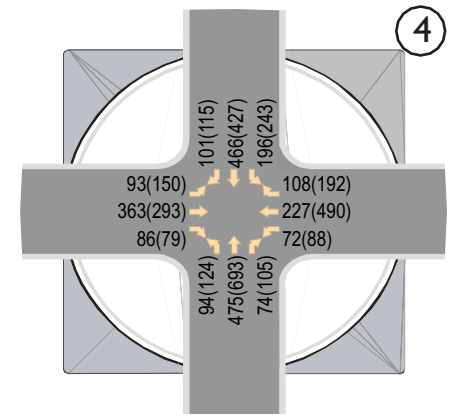
Van Buren Street/Bullard Avenue



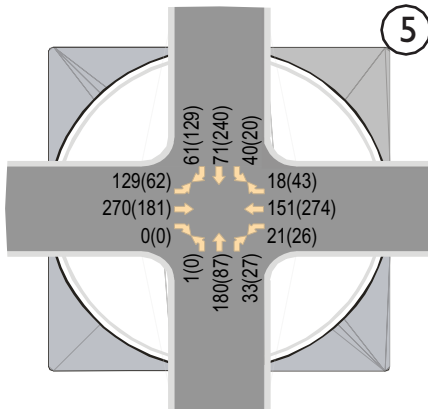
Van Buren Street/145th Avenue



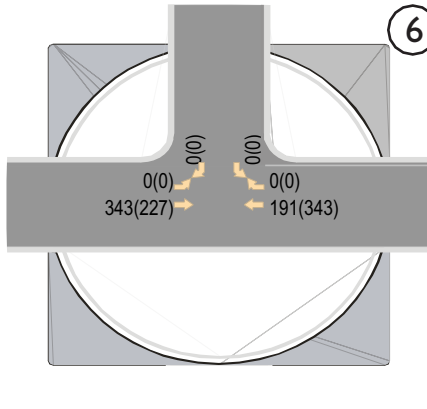
Van Buren Street/143rd Avenue



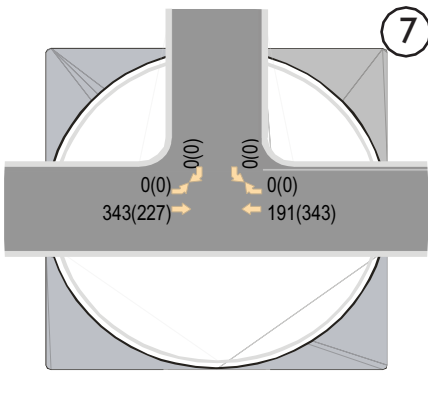
Van Buren Street/Litchfield Road



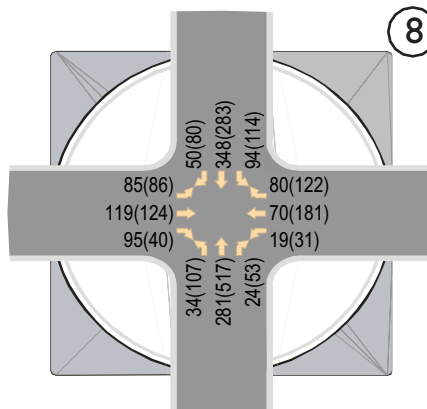
Yuma Road/Bullard Avenue



Yuma Road/143rd Avenue



Yuma Road/Access C



Yuma Road/Litchfield Road

LEGEND

XX(XX) - AM(PM) Peak Hour Traffic Volumes

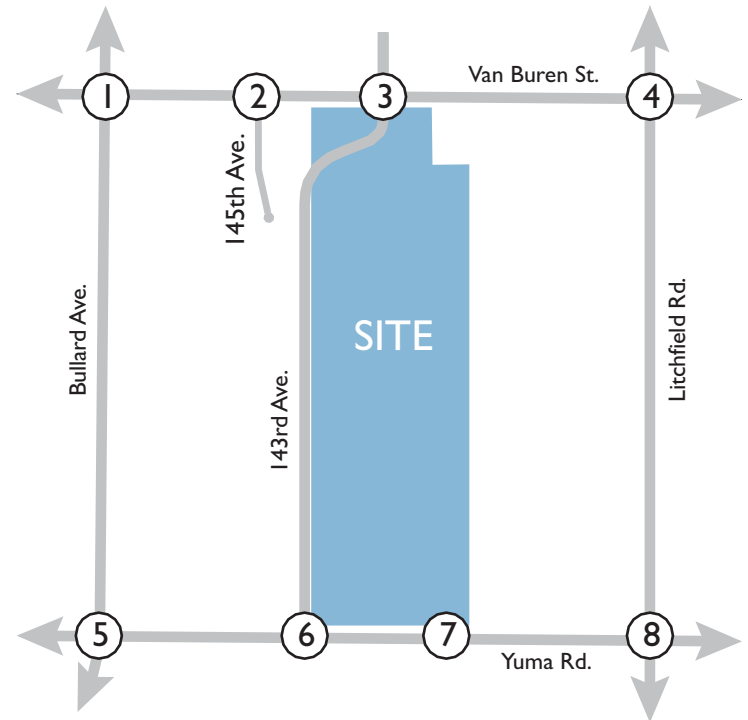
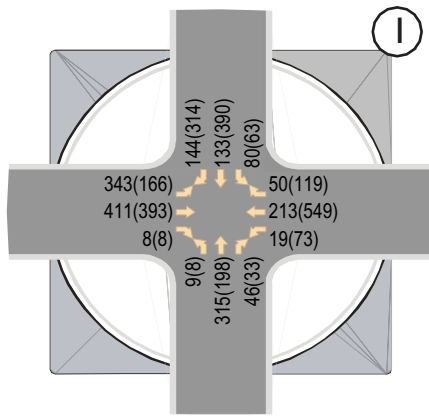
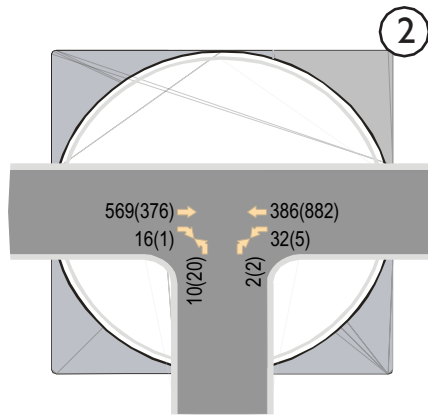


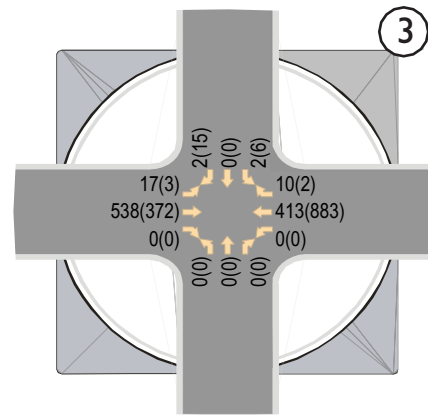
Figure 7: 2013 Background Traffic Volumes



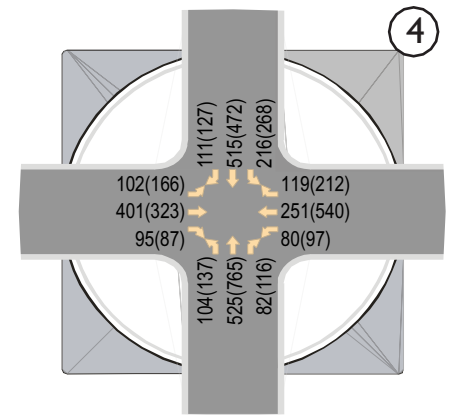
Van Buren Street/Bullard Avenue



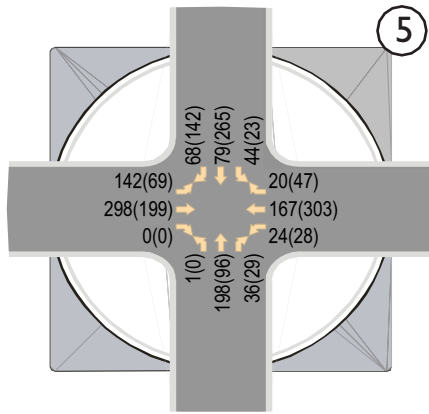
Van Buren Street/145th Avenue



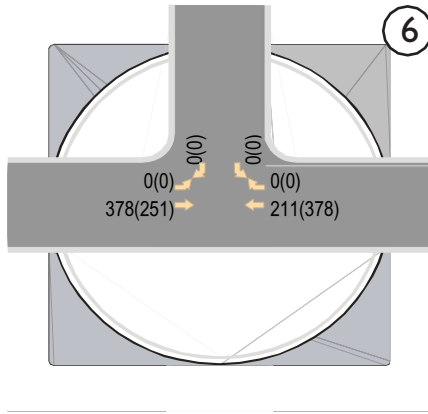
Van Buren Street/143rd Avenue



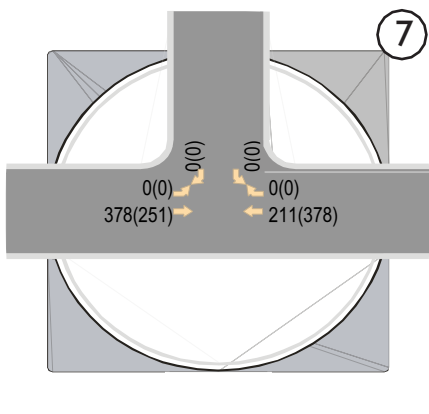
Van Buren Street/Litchfield Road



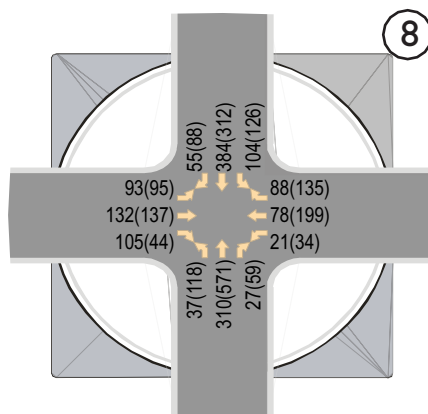
Yuma Road/Bullard Avenue



Yuma Road/143rd Avenue



Yuma Road/Access C



Yuma Road/Litchfield Road

LEGEND

XX(XX) - AM(PM) Peak Hour Traffic Volumes

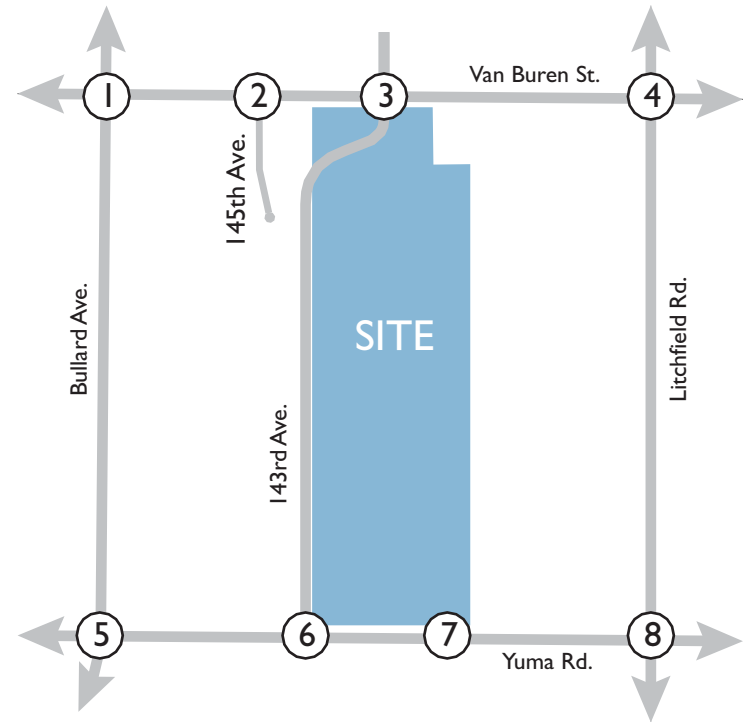
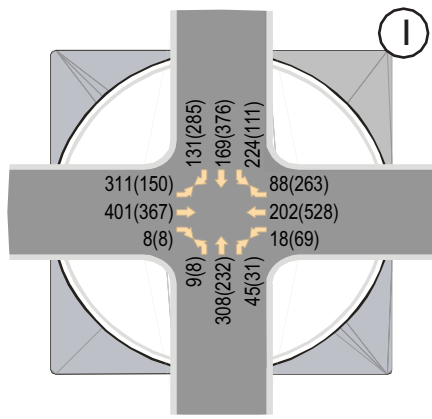
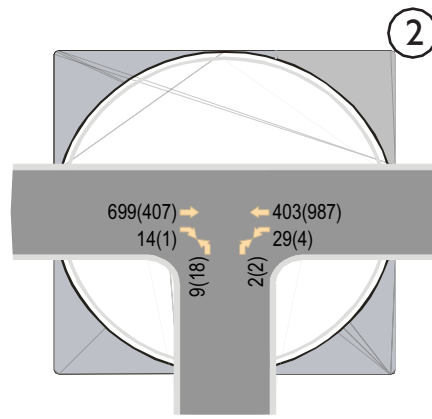


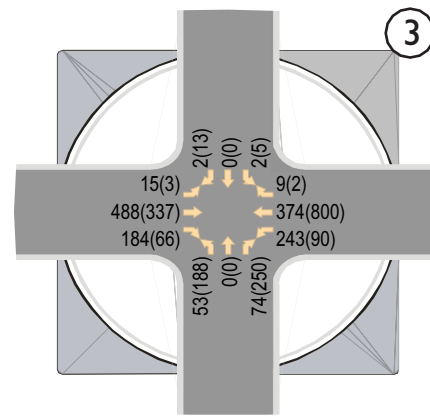
Figure 8: 2018 Background Traffic Volumes



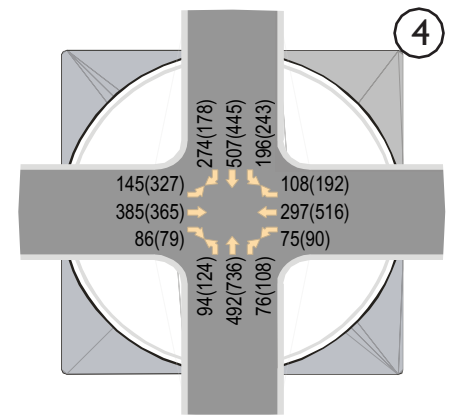
Van Buren Street/Bullard Avenue



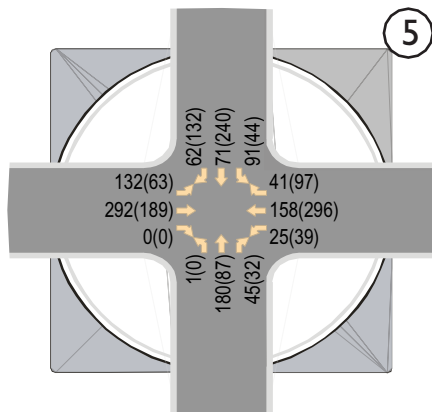
Van Buren Street/145th Avenue



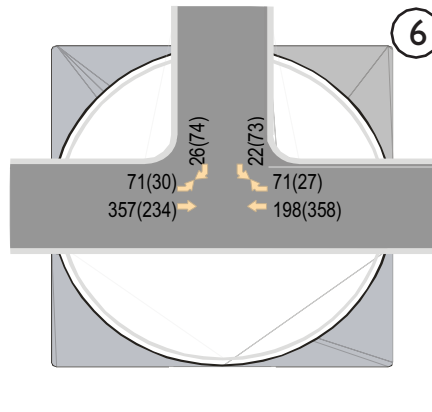
Van Buren Street/143rd Avenue



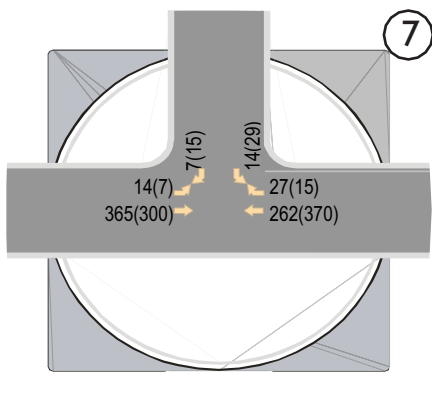
Van Buren Street/Litchfield Road



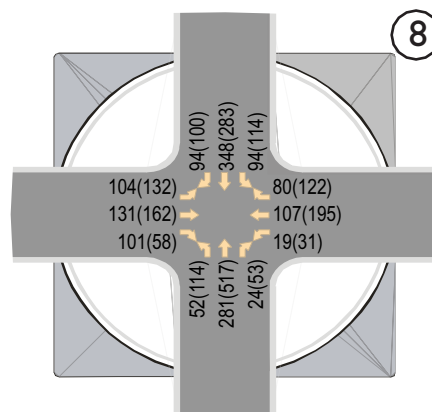
Yuma Road/Bullard Avenue



Yuma Road/143rd Avenue



Yuma Road/Access C



Yuma Road/Litchfield Road

LEGEND

XX(XX) - AM(PM) Peak Hour Traffic Volumes

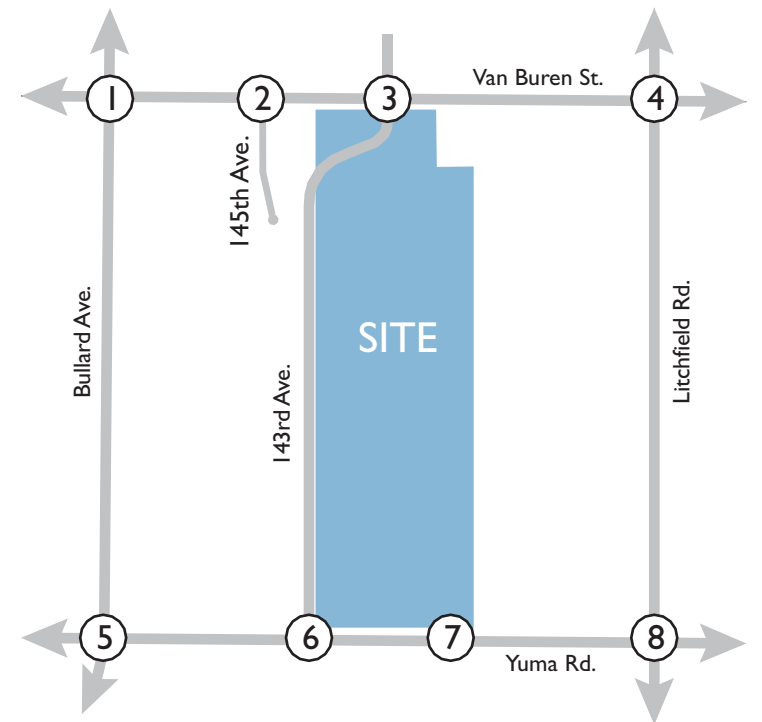
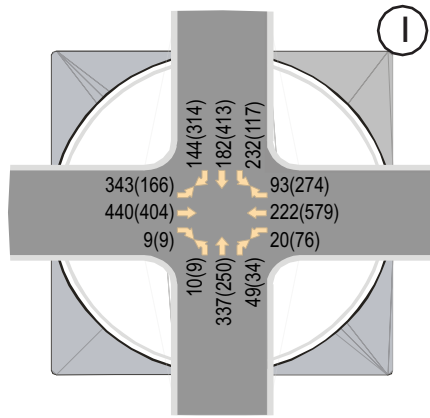
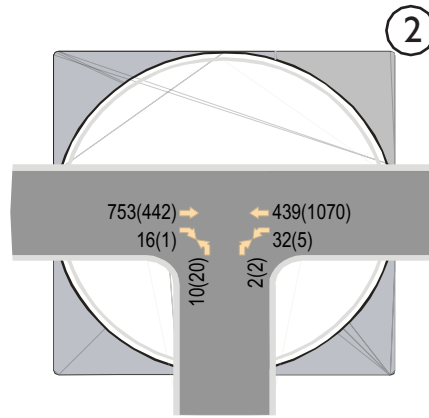


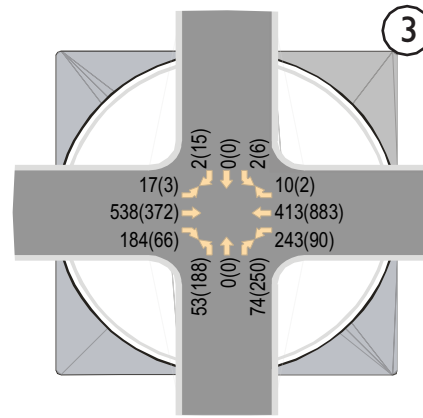
Figure 9: 2013 Total Traffic Volumes



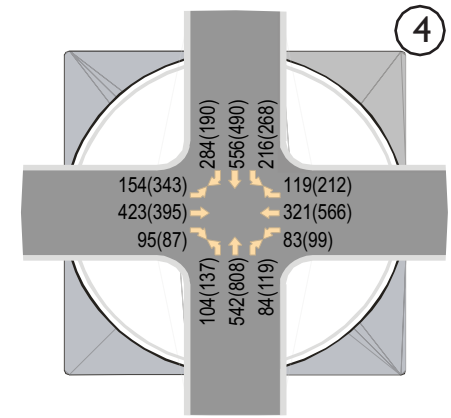
Van Buren Street/Bullard Avenue



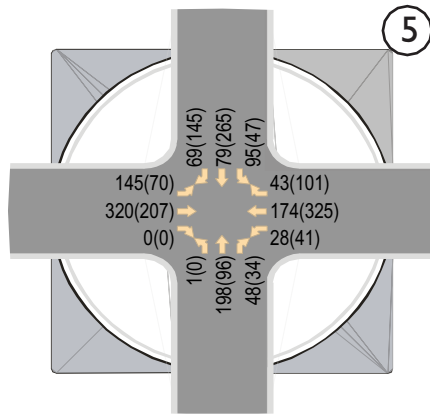
Van Buren Street/145th Avenue



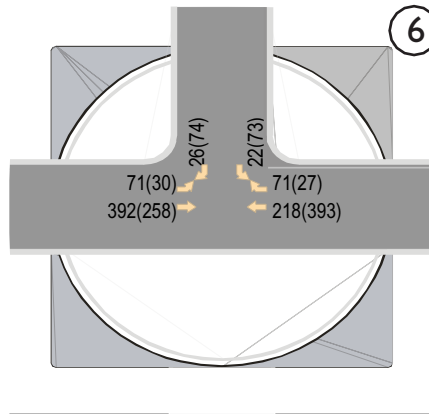
Van Buren Street/143rd Avenue



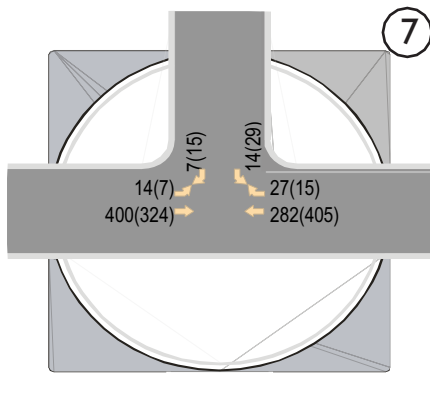
Van Buren Street/Litchfield Road



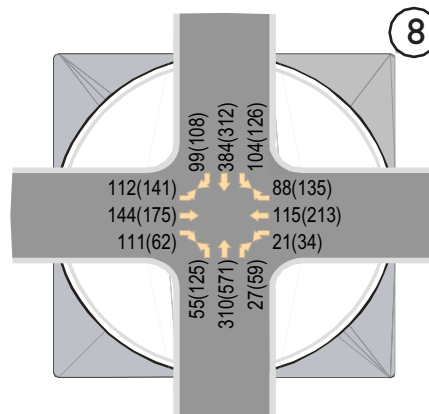
Yuma Road/Bullard Avenue



Yuma Road/143rd Avenue



Yuma Road/Access C



Yuma Road/Litchfield Road

LEGEND

XX(X) - AM(PM) Peak Hour Traffic Volumes

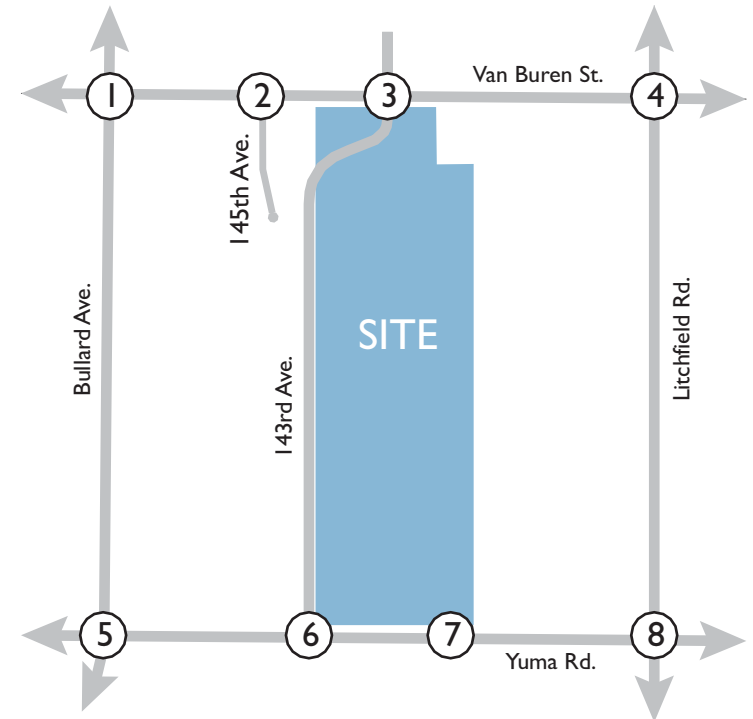
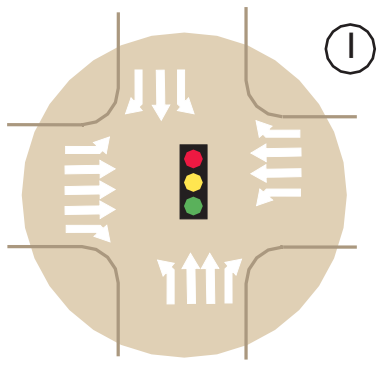
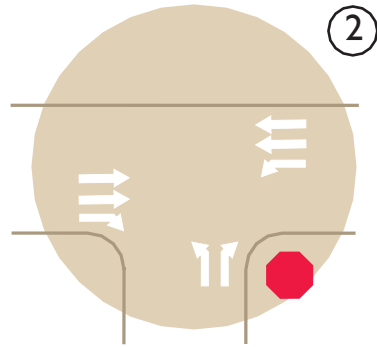


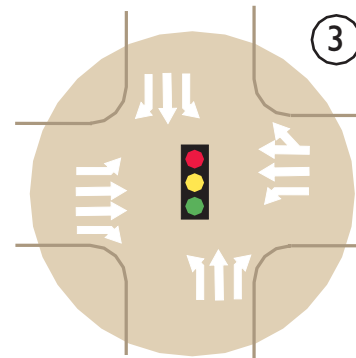
Figure 10: 2018 Total Traffic Volumes



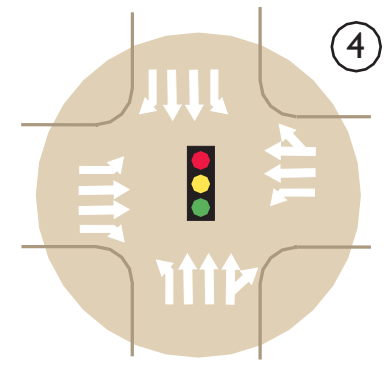
Bullard Ave. & Van Buren St.



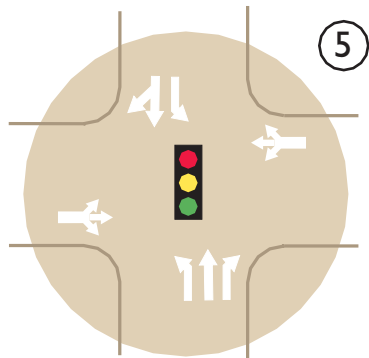
145th Ave. & Van Buren St.



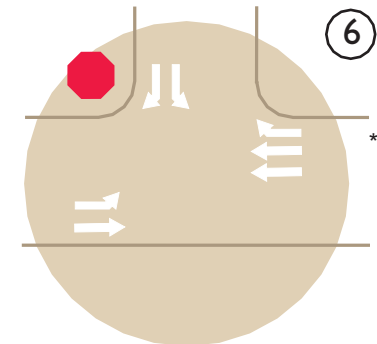
143rd Ave. & Van Buren St.



Litchfield Rd. & Van Buren St.

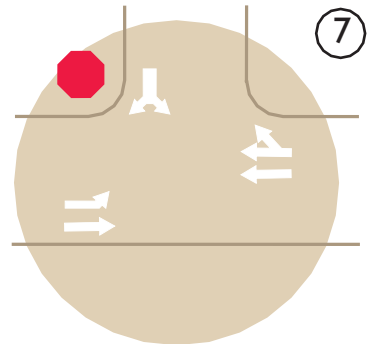


Yuma Rd. & Bullard Ave.

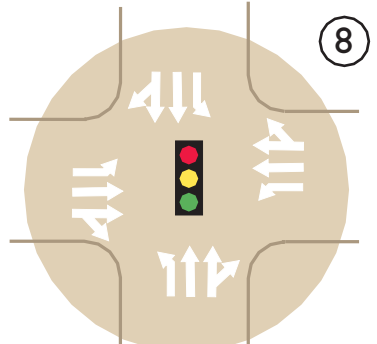


143rd Ave. & Yuma Rd.

* WB approach will be striped with only 1 thru and 1 right-turn lane until Yuma Rd. is widened to the west of the site.



Access C & Yuma Rd.



Yuma Rd. & Litchfield Rd.

LEGEND

- Thru or Turning Movement
- Traffic Signal
- Stop Sign

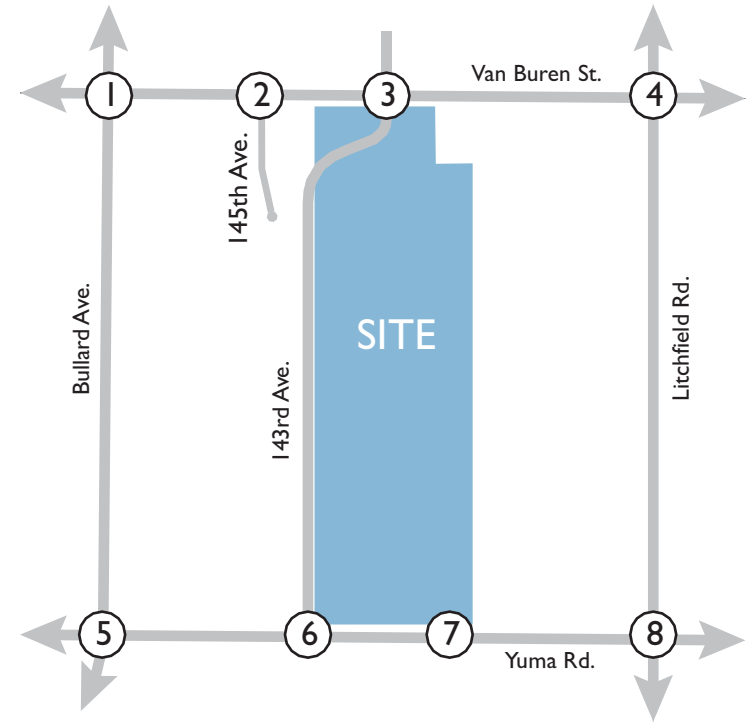


Figure 11: Proposed Lane Configurations and Stop Controls

Table 4: 2013 Peak Hour Levels of Service

Intersection	Traffic Control	Approach	Total Traffic LOS	
			AM Peak Hour	PM Peak Hour
Van Buren Street/143 rd Avenue	Signal	NB	D	B
		SB	D	B
		EB	A	B
		WB	A	B
		Overall	A	B
Van Buren Street/145 th Avenue	1-way stop (NB)	NB LT	C	C
		NB RT	B	A
		WB LT	A	A
Van Buren Street/Bullard Avenue	Signal	NB	C	C
		SB	B	C
		EB	B	C
		WB	D	C
		Overall	C	C
Van Buren Street/Litchfield Road	Signal	NB	C	D
		SB	C	C
		EB	C	C
		WB	C	D
		Overall	C	C
Yuma Road/Bullard Avenue	Signal	NB	C	B
		SB	C	C
		EB	A	B
		WB	A	B
		Overall	B	B
Yuma Road/Litchfield Road	Signal	NB	C	C
		SB	B	C
		EB	C	C
		WB	D	C
		Overall	C	C
Yuma Road/143 rd Avenue	1-way stop (SB)	SB LT	C	C
		SB RT	A	B
		EB LT	A	A
Yuma Road/Access Road	1-way stop (SB)	SB LT/RT	B	B
		EB LT	A	A

Under the future 2013 traffic conditions all of the movements at each study intersection are projected to continue to operate with level of service D or better.

The resulting 2018 levels of service for the study intersections are summarized in **Table 5** for the background volumes only and **Table 5** for the with site traffic volumes. The analyses have been included in **Appendix F**. The lane configurations provided on **Figure 11** were utilized for the intersection analyses.

Table 5: 2018 Peak Hour Levels of Service

Intersection	Traffic Control	Approach	Total Traffic LOS	
			AM Peak Hour	PM Peak Hour
Van Buren Street/143 rd Avenue	Signal	NB	D	B
		SB	D	B
		EB	A	B
		WB	A	B
		Overall	A	B
Van Buren Street/145 th Avenue	1-way stop (NB)	NB LT	C	C
		NB RT	B	A
		WB LT	A	A
Van Buren Street/Bullard Avenue	Signal	NB	C	C
		SB	B	C
		EB	B	C
		WB	D	C
		Overall	C	C
Van Buren Street/Litchfield Road	Signal	NB	C	D
		SB	C	C
		EB	C	C
		WB	C	D
		Overall	C	C
Yuma Road/Bullard Avenue	Signal	NB	C	B
		SB	C	B
		EB	A	B
		WB	A	B
		Overall	B	B
Yuma Road/Litchfield Road	Signal	NB	C	C
		SB	B	C
		EB	C	C
		WB	D	C
		Overall	C	C
Yuma Road/143 rd Avenue	1-way stop (SB)	SB LT	C	C
		SB RT	A	B
		EB LT	A	A
Yuma Road/Access Road	1-way stop (SB)	SB LT/RT	B	B
		EB LT	A	A

Under the future 2018 conditions with the site traffic the movements at each study intersection are projected to continue to operate with level of service D or better. The analyses have been included in **Appendix G**. The lane configurations provided on **Figure 11** were utilized for the intersection analyses.

ROADWAY ANALYSIS

As shown in **Table 3 – Project Generated Trips**, the Beck Property Development is projected to generate approximately 9,870 daily trips. 143rd Avenue will provide the primary access for the development. A 3-lane collector roadway can adequately accommodate up to 10,000 daily vehicles; therefore it is suggested that a 3-lane collector roadway be provided for 143rd Avenue from Van Buren Street south to Yuma Road.

QUEUE LENGTH ANALYSIS

Queuing analyses were performed for the left and right turn lanes at the Van Buren Street/143rd Avenue intersection and the Yuma Road/143rd Avenue intersection. The City of Goodyear currently does not have queuing criteria but follows Maricopa County Department of Transportation (MCDOT) criteria. A queuing analysis was performed, according to the methodology documented in the *MCDOT Traffic Impact Procedures*. The formulas used for the calculations are stated below. The study area intersections were analyzed to determine the queue length needed to accommodate the expected traffic volumes in the horizon years 2013 and 2018.

For signal controlled intersections:

$$\text{Queue Length} = [2 \times (\text{vehicles/hour})/(\text{cycles/hour})] \times 25 \text{ feet/vehicle}$$

For unsignalized intersections:

$$\text{Queue Length} = [(\text{vehicles/hour})/(30 \text{ periods/hour})] \times 25 \text{ feet/vehicle}$$

The City of Goodyear requires a minimum 250 feet storage length for turn lanes on arterial roadways and a minimum 150 feet storage length for collector roadway intersections that are signalized. A minimum of 75 feet of storage is required on collector roadways at unsignalized intersections. All turn lanes should be between 10 and 12 feet in width and have a minimum taper length of approximately 180 feet.

The calculated queue length requirements for the movements with site traffic are summarized in **Table 6**. The queue length calculations are provided in **Appendix H**.

Table 6: Van Buren Street/143rd Avenue Storage Lengths

Intersection	Movement	Storage Length (feet)		
		Existing ⁽¹⁾	Calculated	Recommended
Van Buren Street/143 rd Avenue	EB LT	150'	25'	150' ⁽²⁾
	EB RT	-'	250'	250'
	WB LT	100'	325'	100' ⁽³⁾
	NB LT	-'	250'	150' ⁽⁴⁾
	NB RT	-'	325'	150'
	SB RT	140'	25'	140' ⁽²⁾
	SB LT	330'	25'	330' ⁽²⁾
Van Buren Street/Bullard Avenue	WB RT	260'	350'	250' ⁽⁵⁾
	SB LT	260'	300'	250' ⁽⁶⁾
Van Buren Street/Litchfield Road	EB LT	125'	450'	300' ⁽⁸⁾
	SB RT	>400' ⁽⁷⁾	375'	375' ⁽⁹⁾
Yuma Road/Bullard Avenue	SB LT	160'	125'	125' ⁽²⁾
Yuma Road/Litchfield Road	NB LT	160'	175'	160' ⁽¹⁰⁾
	EB LT	100'	200'	200' ⁽¹¹⁾
Yuma Road/143 rd Avenue	SB LT	-'	75'	150'
	SB RT	-'	75'	150'
	EB LT	-'	75'	150'
Yuma Road/Access Road	EB LT	-'	25'	150'

- (1) Measured from stop bar.
- (2) Existing queue storage exceeds calculated queue storage length and is sufficient.
- (3) Providing longer than the existing storage would require modifications to the existing median which would impact the storage for the median break to the east.
- (4) The geometrics for the northbound 143rd Avenue approach to Van Buren Street restrict the ability to construct a longer northbound left turn lane.
- (5) The Van Buren/Bullard traffic signal phasing could be modified to add a westbound right turn overlap to reduce the possible right turn lane queuing.
- (6) The existing southbound left turn striping approaching Van Buren Street could be modified to provide dual left turn lanes. This would also require modifications to the traffic signal to convert the permissive/protected left turn phasing to protected left turn phasing only, which also supports the westbound right turn overlap.
- (7) The southbound Litchfield Road right turn lane at Van Buren Street is an actual trap lane and has an available striped storage length over 500'.
- (8) The eastbound approach to Litchfield Road currently has a striped two-way left turn lane. The striping could be modified to change the existing eastbound left turn storage from 125 feet to 300 feet. Any additional required storage could use the striped two-way left turn lane.
- (9) Adequate storage is available in the existing southbound right turn lane.
- (10) Providing longer than the existing storage would require modifications to the existing median which would impact the storage for the median break to the south.
- (11) The eastbound approach to Litchfield Road currently has a striped two-way left turn lane. The striping could be modified to change the existing eastbound left turn storage from 100 feet to 200 feet. Any additional required storage could use the striped two-way left turn lane.
- (12) Recommend minimum of 75 feet

The minimum storage lengths for the northbound approach to the 143rd Avenue intersection with Van Buren Street, as well as the southbound and eastbound approaches to the Yuma Road/143rd Avenue intersection should be constructed to the recommended distances provided in **Table 6**.

Some striping modifications may be required at the Van Buren Street/Bullard Avenue intersection (provide dual southbound left turn lanes), the Van Buren Street/Litchfield Road intersection (provide a longer eastbound left turn lane storage), and the Yuma Road/ Litchfield Road intersection (provide a longer eastbound left turn lane storage).

CONCLUSIONS AND RECOMMENDATIONS

The following conclusions and recommendations have been documented in this study.

- ◆ Under the existing conditions all of the movements at the Van Buren Street intersections – 143rd Avenue, 145th Avenue, Bullard Avenue and Litchfield Road – and the Yuma Road intersections – Bullard Avenue and Litchfield Road – are projected to operate with level of service D or better in the peak hours.
- ◆ The proposed Beck Property Development with 2,432,000 square feet of Warehouse and 838,000 square feet of High-cube Warehouse land uses within four large buildings is anticipated to generate 9,870 daily trips, with approximately 810 trips occurring during the AM peak hour and 865 trips occurring during the PM peak hour.
- ◆ Under the future 2013 traffic conditions all of the movements at each study intersection are projected to continue to operate with level of service D or better.
- ◆ Under the future 2018 traffic conditions all of the movements at each study intersection are projected to continue to operate with level of service D or better.
- ◆ The calculated storage lengths in Table 6 should be provided where possible. Existing median breaks and left turn lanes in existing medians may prohibit the construction of the calculated storage lengths.
- ◆ A 3-lane collector roadway should be provided for 143rd Avenue from Van Buren Street south to the development.
- ◆ Striping modifications may be required at the Van Buren Street/Bullard Avenue intersection (provide dual southbound left turn lanes) as well as traffic signal modifications (provided a protected southbound left turn phase and a westbound right turn overlap phase).
- ◆ Striping modifications may be required at the Van Buren Street/Litchfield Road intersection (provide a longer eastbound left turn lane storage).
- ◆ Striping modifications may be required at the Yuma Road/Litchfield Road intersection (provide a longer eastbound left turn lane storage).
- ◆ A traffic signal should be installed at the intersection of Van Buren Street and 143rd Avenue to provide acceptable levels of service for the northbound and southbound movements.

LIST OF REFERENCES

A Policy on Geometric Design of Highways and Streets. American Association of State Highway and Transportation Officials, Washington, D.C., 2001.

Design Standards & Policies Manual. City of Goodyear, Goodyear, Arizona, July 2006.

Highway Capacity Manual. Transportation Research Board, Washington, D.C., 2000.

Manual on Uniform Traffic Control Devices. U.S. Department of Transportation, Federal Highways Administration, Washington, D.C., 2003.

NPTS Urban Travel Patterns Report. December 1999.

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

Trip Generation Handbook, 2nd Edition, Institute of Transportation Engineers, Washington, D.C., 2004.

TECHNICAL APPENDIX

APPENDIX A:	REVIEW COMMENTS RESPONSES
APPENDIX B:	EXISTING TRAFFIC COUNTS
APPENDIX C:	EXISTING PEAK HOUR CAPACITY ANALYSIS
APPENDIX D:	TRIP GENERATION
APPENDIX E:	GROWTH RATE CALCULATIONS
APPENDIX F:	2013 PEAK HOUR ANALYSIS
APPENDIX G:	2018 PEAK HOUR ANALYSIS
APPENDIX H:	QUEUE LENGTH ANALYSIS

APPENDIX A

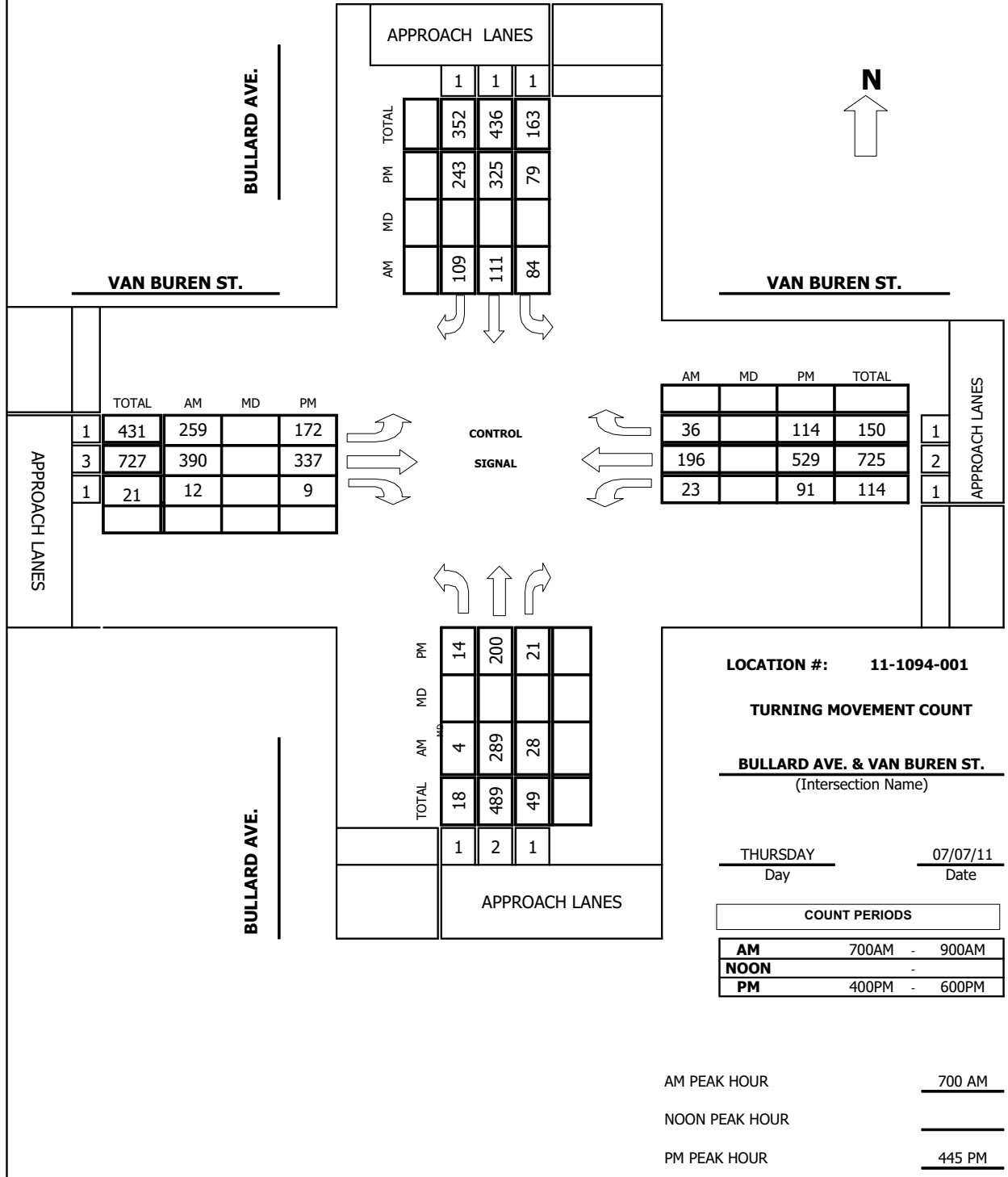
REVIEW COMMENTS AND RESPONSES

APPENDIX B

EXISTING TRAFFIC COUNTS

Project #: 11-1094-001

TMC SUMMARY OF BULLARD AVE. & VAN BUREN ST.

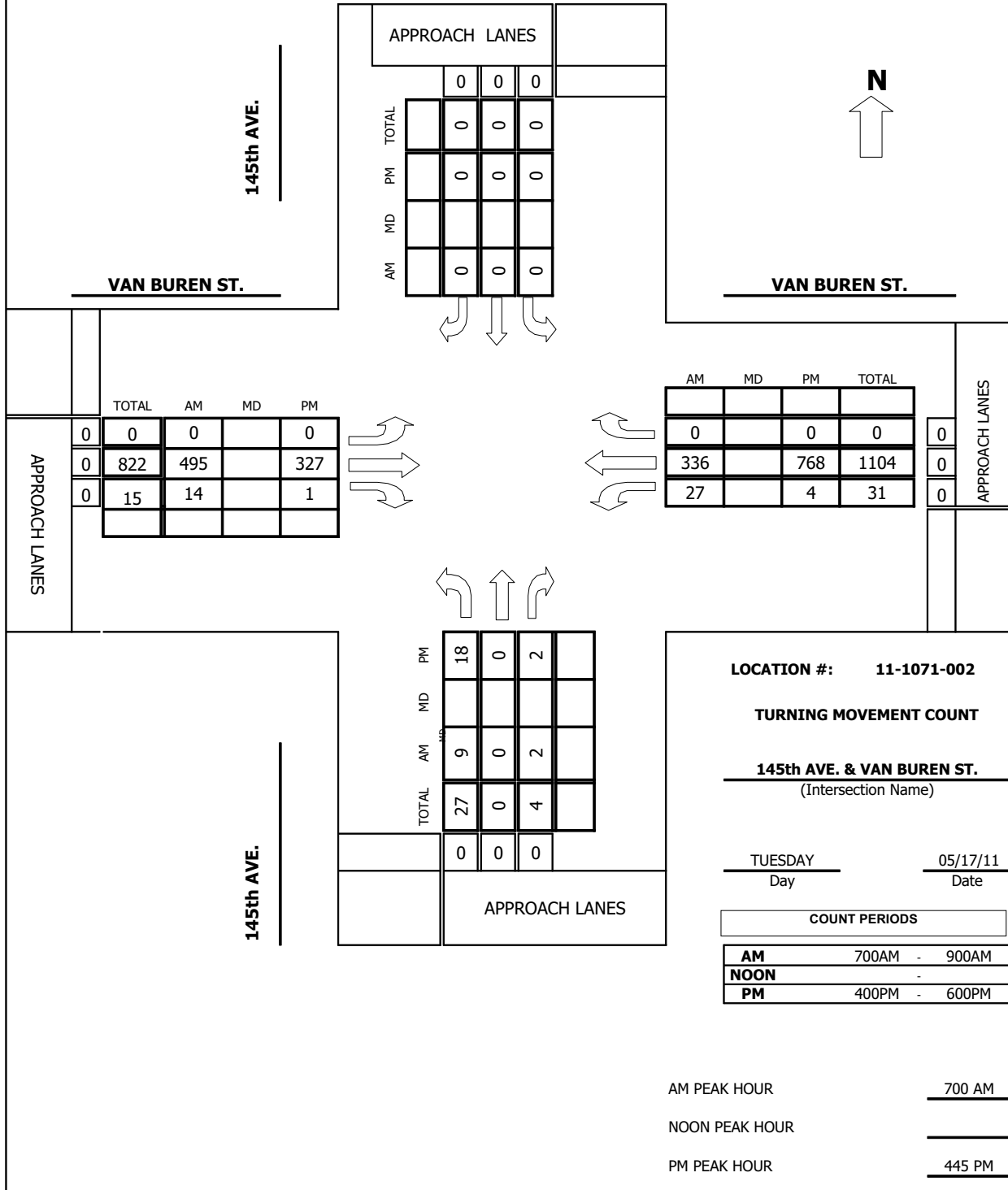


Intersection Turning Movement
Prepared by:



Project #: 11-1071-002

TMC SUMMARY OF 145th AVE. & VAN BUREN ST.

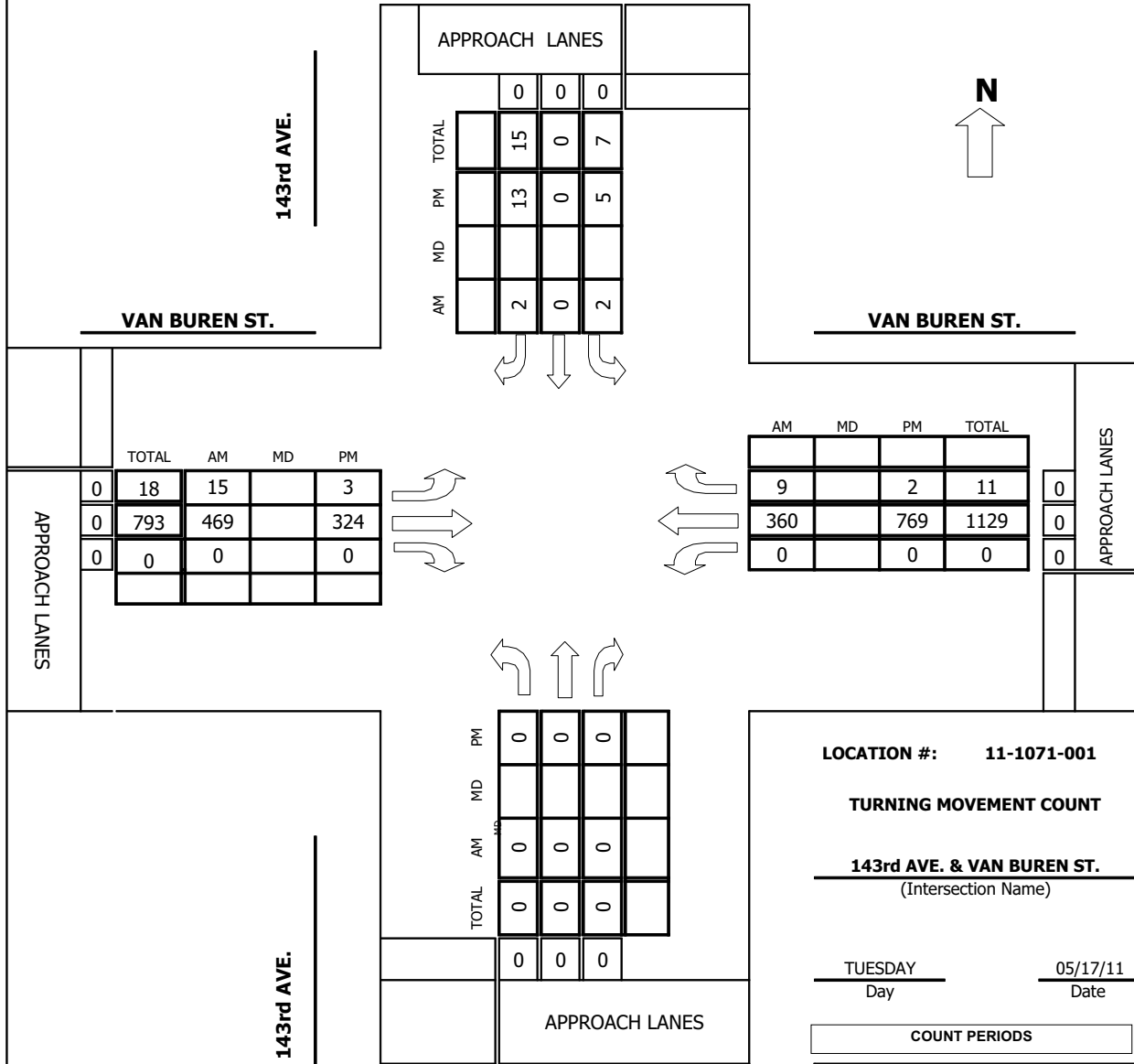


Intersection Turning Movement
Prepared by:



Project #: 11-1071-001

TMC SUMMARY OF 143rd AVE. & VAN BUREN ST.



LOCATION #: 11-1071-001

TURNING MOVEMENT COUNT

143rd AVE. & VAN BUREN ST.
(Intersection Name)

TUESDAY 05/17/11
Day Date

COUNT PERIODS

AM	700AM	-	900AM
NOON		-	
PM	400PM	-	600PM

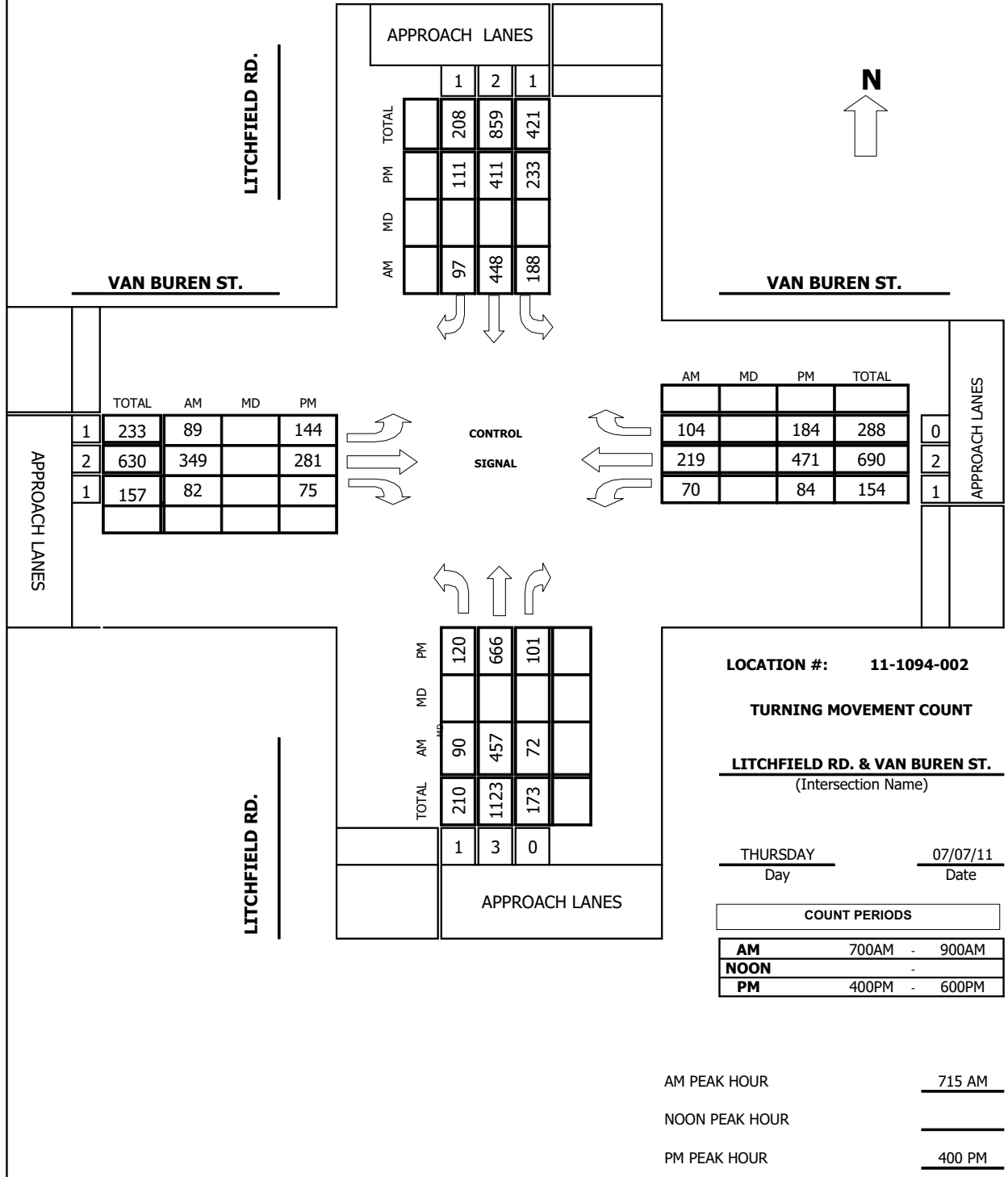
AM PEAK HOUR 715 AM

NOON PEAK HOUR _____

PM PEAK HOUR 445 PM

Project #: 11-1094-002

TMC SUMMARY OF LITCHFIELD RD. & VAN BUREN ST.

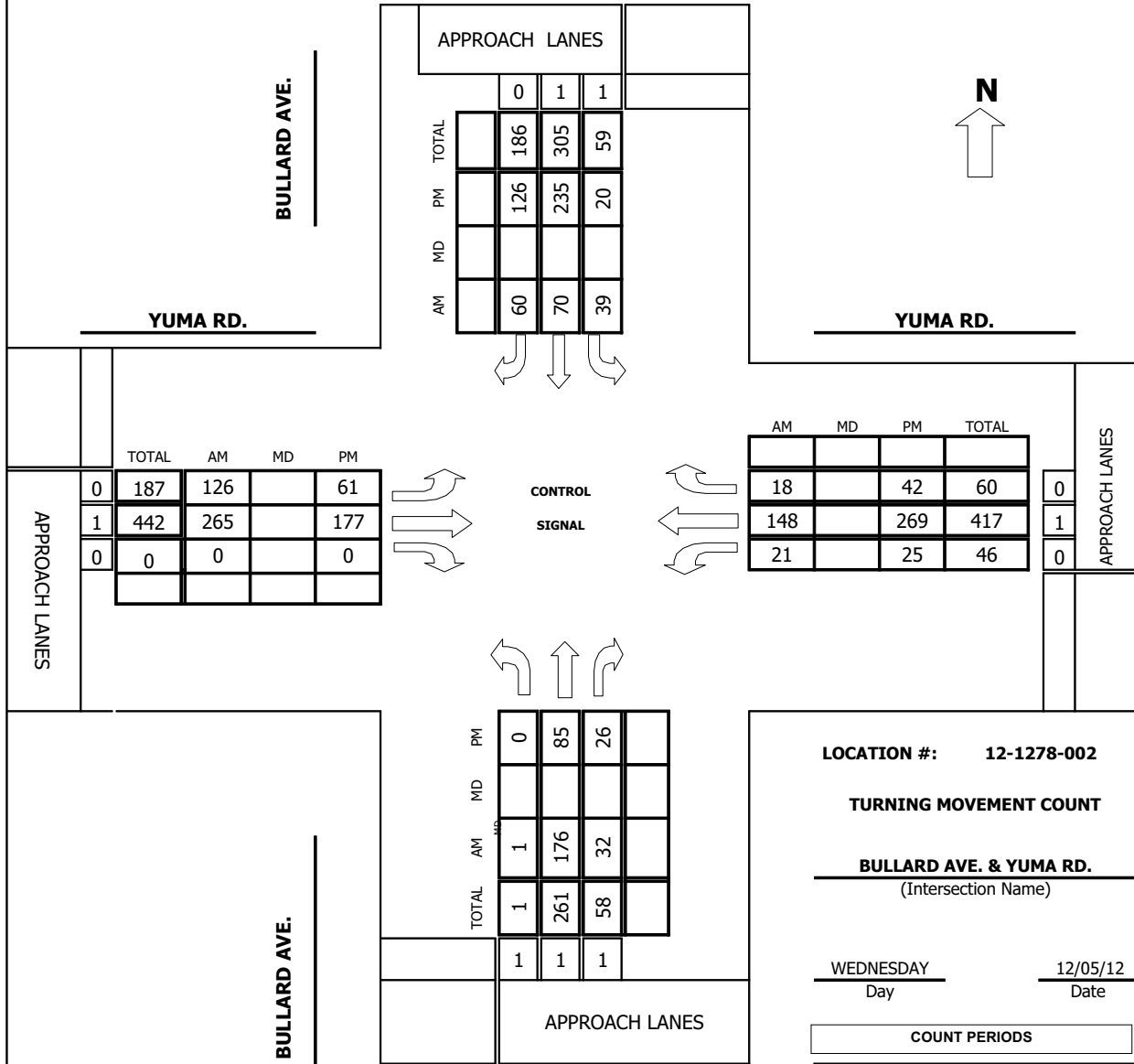


**Intersection Turning Movement
Prepared by:**



Project #: 12-1278-002

TMC SUMMARY OF BULLARD AVE. & YUMA RD.



LOCATION #: 12-1278-002

TURNING MOVEMENT COUNT

BULLARD AVE. & YUMA RD.
(Intersection Name)

WEDNESDAY
Day

12/05/12
Date

COUNT PERIODS

AM	700AM	-	900AM
NOON		-	
PM	400PM	-	600PM

AM PEAK HOUR 700 AM

NOON PEAK HOUR _____

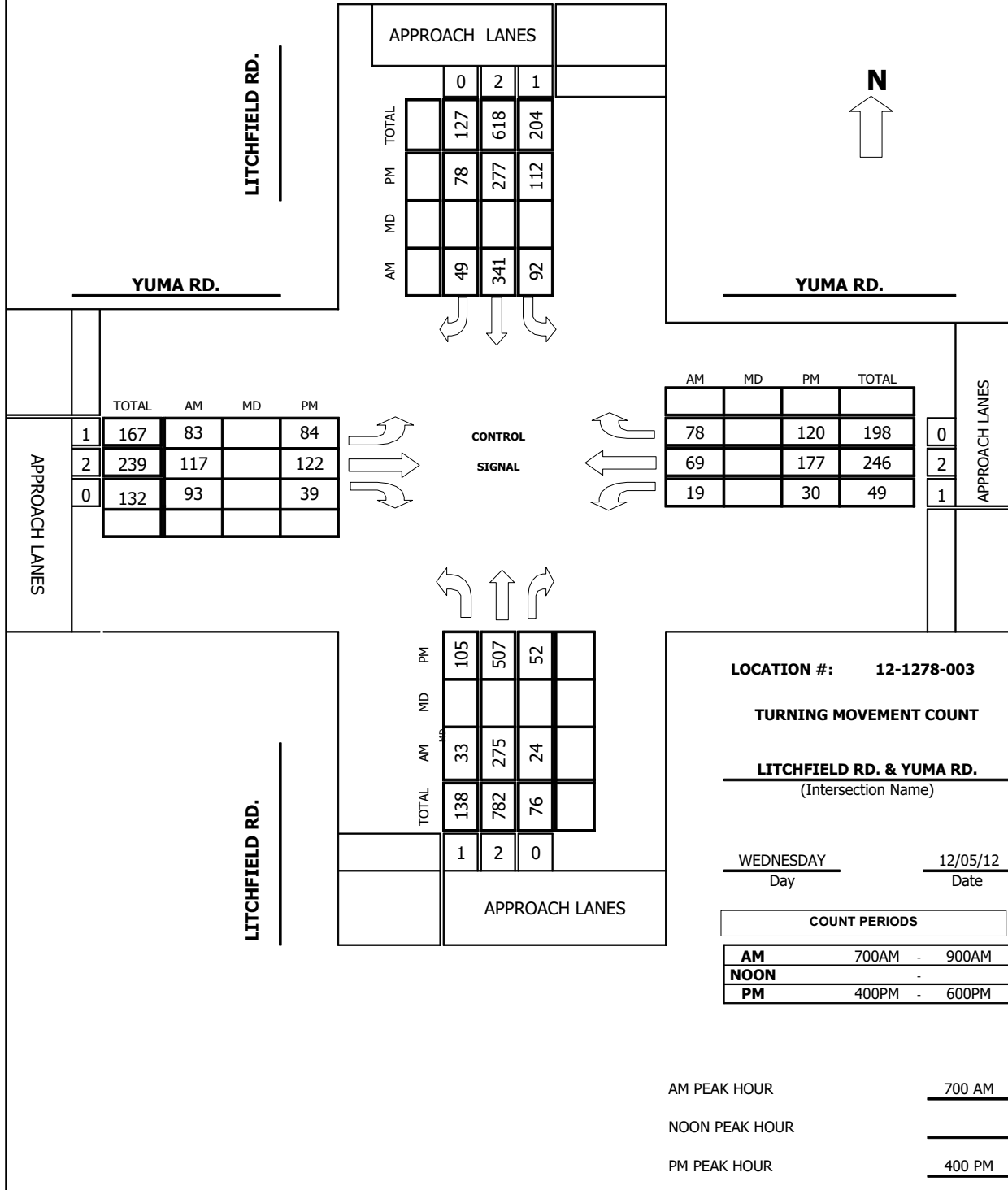
PM PEAK HOUR 430 PM

**Intersection Turning Movement
Prepared by:**



Project #: 12-1278-003

TMC SUMMARY OF LITCHFIELD RD. & YUMA RD.



APPENDIX C

EXISTING PEAK HOUR CAPACITY ANALYSIS

Beck Property TIA, Goodyear AZ
AM Peak Hour
2012 AM - Existing

Scenario Report

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

Beck Property TIA, Goodyear AZ
AM Peak Hour
2012 AM - Existing

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

Intersection #1 Bullard Ave & Van Buren St

Cycle (sec): 90 Critical Vol./Cap. (X): 0.411
Loss Time (sec): 12 Average Delay (sec/veh): 21.8
Optimal Cycle: 35 Level Of Service: C

Table with columns for Street Name (Bullard Ave, Van Buren St), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Prot+Permit), Rights (Include), and various timing parameters like Min. Green, Y+R, and Lanes.

Volume Module: Table showing traffic volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume across different movements.

Saturation Flow Module: Table showing saturation flow data including Sat/Lane, Adjustment, Lanes, and Final Sat for each movement.

Capacity Analysis Module: Table showing capacity analysis data including Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ for each movement.

Beck Property TIA, Goodyear AZ
AM Peak Hour
2012 AM - Existing

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

Beck Property TIA, Goodyear AZ
AM Peak Hour
2012 AM - Existing

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 145th St & Van Buren St

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: B[15.0]

Table with columns for Street Name, Approach, Movement, Control, Rights, Lanes. Rows include 145th St and Van Buren St with various traffic configurations.

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, FinalVolume.

Critical Gap Module table with columns for Critical Gp, FollowUpTim.

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

Level Of Service Module table with columns for 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.

Beck Property TIA, Goodyear AZ
 AM Peak Hour
 2012 AM - Existing

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #3 143rd St & Van Buren St

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: B[11.9]

Street Name:	143rd St					Van Buren St									
Approach:	North Bound			South Bound			East Bound			West Bound					
Movement:	L	T	R	L	T	R	L	T	R	L	T	R			
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled					
Rights:	Include			Include			Include			Include					
Lanes:	1	0	1	0	1	1	0	1	0	1	1	0	1	1	0

Volume Module:

Base Vol:	0	0	0	2	0	2	15	478	0	0	0	367	9
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	1.00
Initial Bse:	0	0	0	2	0	2	15	478	0	0	0	367	9
Added Vol:	0	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	0
Initial Fut:	0	0	0	2	0	2	15	478	0	0	0	367	9
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	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	0	0	2	0	2	16	503	0	0	0	386	9
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	2	0	2	16	503	0	0	0	386	9

Critical Gap Module:

Critical Gp:	7.5	6.5	6.9	6.8	6.5	6.9	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflict Vol:	728	931	252	674	926	198	396	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	315	269	754	392	271	816	1174	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	311	265	754	388	267	816	1174	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	0.00	0.00	0.00	0.01	0.00	0.00	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	14.3	xxxx	9.4	8.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx			
LOS by Move:	*	*	*	B	*	A	A	*	*	*	*	*			
Movement:	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			11.9			xxxxxx			xxxxxx					
ApproachLOS:	*			B			*			*					

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

Beck Property TIA, Goodyear AZ
AM Peak Hour
2012 AM - Existing

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

Intersection #4 Litchfield Rd & Van Buren St

Cycle (sec): 90 Critical Vol./Cap. (X): 0.435
Loss Time (sec): 12 Average Delay (sec/veh): 24.2
Optimal Cycle: 37 Level Of Service: C

Table with columns for Street Name (Litchfield Rd, Van Buren St), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Prot+Permit), Rights (Include), and various timing parameters like Min. Green, Y+R, and Lanes.

Volume Module: Table showing traffic volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume across different movements.

Saturation Flow Module: Table showing saturation flow data including Sat/Lane, Adjustment, Lanes, and Final Sat. for each movement.

Capacity Analysis Module: Table showing capacity analysis data including Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ for each movement.

Beck Property TIA, Goodyear AZ
AM Peak Hour
2012 AM - Existing

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

Beck Property TIA, Goodyear AZ
AM Peak Hour
2012 AM - Existing

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

Intersection #5 Bullard Ave & Yuma Rd

Cycle (sec): 90 Critical Vol./Cap. (X): 0.382
Loss Time (sec): 6 Average Delay (sec/veh): 14.6
Optimal Cycle: 22 Level Of Service: B

Table with columns for Street Name (Bullard Ave, Yuma Rd), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Permitted), Rights (Include), and various timing parameters like Min. Green, Y+R, and Lanes.

Volume Module: Table showing traffic volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module: Table showing saturation flow data including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table showing capacity analysis data including Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Beck Property TIA, Goodyear AZ
AM Peak Hour
2012 AM - Existing

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

Beck Property TIA, Goodyear AZ
AM Peak Hour
2012 AM - Existing

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

Intersection #8 Litchfield Rd & Yuma Rd

Cycle (sec): 90 Critical Vol./Cap. (X): 0.353
Loss Time (sec): 12 Average Delay (sec/veh): 19.9
Optimal Cycle: 33 Level Of Service: B

Table with columns for Street Name (Litchfield Rd, Yuma Rd), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Prot+Permit), Rights (Include), and various timing parameters like Min. Green, Y+R, and Lanes.

Volume Module: Table showing traffic volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume across different movements.

Saturation Flow Module: Table showing saturation flow data including Sat/Lane, Adjustment, Lanes, and Final Sat. for each movement.

Capacity Analysis Module: Table showing capacity analysis data including Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ for each movement.

Beck Property TIA, Goodyear AZ
AM Peak Hour
2012 AM - Existing

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

Beck Property TIA, Goodyear AZ
PM Peak Hour
2012 PM - Existing

Scenario Report

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

Beck Property TIA, Goodyear AZ
PM Peak Hour
2012 PM - Existing

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

Intersection #1 Bullard Ave & Van Buren St

Cycle (sec): 90 Critical Vol./Cap. (X): 0.489
Loss Time (sec): 12 Average Delay (sec/veh): 22.7
Optimal Cycle: 40 Level Of Service: C

Table with columns for Street Name (Bullard Ave, Van Buren St), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Prot+Permit), Rights (Include), and various timing parameters like Min. Green, Y+R, and Lanes.

Volume Module: Table showing traffic volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume across different movements.

Saturation Flow Module: Table showing saturation flow data including Sat/Lane, Adjustment, Lanes, and Final Sat for each movement.

Capacity Analysis Module: Table showing capacity analysis data including Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ for each movement.

Beck Property TIA, Goodyear AZ
PM Peak Hour
2012 PM - Existing

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

Beck Property TIA, Goodyear AZ
PM Peak Hour
2012 PM - Existing

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 145th St & Van Buren St

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: C[15.5]

Table with columns for Street Name, Approach, Movement, Control, Rights, and Lanes. Rows include 145th St and Van Buren St with various traffic configurations.

Volume Module:

Table showing traffic volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and FinalVolume.

Critical Gap Module:

Table showing critical gap and follow-up time data for different traffic movements.

Capacity Module:

Table showing capacity data including Conflict Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module:

Table showing level of service data including 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

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

Beck Property TIA, Goodyear AZ
 PM Peak Hour
 2012 PM - Existing

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #3 143rd St & Van Buren St

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: B[13.7]

Street Name:	143rd St					Van Buren St						
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	1	0	1	0	1	0	1	0	1	1	0	1

Volume Module:	143rd St NB			143rd St SB			Van Buren St EB			Van Buren St WB		
Base Vol:	0	0	0	5	0	13	3	330	0	0	784	2
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:	0	0	0	5	0	13	3	330	0	0	784	2
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:	0	0	0	5	0	13	3	330	0	0	784	2
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	0	0	5	0	14	3	347	0	0	825	2
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	5	0	14	3	347	0	0	825	2

Critical Gap Module:	143rd St NB			143rd St SB			Van Buren St EB			Van Buren St WB		
Critical Gp:	7.5	6.5	6.9	6.8	6.5	6.9	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx

Capacity Module:	143rd St NB			143rd St SB			Van Buren St EB			Van Buren St WB		
Cnflict Vol:	766	1181	174	1006	1180	414	827	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	296	192	846	241	192	593	813	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	288	191	846	240	191	593	813	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	0.00	0.00	0.00	0.02	0.00	0.02	0.00	xxxx	xxxx	xxxx	xxxx	xxxx

Level Of Service Module:	143rd St NB			143rd St SB			Van Buren St EB			Van Buren St WB		
2Way95thQ:	xxxx	xxxx	xxxxx	0.1	xxxx	0.1	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	20.3	xxxx	11.2	9.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	C	*	B	A	*	*	*	*	*
Movement:	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	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			13.7			xxxxxx			xxxxxx		
ApproachLOS:	*			B			*			*		

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

Beck Property TIA, Goodyear AZ
PM Peak Hour
2012 PM - Existing

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

Intersection #4 Litchfield Rd & Van Buren St

Cycle (sec): 90 Critical Vol./Cap. (X): 0.681
Loss Time (sec): 12 Average Delay (sec/veh): 27.1
Optimal Cycle: 56 Level Of Service: C

Street Name: Litchfield Rd Van Buren St

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Prot+Permit Prot+Permit Prot+Permit Prot+Permit
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0
Lanes: 1 0 2 1 0 1 0 2 0 1 1 0 1 1 0

Volume Module:

Base Vol: 122 679 103 238 419 113 147 287 77 86 480 188
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: 122 679 103 238 419 113 147 287 77 86 480 188
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: 122 679 103 238 419 113 147 287 77 86 480 188
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: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 128 715 108 251 441 119 155 302 81 91 505 198
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 128 715 108 251 441 119 155 302 81 91 505 198
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: 128 715 108 251 441 119 155 302 81 91 505 198

Saturation Flow Module:

Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.95 0.89 0.89 0.95 0.95 0.85 0.95 0.95 0.85 0.95 0.91 0.91
Lanes: 1.00 2.60 0.40 1.00 2.00 1.00 1.00 2.00 1.00 1.00 1.44 0.56
Final Sat.: 1805 4414 670 1805 3610 1615 1805 3610 1615 1805 2485 973

Capacity Analysis Module:

Vol/Sat: 0.07 0.16 0.16 0.14 0.12 0.07 0.09 0.08 0.05 0.05 0.20 0.20
Crit Moves: **** **** ****
Green/Cycle: 0.40 0.24 0.24 0.48 0.28 0.28 0.39 0.27 0.27 0.46 0.30 0.30
Volume/Cap: 0.27 0.68 0.68 0.55 0.44 0.26 0.46 0.32 0.19 0.17 0.68 0.68
Delay/Veh: 17.8 32.8 32.8 17.4 26.9 25.5 20.0 26.7 25.8 14.3 29.6 29.6
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: 17.8 32.8 32.8 17.4 26.9 25.5 20.0 26.7 25.8 14.3 29.6 29.6
LOS by Move: B C C B C C B C C B C C
HCM2kAvgQ: 2 8 8 6 6 3 3 3 2 2 10 10

Beck Property TIA, Goodyear AZ
PM Peak Hour
2012 PM - Existing

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

Beck Property TIA, Goodyear AZ
PM Peak Hour
2012 PM - Existing

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

Intersection #5 Bullard Ave & Yuma Rd

Cycle (sec): 90 Critical Vol./Cap. (X): 0.436
Loss Time (sec): 6 Average Delay (sec/veh): 15.9
Optimal Cycle: 24 Level Of Service: B

Table with columns for Street Name (Bullard Ave, Yuma Rd), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Permitted), Rights (Include), and various timing parameters like Min. Green, Y+R, and Lanes.

Volume Module: Table showing traffic volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume across different movements.

Saturation Flow Module: Table showing saturation flow data including Sat/Lane, Adjustment, Lanes, and Final Sat for each movement.

Capacity Analysis Module: Table showing capacity analysis data including Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ for each movement.

Beck Property TIA, Goodyear AZ
PM Peak Hour
2012 PM - Existing

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

Beck Property TIA, Goodyear AZ
PM Peak Hour
2012 PM - Existing

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

Intersection #8 Litchfield Rd & Yuma Rd

Cycle (sec): 90 Critical Vol./Cap. (X): 0.429
Loss Time (sec): 12 Average Delay (sec/veh): 21.6
Optimal Cycle: 36 Level Of Service: C

Table with columns for Street Name (Litchfield Rd, Yuma Rd), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Prot+Permit), Rights (Include), and various timing parameters like Min. Green, Y+R, and Lanes.

Volume Module: Table showing traffic volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume across different movements.

Saturation Flow Module: Table showing saturation flow data including Sat/Lane, Adjustment, Lanes, and Final Sat. for various movements.

Capacity Analysis Module: Table showing capacity analysis data including Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ for various movements.

Beck Property TIA, Goodyear AZ
PM Peak Hour
2012 PM - Existing

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

APPENDIX D

TRIP GENERATION

Proposed Use	ITE LUC	ITE Land Use Name	Total	Units	AM Distribution		PM Distribution	
					In	Out	In	Out
High-Cube Warehouse	152	High-Cube Warehouse	838.0	KSF	79%	21%	25%	75%
Warehousing	150	Warehousing	918.0	KSF	79%	21%	25%	75%
Warehousing	150	Warehousing	837.0	KSF	79%	21%	25%	75%
High-Cube Warehouse	152	High-Cube Warehouse	677.0	KSF	65%	35%	33%	67%

Proposed Use	ADT		AM Peak Hour			PM Peak Hour				
	Avg Rate	Total	Avg Rate	Total	In	Out	Avg Rate	Total	In	Out
High-Cube Warehouse	1.44	1,208	0.09	76	60	16	0.10	84	21	63
Warehousing	3.56	3,270	0.30	276	218	58	0.32	294	74	220
Warehousing	3.56	2,980	0.30	252	199	53	0.32	268	67	201
High-Cube Warehouse	3.56	2,412	0.30	204	133	71	0.32	217	72	145
TOTALS		9,870		808	610	198		863	234	629

Notes: 1. This trip generation calculation is provided for the entire development without applied volume reductions taken as part of this study. If applicable, trips net of interaction and pass-by trips are shown below.

	Daily		AM Peak Hour			PM Peak Hour				
	Percentage	Trips	Percentage	Trips	In	Out	Percentage	Trips	In	Out
Interaction/Internal Capture	Factor Differences									
	Net Trips	9,870		808	610	198		863	234	629
Pass-by Trips										
High-Cube Warehouse										
Warehousing										
Warehousing										
High-Cube Warehouse										
Total Pass-By Trips										
NET "NEW" TRIPS		9,870		808	610	198		863	234	629
<i>(After interaction/internal capture & net of pass-by trips)</i>										

Beck Property

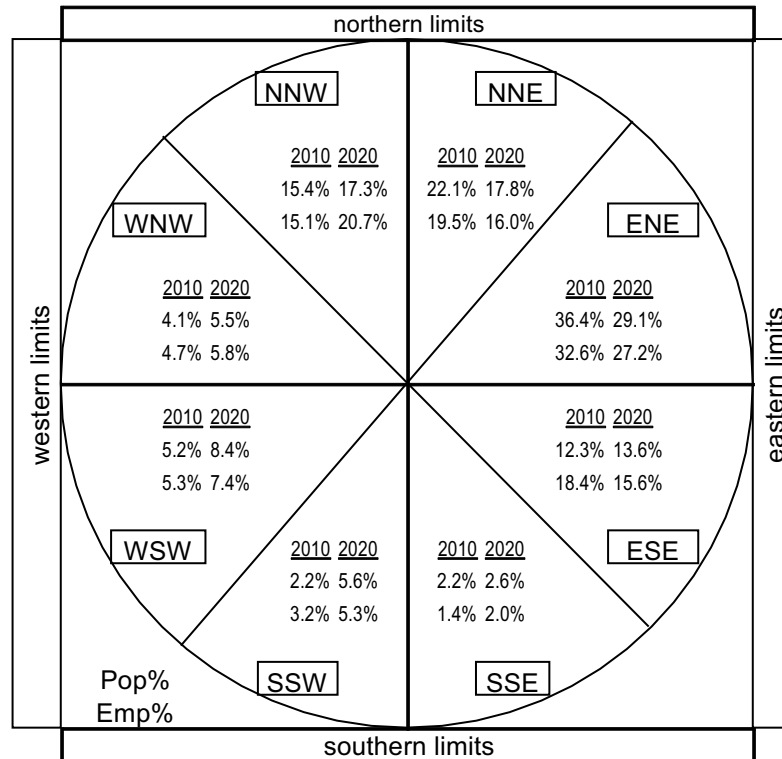
Trip Distribution - Summaries

Quadrant	2010				2020			
	Population	Percent	Employment	Percent	Population	Percent	Employment	Percent
North Northwest	104,536	15.4%	32,988	15.1%	161,209	17.3%	73,645	20.7%
North Northeast	150,257	22.1%	42,645	19.5%	166,398	17.8%	56,724	16.0%
North	254,793	37.5%	75,633	34.6%	327,607	35.1%	130,369	36.7%
East Northeast	247,371	36.4%	71,253	32.6%	271,689	29.1%	96,831	27.2%
East Southeast	83,339	12.3%	40,191	18.4%	126,503	13.6%	55,327	15.6%
East	330,710	48.7%	111,444	51.0%	398,192	42.7%	152,158	42.8%
South Southeast	14,678	2.2%	3,046	1.4%	24,586	2.6%	7,096	2.0%
South Southwest	15,097	2.2%	7,061	3.2%	52,673	5.6%	18,709	5.3%
South	29,775	4.4%	10,107	4.6%	77,260	8.2%	25,805	7.3%
West Southwest	35,622	5.2%	11,495	5.3%	78,605	8.4%	26,343	7.4%
West Northwest	28,114	4.1%	10,222	4.7%	51,219	5.5%	20,725	5.8%
West	63,736	9.3%	21,717	10.0%	129,824	13.9%	47,068	13.2%
Totals	679,014	99.9%	218,901	100.2%	932,883	99.9%	355,401	100.0%

Radii

Population: 12-mile Radius

Employment: 12-mile Radius



APPENDIX E

GROWTH RATE CALCULATIONS

Location of counts: Vehicles intering the intersection of Bullard Avenue & Van Buren Street

Source(s): Traffic counts performed by FDS

	Year	AM	PM
Beginning	7/7/2011	1,541	2,134
End	12/5/2012	1,573	2,055
Avg Growth Rate		1.5%	-2.6%
Per-Year Multiplier		1.015	0.974
Expansion Factor		1.021	0.963

Growth Rate Used: 2% per year

Year	Growth Rate	Expansion Factor(s)	
2012	-	1.000	
2013	2.0%	1.020	<- Expansion factor to opening
2014	2.0%	1.040	
2015	2.0%	1.061	
2016	2.0%	1.082	
2017	2.0%	1.104	
2018	2.0%	1.126	<- Expansion factor to 5 years after opening
2019	2.0%	1.149	
2020	2.0%	1.172	
2021	2.0%	1.195	
2022	2.0%	1.219	
2023	2.0%	1.243	
2024	2.0%	1.268	
2025	2.0%	1.293	
2026	2.0%	1.319	
2027	2.0%	1.345	
2028	2.0%	1.372	
2029	2.0%	1.399	
2030	2.0%	1.427	
2031	2.0%	1.456	
2032	2.0%	1.485	
2033	2.0%	1.515	

Note: intersections with traffic counts performed in 2011 have had an additional 2% growth factor applied to approximate traffic in the 2012 existing year.

APPENDIX F

2013 PEAK HOUR ANALYSIS

Beck Property TIA, Goodyear AZ
AM Peak Hour
2013 AM - Opening

Scenario Report

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

Beck Property TIA, Goodyear AZ
AM Peak Hour
2013 AM - Opening

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

Intersection #1 Bullard Ave & Van Buren St

Cycle (sec): 90 Critical Vol./Cap. (X): 0.532
Loss Time (sec): 12 Average Delay (sec/veh): 23.9
Optimal Cycle: 42 Level Of Service: C

Table with columns for Street Name (Bullard Ave, Van Buren St), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Prot+Permit), Rights (Include), and various timing parameters like Min. Green, Y+R, and Lanes.

Volume Module: Table showing traffic volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume across different movements.

Saturation Flow Module: Table showing saturation flow data including Sat/Lane, Adjustment, Lanes, and Final Sat for each movement.

Capacity Analysis Module: Table showing capacity analysis data including Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ for each movement.

Beck Property TIA, Goodyear AZ
AM Peak Hour
2013 AM - Opening

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

Beck Property TIA, Goodyear AZ
AM Peak Hour
2013 AM - Opening

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 145th St & Van Buren St

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: C[19.2]

Table with columns for Street Name, Approach, Movement, Control, Rights, and Lanes. Rows include 145th St and Van Buren St with various traffic movements and lane configurations.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and FinalVolume across different movements.

Critical Gap Module table showing Critical Gp and FollowUpTim values for different movements.

Capacity Module table showing Cnflict Vol, Potent Cap., Move Cap., and Volume/Cap. for different movements.

Level Of Service Module table showing 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

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

Beck Property TIA, Goodyear AZ
AM Peak Hour
2013 AM - Opening

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

Intersection #3 143rd St & Van Buren St

Cycle (sec): 90 Critical Vol./Cap. (X): 0.442
Loss Time (sec): 6 Average Delay (sec/veh): 5.3
Optimal Cycle: 24 Level Of Service: A

Table with columns for Street Name (143rd St, Van Buren St), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Permitted), Rights (Include), and various timing parameters like Min. Green, Y+R, and Lanes.

Volume Module: Table showing traffic volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module: Table showing saturation flow data including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table showing capacity analysis data including Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Beck Property TIA, Goodyear AZ
AM Peak Hour
2013 AM - Opening

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

Beck Property TIA, Goodyear AZ
AM Peak Hour
2013 AM - Opening

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

Intersection #4 Litchfield Rd & Van Buren St

Cycle (sec): 90 Critical Vol./Cap. (X): 0.507
Loss Time (sec): 12 Average Delay (sec/veh): 24.8
Optimal Cycle: 41 Level Of Service: C

Table with columns for Street Name (Litchfield Rd, Van Buren St), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Prot+Permit), Rights (Include), and various timing parameters like Min. Green, Y+R, and Lanes.

Volume Module: Table showing traffic volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume across different movements.

Saturation Flow Module: Table showing saturation flow data including Sat/Lane, Adjustment, Lanes, and Final Sat. for each movement.

Capacity Analysis Module: Table showing capacity analysis data including Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ for each movement.

Beck Property TIA, Goodyear AZ
AM Peak Hour
2013 AM - Opening

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

Beck Property TIA, Goodyear AZ
AM Peak Hour
2013 AM - Opening

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

Intersection #5 Bullard Ave & Yuma Rd

Cycle (sec): 90 Critical Vol./Cap. (X): 0.414
Loss Time (sec): 6 Average Delay (sec/veh): 15.2
Optimal Cycle: 23 Level Of Service: B

Table with columns for Street Name (Bullard Ave, Yuma Rd), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Permitted), Rights (Include), and various timing parameters like Min. Green, Y+R, and Lanes.

Volume Module: Table showing traffic volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume across different movements.

Saturation Flow Module: Table showing saturation flow data including Sat/Lane, Adjustment, Lanes, and Final Sat for each movement.

Capacity Analysis Module: Table showing capacity analysis data including Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ for each movement.

Beck Property TIA, Goodyear AZ
AM Peak Hour
2013 AM - Opening

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

Beck Property TIA, Goodyear AZ
AM Peak Hour
2013 AM - Opening

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #6 143rd Ave & Yuma Rd

Average Delay (sec/veh): 1.5 Worst Case Level Of Service: B[12.1]

Table with columns for Street Name (143rd Ave, Yuma Rd), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Stop Sign, Uncontrolled), Rights (Include), and Lanes.

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 Gp and FollowUpTim.

Capacity Module table with columns for Cnflict 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., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

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

Beck Property TIA, Goodyear AZ
AM Peak Hour
2013 AM - Opening

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 Access C & Yuma Rd

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: B[12.6]

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

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.

Critical Gap Module:

Table with columns for Critical Gp and FollowUpTim.

Capacity Module:

Table with columns for Cnflict 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., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

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

Beck Property TIA, Goodyear AZ
AM Peak Hour
2013 AM - Opening

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

Intersection #8 Litchfield Rd & Yuma Rd

Cycle (sec): 90 Critical Vol./Cap. (X): 0.394
Loss Time (sec): 12 Average Delay (sec/veh): 20.8
Optimal Cycle: 35 Level Of Service: C

Table with columns for Street Name (Litchfield Rd, Yuma Rd), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Prot+Permit), Rights (Include), and various timing parameters like Min. Green, Y+R, and Lanes.

Volume Module: Table showing traffic volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume across different movements.

Saturation Flow Module: Table showing saturation flow data including Sat/Lane, Adjustment, Lanes, and Final Sat. for various movements.

Capacity Analysis Module: Table showing capacity analysis data including Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ for various movements.

Beck Property TIA, Goodyear AZ
AM Peak Hour
2013 AM - Opening

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

Beck Property TIA, Goodyear AZ
PM Peak Hour
2013 PM - Opening

Scenario Report

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

Beck Property TIA, Goodyear AZ
PM Peak Hour
2013 PM - Opening

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

Intersection #1 Bullard Ave & Van Buren St

Cycle (sec): 90 Critical Vol./Cap. (X): 0.545
Loss Time (sec): 12 Average Delay (sec/veh): 23.5
Optimal Cycle: 43 Level Of Service: C

Table with columns for Street Name (Bullard Ave, Van Buren St), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Prot+Permit), Rights (Include), and various timing parameters like Min. Green, Y+R, and Lanes.

Volume Module: Table showing traffic volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume across different movements.

Saturation Flow Module: Table showing saturation flow data including Sat/Lane, Adjustment, Lanes, and Final Sat. for each movement.

Capacity Analysis Module: Table showing capacity analysis data including Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ for each movement.

Beck Property TIA, Goodyear AZ
PM Peak Hour
2013 PM - Opening

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

Beck Property TIA, Goodyear AZ
PM Peak Hour
2013 PM - Opening

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 145th St & Van Buren St

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: C[19.0]

Table with columns for Street Name, Approach, Movement, Control, Rights, Lanes. Rows include 145th St and Van Buren St with various traffic configurations.

Volume Module:

Table with columns for traffic metrics: 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 for Critical Gp and FollowUpTim.

Capacity Module:

Table with columns for traffic metrics: Cnflict Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module:

Table with columns for traffic metrics: 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.

Beck Property TIA, Goodyear AZ
PM Peak Hour
2013 PM - Opening

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

Intersection #3 143rd St & Van Buren St

Cycle (sec): 90 Critical Vol./Cap. (X): 0.425
Loss Time (sec): 6 Average Delay (sec/veh): 13.8
Optimal Cycle: 24 Level Of Service: B

Table with columns for Street Name (143rd St, Van Buren St), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

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, Reduced Vol, PCE Adj, MLF Adj, and FinalVolume.

Saturation Flow Module: Table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Beck Property TIA, Goodyear AZ
PM Peak Hour
2013 PM - Opening

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

Beck Property TIA, Goodyear AZ
PM Peak Hour
2013 PM - Opening

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

Intersection #4 Litchfield Rd & Van Buren St

Cycle (sec): 90 Critical Vol./Cap. (X): 0.833
Loss Time (sec): 12 Average Delay (sec/veh): 31.4
Optimal Cycle: 82 Level Of Service: C

Table with columns for Street Name (Litchfield Rd, Van Buren St), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Prot+Permit), Rights (Include), and various timing parameters like Min. Green, Y+R, and Lanes.

Volume Module:

Table showing volume module data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume across different movements.

Saturation Flow Module:

Table showing saturation flow module data including Sat/Lane, Adjustment, Lanes, and Final Sat. for various movements.

Capacity Analysis Module:

Table showing capacity analysis module data including Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ for various movements.

Beck Property TIA, Goodyear AZ
PM Peak Hour
2013 PM - Opening

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

Beck Property TIA, Goodyear AZ
PM Peak Hour
2013 PM - Opening

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

Intersection #5 Bullard Ave & Yuma Rd

Cycle (sec): 90 Critical Vol./Cap. (X): 0.509
Loss Time (sec): 6 Average Delay (sec/veh): 16.2
Optimal Cycle: 27 Level Of Service: B

Table with columns for Street Name (Bullard Ave, Yuma Rd), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Permitted), Rights (Include), and various timing parameters like Min. Green, Y+R, and Lanes.

Volume Module: Table showing traffic volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume across different movements.

Saturation Flow Module: Table showing saturation flow data including Sat/Lane, Adjustment, Lanes, and Final Sat. for each movement.

Capacity Analysis Module: Table showing capacity analysis data including Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ for each movement.

Beck Property TIA, Goodyear AZ
PM Peak Hour
2013 PM - Opening

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

Beck Property TIA, Goodyear AZ
 PM Peak Hour
 2013 PM - Opening

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #6 143rd Ave & Yuma Rd

Average Delay (sec/veh): 2.8 Worst Case Level Of Service: B[13.4]

Street Name:	143rd Ave					Yuma Rd						
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	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	0	1	0	1	0	0	1

Volume Module:

Base Vol:	0	0	0	0	0	0	0	223	0	0	336	0
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	0	0	0	0	0	0	227	0	0	343	0
Added Vol:	0	0	0	73	0	74	30	7	0	0	15	27
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	73	0	74	30	234	0	0	358	27
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	0	0	77	0	78	32	247	0	0	377	28
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	77	0	78	32	247	0	0	377	28

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflict Vol:	xxxx	xxxx	xxxxx	687	xxxx	377	405	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	416	xxxx	674	1165	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	407	xxxx	674	1165	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.19	xxxx	0.12	0.03	xxxx	xxxx	xxxx	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	0.7	xxxx	0.4	0.1	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	15.9	xxxx	11.0	8.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	C	*	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			13.4			xxxxxx			xxxxxx		
ApproachLOS:	*			B			*			*		

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

Beck Property TIA, Goodyear AZ
PM Peak Hour
2013 PM - Opening

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 Access C & Yuma Rd

Average Delay (sec/veh): 0.9 Worst Case Level Of Service: B[13.3]

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

Volume Module:

Table with columns for Volume Module metrics: 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 for Critical Gap Module metrics: Critical Gp, FollowUpTim.

Capacity Module:

Table with columns for Capacity Module metrics: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module:

Table with columns for Level Of Service Module metrics: 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.

Beck Property TIA, Goodyear AZ
PM Peak Hour
2013 PM - Opening

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

Intersection #8 Litchfield Rd & Yuma Rd

Cycle (sec): 90 Critical Vol./Cap. (X): 0.473
Loss Time (sec): 12 Average Delay (sec/veh): 22.8
Optimal Cycle: 39 Level Of Service: C

Table with columns for Street Name (Litchfield Rd, Yuma Rd), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

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, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module: Table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Beck Property TIA, Goodyear AZ
PM Peak Hour
2013 PM - Opening

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

APPENDIX G

2018 PEAK HOUR ANALYSIS

Beck Property TIA, Goodyear AZ
AM Peak Hour
2018 AM - Horizon

Scenario Report

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

Beck Property TIA, Goodyear AZ
AM Peak Hour
2018 AM - Horizon

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

Intersection #1 Bullard Ave & Van Buren St

Cycle (sec): 90 Critical Vol./Cap. (X): 0.575
Loss Time (sec): 12 Average Delay (sec/veh): 24.3
Optimal Cycle: 45 Level Of Service: C

Table with columns for Street Name (Bullard Ave, Van Buren St), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Prot+Permit), Rights (Include), and various timing parameters like Min. Green, Y+R, and Lanes.

Volume Module: Table showing traffic volume and adjustment factors such as Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module: Table showing saturation flow rates and adjustment factors like Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table showing capacity analysis metrics such as Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Beck Property TIA, Goodyear AZ
AM Peak Hour
2018 AM - Horizon

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

Beck Property TIA, Goodyear AZ
AM Peak Hour
2018 AM - Horizon

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 145th St & Van Buren St

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: C[21.1]

Table with columns for Street Name, Approach, Movement, Control, Rights, and Lanes. Rows include 145th St and Van Buren St with various movement and lane configurations.

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 145th St and Van Buren St.

Critical Gap Module table with columns for Critical Gp and FollowUpTim. Rows include 145th St and Van Buren St.

Capacity Module table with columns for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap. Rows include 145th St and Van Buren St.

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 145th St and Van Buren St.

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

Beck Property TIA, Goodyear AZ
AM Peak Hour
2018 AM - Horizon

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

Intersection #3 143rd St & Van Buren St

Cycle (sec): 90 Critical Vol./Cap. (X): 0.464
Loss Time (sec): 6 Average Delay (sec/veh): 5.1
Optimal Cycle: 25 Level Of Service: A

Table with columns for Street Name (143rd St, Van Buren St), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

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, Reduced Vol, PCE Adj, MLF Adj, and FinalVolume.

Saturation Flow Module: Table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Beck Property TIA, Goodyear AZ
AM Peak Hour
2018 AM - Horizon

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

Beck Property TIA, Goodyear AZ
AM Peak Hour
2018 AM - Horizon

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

Intersection #4 Litchfield Rd & Van Buren St

Cycle (sec): 90 Critical Vol./Cap. (X): 0.553
Loss Time (sec): 12 Average Delay (sec/veh): 25.3
Optimal Cycle: 44 Level Of Service: C

Table with columns for Street Name (Litchfield Rd, Van Buren St), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Prot+Permit), Rights (Include), and various timing parameters like Min. Green, Y+R, and Lanes.

Volume Module: Table showing traffic volume metrics such as Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume across different movements.

Saturation Flow Module: Table showing saturation flow metrics like Sat/Lane, Adjustment, Lanes, and Final Sat. for each movement.

Capacity Analysis Module: Table showing capacity analysis metrics such as Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Beck Property TIA, Goodyear AZ
AM Peak Hour
2018 AM - Horizon

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

Beck Property TIA, Goodyear AZ
 AM Peak Hour
 2018 AM - Horizon

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

Intersection #5 Bullard Ave & Yuma Rd

Cycle (sec): 90 Critical Vol./Cap. (X): 0.462
 Loss Time (sec): 6 Average Delay (sec/veh): 15.5
 Optimal Cycle: 25 Level Of Service: B

Street Name:	Bullard Ave						Yuma Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	0	0	1	0	0	1	0

Volume Module:

Base Vol:	1	176	32	39	70	60	126	265	0	21	148	18
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:	1	198	36	44	79	68	142	298	0	24	167	20
Added Vol:	0	0	12	51	0	1	3	22	0	4	7	23
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	198	48	95	79	69	145	320	0	28	174	43
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	1	209	51	100	83	72	153	337	0	29	183	46
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	209	51	100	83	72	153	337	0	29	183	46
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:	1	209	51	100	83	72	153	337	0	29	183	46

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.55	1.00	0.85	0.46	0.93	0.93	0.82	0.82	1.00	0.91	0.91	0.91
Lanes:	1.00	1.00	1.00	1.00	0.53	0.47	0.31	0.69	0.00	0.11	0.71	0.18
Final Sat.:	1053	1900	1615	868	945	822	482	1066	0	195	1223	305

Capacity Analysis Module:

Vol/Sat:	0.00	0.11	0.03	0.12	0.09	0.09	0.32	0.32	0.00	0.15	0.15	0.15
Crit Moves:				****				****				
Green/Cycle:	0.25	0.25	0.25	0.25	0.25	0.25	0.68	0.68	0.00	0.68	0.68	0.68
Volume/Cap:	0.00	0.44	0.13	0.46	0.35	0.35	0.46	0.46	0.00	0.22	0.22	0.22
Delay/Veh:	25.4	29.2	26.3	30.2	28.3	28.3	6.9	6.9	0.0	5.4	5.4	5.4
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:	25.4	29.2	26.3	30.2	28.3	28.3	6.9	6.9	0.0	5.4	5.4	5.4
LOS by Move:	C	C	C	C	C	C	A	A	A	A	A	A
HCM2kAvgQ:	0	5	1	2	3	3	7	7	0	3	3	3

Beck Property TIA, Goodyear AZ
AM Peak Hour
2018 AM - Horizon

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

Beck Property TIA, Goodyear AZ
AM Peak Hour
2018 AM - Horizon

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #6 143rd Ave & Yuma Rd

Average Delay (sec/veh): 1.5 Worst Case Level Of Service: B[12.6]

Table with columns for Street Name (143rd Ave, Yuma Rd), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Stop Sign, Uncontrolled), Rights (Include), and Lanes.

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 Gp and FollowUpTim.

Capacity Module table with columns for Cnflict 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., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

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

Beck Property TIA, Goodyear AZ
AM Peak Hour
2018 AM - Horizon

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 Access C & Yuma Rd

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: B[13.2]

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

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.

Critical Gap Module:

Table with columns for Critical Gp and FollowUpTim.

Capacity Module:

Table with columns for Cnflct 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., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

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

Beck Property TIA, Goodyear AZ
 AM Peak Hour
 2018 AM - Horizon

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

Intersection #8 Litchfield Rd & Yuma Rd

Cycle (sec): 90 Critical Vol./Cap. (X): 0.431
 Loss Time (sec): 12 Average Delay (sec/veh): 21.0
 Optimal Cycle: 36 Level Of Service: C

Street Name:	Litchfield Rd						Yuma Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Prot+Permit			Prot+Permit			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	1	0	1	1	0	1	1	0	1

Volume Module:

Base Vol:	33	275	24	92	341	49	83	117	93	19	69	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:	37	310	27	104	384	55	93	132	105	21	78	88
Added Vol:	18	0	0	0	0	44	19	12	6	0	37	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	55	310	27	104	384	99	112	144	111	21	115	88
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	58	326	28	109	404	104	118	151	117	23	121	92
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	58	326	28	109	404	104	118	151	117	23	121	92
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:	58	326	28	109	404	104	118	151	117	23	121	92

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.94	0.94	0.95	1.00	0.85	0.95	0.89	0.89	0.95	0.89	0.89
Lanes:	1.00	1.84	0.16	1.00	1.00	1.00	1.00	1.13	0.87	1.00	1.13	0.87
Final Sat.:	1805	3280	286	1805	1900	1615	1805	1907	1469	1805	1912	1464

Capacity Analysis Module:

Vol/Sat:	0.03	0.10	0.10	0.06	0.21	0.06	0.07	0.08	0.08	0.01	0.06	0.06
Crit Moves:	****			****			****			****		
Green/Cycle:	0.43	0.35	0.35	0.60	0.49	0.49	0.33	0.26	0.26	0.19	0.15	0.15
Volume/Cap:	0.12	0.28	0.28	0.15	0.43	0.13	0.28	0.31	0.31	0.10	0.43	0.43
Delay/Veh:	15.3	21.0	21.0	8.0	15.0	12.4	22.0	27.1	27.1	30.3	35.6	35.6
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:	15.3	21.0	21.0	8.0	15.0	12.4	22.0	27.1	27.1	30.3	35.6	35.6
LOS by Move:	B	C	C	A	B	B	C	C	C	C	D	D
HCM2kAvgQ:	1	4	4	1	7	1	2	3	3	1	3	3

Beck Property TIA, Goodyear AZ
AM Peak Hour
2018 AM - Horizon

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

Beck Property TIA, Goodyear AZ
PM Peak Hour
2018 PM - Horizon

Scenario Report

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

Beck Property TIA, Goodyear AZ
PM Peak Hour
2018 PM - Horizon

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

Intersection #1 Bullard Ave & Van Buren St

Cycle (sec): 90 Critical Vol./Cap. (X): 0.587
Loss Time (sec): 12 Average Delay (sec/veh): 24.2
Optimal Cycle: 46 Level Of Service: C

Table with columns for Street Name (Bullard Ave, Van Buren St), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Prot+Permit), Rights (Include), and various timing parameters like Min. Green, Y+R, and Lanes.

Volume Module: Table showing traffic volume and adjustment factors such as Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module: Table showing saturation flow rates and adjustment factors like Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table showing capacity analysis metrics such as Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Beck Property TIA, Goodyear AZ
PM Peak Hour
2018 PM - Horizon

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

Beck Property TIA, Goodyear AZ
PM Peak Hour
2018 PM - Horizon

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 145th St & Van Buren St

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: C[21.0]

Table with columns for Street Name, Approach, Movement, Control, Rights, and Lanes. Rows include 145th St and Van Buren St with various traffic configurations.

Volume Module:

Table with columns for traffic metrics: 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 for Critical Gp and FollowUpTim.

Capacity Module:

Table with columns for traffic metrics: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module:

Table with columns for traffic metrics: 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.

Beck Property TIA, Goodyear AZ
 PM Peak Hour
 2018 PM - Horizon

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

Intersection #3 143rd St & Van Buren St

Cycle (sec): 90 Critical Vol./Cap. (X): 0.451
 Loss Time (sec): 6 Average Delay (sec/veh): 13.4
 Optimal Cycle: 25 Level Of Service: B

Street Name:	143rd St						Van Buren St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	0	1	0	1	1	0	1

Volume Module:

Base Vol:	0	0	0	5	0	13	3	330	0	0	784	2
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	0	0	6	0	15	3	372	0	0	883	2
Added Vol:	188	0	250	0	0	0	0	0	66	90	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	188	0	250	6	0	15	3	372	66	90	883	2
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	198	0	263	6	0	15	4	391	69	95	929	2
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	198	0	263	6	0	15	4	391	69	95	929	2
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:	198	0	263	6	0	15	4	391	69	95	929	2

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.77	1.00	0.85	0.77	1.00	0.85	0.24	0.93	0.93	0.46	0.95	0.95
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.70	0.30	1.00	1.99	0.01
Final Sat.:	1461	1900	1615	1461	1900	1615	454	2995	532	865	3601	9

Capacity Analysis Module:

Vol/Sat:	0.14	0.00	0.16	0.00	0.00	0.01	0.01	0.13	0.13	0.11	0.26	0.26
Crit Moves:	****									****		
Green/Cycle:	0.36	0.00	0.36	0.36	0.00	0.36	0.57	0.57	0.57	0.57	0.57	0.57
Volume/Cap:	0.37	0.00	0.45	0.01	0.00	0.03	0.01	0.23	0.23	0.19	0.45	0.45
Delay/Veh:	21.7	0.0	22.5	18.4	0.0	18.6	8.3	9.5	9.5	9.4	11.3	11.3
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	0.0	22.5	18.4	0.0	18.6	8.3	9.5	9.5	9.4	11.3	11.3
LOS by Move:	C	A	C	B	A	B	A	A	A	A	B	B
HCM2kAvgQ:	4	0	6	0	0	0	0	3	3	1	7	7

Beck Property TIA, Goodyear AZ
PM Peak Hour
2018 PM - Horizon

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

 Beck Property TIA, Goodyear AZ
 PM Peak Hour
 2018 PM - Horizon

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

Intersection #4 Litchfield Rd & Van Buren St

Cycle (sec): 90 Critical Vol./Cap. (X): 0.905
 Loss Time (sec): 12 Average Delay (sec/veh): 34.8
 Optimal Cycle: 106 Level Of Service: C

Street Name:	Litchfield Rd						Van Buren St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Prot+Permit			Prot+Permit			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	2	1	0	2	1	0	2	1	0	1

Volume Module:

Base Vol:	122	679	103	238	419	113	147	287	77	86	480	188
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:	137	765	116	268	472	127	166	323	87	97	540	212
Added Vol:	0	43	3	0	18	63	177	72	0	2	26	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	137	808	119	268	490	190	343	395	87	99	566	212
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	145	850	125	282	516	200	361	416	91	104	596	223
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	145	850	125	282	516	200	361	416	91	104	596	223
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:	145	850	125	282	516	200	361	416	91	104	596	223

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.89	0.89	0.95	0.95	0.85	0.95	0.95	0.85	0.95	0.91	0.91
Lanes:	1.00	2.61	0.39	1.00	2.00	1.00	1.00	2.00	1.00	1.00	1.46	0.54
Final Sat.:	1805	4435	653	1805	3610	1615	1805	3610	1615	1805	2520	942

Capacity Analysis Module:

Vol/Sat:	0.08	0.19	0.19	0.16	0.14	0.12	0.20	0.12	0.06	0.06	0.24	0.24
Crit Moves:	****			****			****			****		
Green/Cycle:	0.35	0.21	0.21	0.42	0.25	0.25	0.52	0.32	0.32	0.42	0.26	0.26
Volume/Cap:	0.39	0.90	0.90	0.71	0.58	0.50	0.75	0.36	0.18	0.19	0.90	0.90
Delay/Veh:	21.7	45.4	45.4	26.0	30.8	30.2	26.1	23.6	22.1	16.1	44.6	44.6
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	45.4	45.4	26.0	30.8	30.2	26.1	23.6	22.1	16.1	44.6	44.6
LOS by Move:	C	D	D	C	C	C	C	C	C	B	D	D
HCM2kAvgQ:	3	11	11	8	7	5	8	4	2	2	15	15

Beck Property TIA, Goodyear AZ
PM Peak Hour
2018 PM - Horizon

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

Beck Property TIA, Goodyear AZ
PM Peak Hour
2018 PM - Horizon

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

Intersection #5 Bullard Ave & Yuma Rd

Cycle (sec): 90 Critical Vol./Cap. (X): 0.557
Loss Time (sec): 6 Average Delay (sec/veh): 16.8
Optimal Cycle: 30 Level Of Service: B

Table with columns for Street Name (Bullard Ave, Yuma Rd), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

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, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module: Table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Beck Property TIA, Goodyear AZ
PM Peak Hour
2018 PM - Horizon

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

Beck Property TIA, Goodyear AZ
 PM Peak Hour
 2018 PM - Horizon

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #6 143rd Ave & Yuma Rd

Average Delay (sec/veh): 2.7 Worst Case Level Of Service: B[14.2]

Street Name:	143rd Ave					Yuma Rd						
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	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	0	1	0	1	0	0	1

Volume Module:

Base Vol:	0	0	0	0	0	0	0	223	0	0	336	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	0	0	0	0	0	0	251	0	0	378	0
Added Vol:	0	0	0	73	0	74	30	7	0	0	15	27
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	73	0	74	30	258	0	0	393	27
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	0	0	77	0	78	32	272	0	0	414	28
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	77	0	78	32	272	0	0	414	28

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflict Vol:	xxxx	xxxx	xxxxx	749	xxxx	414	442	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	382	xxxx	643	1128	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	374	xxxx	643	1128	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.21	xxxx	0.12	0.03	xxxx	xxxx	xxxx	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	0.8	xxxx	0.4	0.1	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	17.1	xxxx	11.4	8.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	C	*	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			14.2			xxxxxx			xxxxxx		
ApproachLOS:	*			B			*			*		

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

Beck Property TIA, Goodyear AZ
PM Peak Hour
2018 PM - Horizon

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 Access C & Yuma Rd

Average Delay (sec/veh): 0.8 Worst Case Level Of Service: B[14.0]

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

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.

Critical Gap Module:

Table with columns for Critical Gp and FollowUpTim.

Capacity Module:

Table with columns for Cnflct 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., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

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

Beck Property TIA, Goodyear AZ
PM Peak Hour
2018 PM - Horizon

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

Intersection #8 Litchfield Rd & Yuma Rd

Cycle (sec): 90 Critical Vol./Cap. (X): 0.519
Loss Time (sec): 12 Average Delay (sec/veh): 23.2
Optimal Cycle: 41 Level Of Service: C

Table with columns for Street Name (Litchfield Rd, Yuma Rd), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

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, Reduced Vol, PCE Adj, MLF Adj, and FinalVolume.

Saturation Flow Module: Table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Beck Property TIA, Goodyear AZ
PM Peak Hour
2018 PM - Horizon

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

APPENDIX H

QUEUE LENGTH ANALYSIS

Unsignalized Intersection
2018

Average Vehicle Length (ft): 25

Equation Used: storage length = 2 x (vehicles/hour)/(60 minutes/hour) x average vehicle length

Intersection	Approach	AM Peak (veh/hr)	Midday Peak	PM Peak (veh/hr)	Veh per 2 minutes	Storage Length (ft)
Van Buren Street/145th Avenue	NB Left	10	0	20	1	25
	WB Left	32	0	5	2	50
	NB Right	2	0	2	1	25
	EB Right	16	0	1	1	25
Yuma Road/143rd Avenue	SB Left	22	0	73	3	75
	EB Left	71	0	30	3	75
	SB Right	26	0	74	3	75
	WB Right	71	0	27	3	75
Yuma Road/Access C	EB Left	14	0	7	1	25

Signalized Intersection
2018

Average Vehicle Length (ft): 25

Cycles: 2

Intersection Cycle Length (sec): 90

Equation Used: storage length = 2 x (vehicles/hour)/(cycles/hour) x average vehicle length

Intersection	Approach	AM Peak (veh/hr)	Midday Peak	PM Peak (veh/hr)	2x(veh/hr)/ (cycles/hr)	Storage Length (ft)
Van Buren Street/Bullard Avenue	NB Left	10	0	9	1	25
	SB Left	232	0	117	12	300
	EB Left	343	0	166	18	450
	WB Left	20	0	76	4	100
	NB Right	49	0	34	3	75
	SB Right	144	0	314	16	400
	EB Right	9	0	9	1	25
	WB Right	93	0	274	14	350
Van Buren Street/143rd Avenue	NB Left	53	0	188	10	250
	SB Left	2	0	6	1	25
	EB Left	165	0	350	18	450
	WB Left	243	0	90	13	325
	NB Right	74	0	250	13	325
	SB Right	285	0	200	15	375
	EB Right	184	0	66	10	250
Van Buren Street/Litchfield Road	NB Left	104	0	137	7	175
	SB Left	216	0	268	14	350
	EB Left	154	0	343	18	450
	WB Left	83	0	99	5	125
	SB Right	284	0	190	15	375
	EB Right	95	0	87	5	125
Yuma Road/Bullard Avenue	NB Left	1	0	0	1	25
	SB Left	95	0	47	5	125
	NB Right	48	0	34	3	75
Yuma Road/Litchfield Road	NB Left	55	0	125	7	175
	SB Left	104	0	126	7	175
	EB Left	112	0	141	8	200
	WB Left	21	0	34	2	50

