TRANSPORTATION IMPACT & MITIGATION ANALYSIS

FOR

Self-Storage Facility

Northwest Corner of Pima Road & Frank Lloyd Wright Boulevard
Scottsdale, Arizona

Prepared for:
Clear Sky Capital
2398 East Camelback Road, Suite 615
Phoenix, AZ 85016

Prepared by:

UCG
United Civil Group

Transportation Impact & Mitigation Analysis
For

Self-Storage Facility

Northwest Corner of Pima Road & Frank Lloyd Wright Boulevard
Scottsdale, Arizona

June 7, 2021
Revision #1: November 11, 2021
Revision #2: January 7, 2022

UCG Project Number: TR21011

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

I. EXECUTIVE SUMMARY

A. PROJECT SUMMARY

United Civil Group (UCG) was retained by Clear Sky Capital to perform this Transportation Impact & Mitigation Analysis (TIMA) in association with the design review and site plan approval application for the self-storage development, located on the northwest corner of Pima Road and Frank Lloyd Wright Boulevard in Scottsdale, Arizona. At build out, the development of this approximate 3.38 net acre site is proposed to contain 130,590 square feet of self-storage use.

UCG performed this TIMA in general accordance with the City of Scottsdale *Design Standards & Policies Manual 2018, Section 5-1.100 Traffic Impact and Mitigation Requirements*; per scoping information provided by the City of Scottsdale Traffic Engineering staff; locally accepted standards and industry practice.

B. STUDY OBJECTIVES

This study is intended to investigate the existing and future traffic conditions and identify any potential roadway improvements necessary to serve the proposed development. Major study objectives of this traffic report are as follows:

- Estimate the trips generated per the current site plan for the self-storage facility ("the Development").
- Analyze the existing and future conditions at the adjacent Northsight Boulevard/Frank Lloyd Wright Boulevard, Hayden Road/Frank Lloyd Wright Boulevard intersections and the site accesses for the Development.
- Document the collision history on Northsight Boulevard, Hayden Road, Frank Lloyd Wright Boulevard, and at the intersections of Northsight Boulevard/Frank Lloyd Wright Boulevard and Hayden Road/Frank Lloyd Wright Boulevard.
- Where applicable, recommend safety, intersection and/or roadway improvements, sufficient to meet the needs of the Development and adjacent roadway network due to the additional site generated traffic volumes.

C. CONCLUSIONS AND RECOMMENDATIONS

The proposed self-storage facility is planned to consist of 130,590 square feet of self-storage use located on the northwest corner of Pima Road/Frank Lloyd Wright Boulevard in Scottsdale, Arizona. The approximate 3.38 net acre site is currently zoned R1-35 (Single-Family Residential) with a proposed zoning change to C4 (General Commercial).

Site access into the development is proposed via two access driveways. Access A is planned to utilize the existing north leg of the Hayden Road/Frank Lloyd Wright

Boulevard intersection that currently accesses the existing commercial development. Access B is planned as a right-out exit only access located on Frank Lloyd Wright Boulevard. As such, the curb at Access B should be modified to limit vehicles to right out only.

On a typical weekday the proposed development is estimated to generate 189 daily weekday trips with 12 trips occurring in the morning peak hour and 20 trips occurring in the evening peak hour. When compared to other land uses that could be developed on the site, the self-storage generates less trips than the uses considered.

The existing signalized study area intersection of Northsight Boulevard/Frank Lloyd Wright Boulevard operates at an acceptable overall level of service, LOS B or better, in the morning and evening peak hours of the 2021 existing condition year. The existing signalized intersection of Hayden Road/Frank Lloyd Wright Boulevard operates at an acceptable level of service in the morning peak hour, LOS C, and at an unacceptable level of service, LOS E, in the evening peak hour of the 2021 existing condition year.

For background traffic conditions in horizon year 2022, the signalized study area intersection of Northsight Boulevard/Frank Lloyd Wright Boulevard is forecasted to continue to operate at an acceptable overall level of service, LOS B or better, in the morning and evening peak hours. The signalized study area intersection of Hayden Road/Frank Lloyd Wright Boulevard is forecasted to continue to operate at an acceptable level of service, LOS C, in the morning peak hour and an unacceptable level of service, LOS E, in the evening peak hour.

For total traffic conditions in horizon year 2022, the signalized study area intersection of Northsight Boulevard/Frank Lloyd Wright Boulevard is forecasted to continue to operate at an acceptable overall level of service, LOS B or better, in the morning and evening peak hours. The signalized study area intersection of Hayden Road/Frank Lloyd Wright Boulevard is forecasted to continue to operate at an acceptable level of service, LOS C, in the morning peak hour and an unacceptable level of service, LOS E, in the evening peak hour. All movements at the proposed new exit only access on Frank Lloyd Wright Boulevard (Access B) are forecasted to operate at acceptable levels of service, LOS C or better, in the morning and evening peak hours of the 2022 total condition year.

Sight triangles shall be provided and maintained at site access points to give drivers exiting the site a clear view of oncoming traffic on Frank Lloyd Wright Boulevard. The landscape and hardscape within the sight triangles must not obstruct the driver's view of the adjacent travel lanes. Adequate sight distances and sight distance triangles should be provided as per DS&PM Figure 5.3-26 and Appendix 5-3B.

II. PROPOSED DEVELOPMENT

A. Site Location

The self-storage facility is being planned for the parcel on the northwest corner of Pima Road and Frank Lloyd Wright Boulevard in Scottsdale, Arizona. **Figures 1 and 2** present the location of the proposed development within the context of the immediate area.

B. Land Use

The Development is planned to include 130,590 square feet of self-storage and RV storage located on a 3.38 net acre site. The site is currently zoned R1-35 (Single-Family Housing) with a proposed zoning change to C4 (General Commercial).

C. Phasing and Timing

The Development is planned to be constructed in one phase with full build out completed by early 2022. For the purposes of this study, a 2022 horizon year is utilized.

D. Site Accessibility

Figure 3 illustrates the site plan for the self-storage facility. The following summary presents the proposed accessibility for the site:

- Site access driveways on Frank Lloyd Wright Boulevard
    - "Access A": Full movement driveway utilizing the north leg of the Hayden Road/Frank Lloyd Wright Boulevard intersection.
    - "Access B": Right-out exit only driveway

The curb at Access B should be modified to limit right out only.

The site access driveways and their function are discussed in more detail in Section VII.B of this report.

Figure 1: Vicinity Map

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Figure 2: Aerial View

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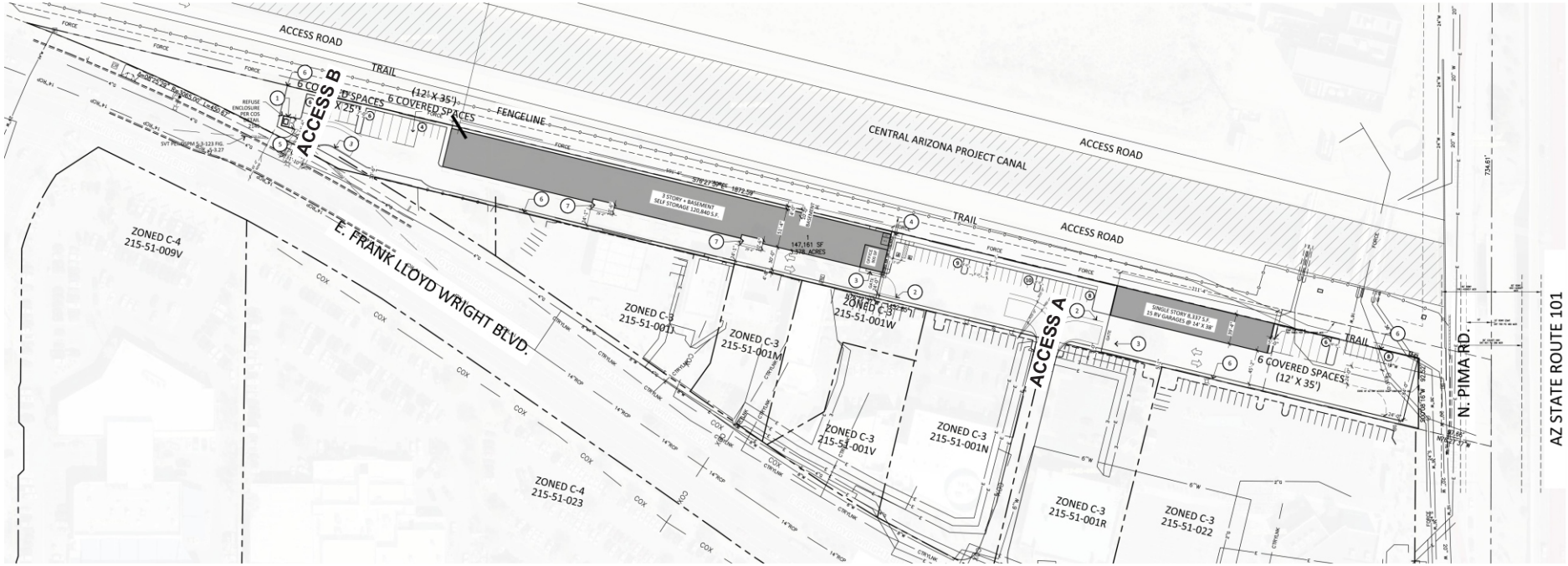

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Figure 3: Site Plan

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III. STUDY AREA CONDITIONS

A. Study Area

Based on TIMA guidelines within the *Design Standards & Policy Manual (DS&PM)* and per discussions with the City of Scottsdale's traffic engineering staff, this development will require a Category 2 study, and have a study area of:

- Northsight Boulevard/Frank Lloyd Wright Boulevard
- Hayden Road/Frank Lloyd Wright Boulevard
- All proposed site accesses

B. Study Area Land Use

The following describes the existing land uses of the subject site and surrounding area:

SUBJECT SITE: Undeveloped vacant land. Existing Zoning: R1-35.
Proposed Zoning: C4

NORTH: Central Arizona Project canal
SOUTH: Existing commercial development followed by Frank Lloyd Wright Boulevard
EAST: Pima Road followed by SR 101
WEST: Undeveloped vacant land followed by Frank Lloyd Wright Boulevard

C. Anticipated Future Development and Planned Improvements

C.1. City of Scottsdale Capital Improvement Projects

There are no City of Scottsdale capital improvement project (CIP) within the study area that will have a direct impact to the traffic operations at the study area intersections.

C.2. Adjacent Private Development Projects

No private development projects within or immediately adjacent to the study have been identified requiring inclusion in the background traffic volumes and conditions.

IV. LEVEL OF SERVICE METHODOLOGY

Intersection capacity analysis is a principal tool used in traffic engineering. Operation is characterized according to the amount of delay at an intersection approach and quantified into a level of service (LOS). The intersection LOS was determined using the methodologies presented in the Transportation Research Board's Highway Capacity Manual Version 6.0 (HCM). The LOS grades quantify and categorize a driver's discomfort, frustration, fuel consumption, and travel times experienced as a result of intersection control and the resulting traffic queues. Per the HCM, the signalized and unsignalized (all-way stop or two-way stop) delay and associated LOS are presented in Table 1 and Table 2. The City of Scottsdale guidelines strive to obtain a LOS D or better for both signalized and unsignalized intersection overall operations. Intersections having LOS E or LOS F may warrant improvements or traffic reductions.

TABLE 1: SIGNALIZED INTERSECTION LEVELS OF SERVICE AND DELAY

Level of Service	Description	Signalized Delay (Sec/Veh)
A	The v/c ratio is low and ether progression is exceptionally favorable or the cycle length is very short. LOS A is the result of favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.	≤ 10
B	The v/c ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.	> 10 and ≤ 20
C	Progression as favorable or the cycle length is moderate. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant, although vehicles still pass through the intersection without stopping.	> 20 and ≤ 35
D	The v/c ratio is high and either progression is ineffective or the cycle length is very long. Many vehicles stop and individual cycle failures are noticeable.	> 35 and ≤ 55
E	The v/c ratio is high, progression is unfavorable and the cycle length is long. Individual cycle failures are frequent.	> 55 and ≤ 80
F	The v/c ratio is very high, progression is poor, and the cycle length is very long. Most cycles fail to clear the queue.	> 80

Source: Highway Capacity Manual Version 6.0

For signalized and all-way stop controlled intersections, LOS is calculated for a movement (e.g. left, through, right), for the approach (e.g. northbound, southbound, eastbound, westbound) and for the overall intersection as a whole.

The LOS criteria for two way stop controlled and all-way stop controlled intersection differ from the criteria for signalized intersections, primarily because the driver perceptions differ among transportation facility types. The expectation is that a signalized intersection is expected to carry higher traffic volumes and will present greater delay than an unsignalized intersection.

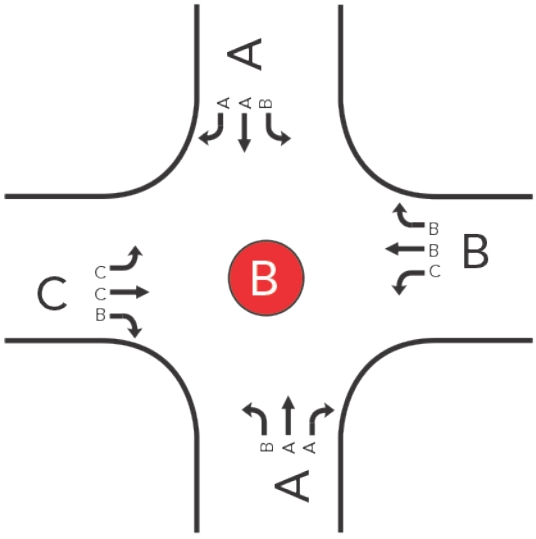
TABLE 2: UNSIGNALIZED INTERSECTION LEVELS OF SERVICE AND DELAY

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

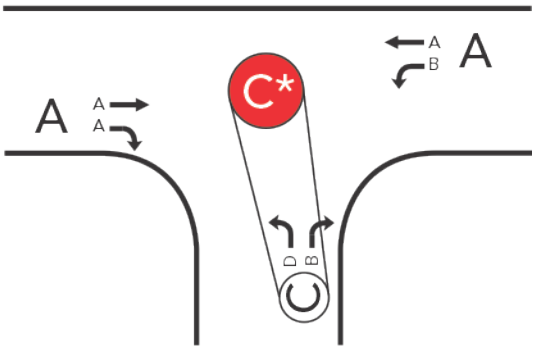
For two-way stop controlled intersections, LOS is calculated for a movement and for the approach. However, for the overall intersection, LOS is reported as the lowest approach within the intersection. This is because the majority of drivers are on the major roadway and do not experience delay traversing through the intersection. The example below illustrates the various LOS calculations completed for intersections.

EXAMPLE:

Signalized & All-Way Stop Controlled



Two-Way Stop Controlled



*Reported as approach LOS

Source: United Civil Group, 2021

EXISTING ROADWAY CONDITIONS

A. PHYSICAL CHARACTERISTICS

Northsight Boulevard is a classified as a Major Collector per the City of Scottsdale *Transportation Master Plan, 2016*. Northsight Boulevard is a two-lane road with one travel lane in both the northbound and southbound directions separated by a two-way left-turn lane. The posted speed limit on Northsight Boulevard adjacent to the development is 25 miles per hour.

Hayden Road is a classified as a Minor Arterial per the City of Scottsdale *Transportation Master Plan, 2016.* Hayden Road is a four-lane road with two travel lanes in the northbound and southbound directions separated by a raised median. The posted speed limit on Hayden Road adjacent to the development is 45 miles per hour.

Frank Lloyd Wright Boulevard is a classified as a Major Arterial per the City of Scottsdale *Transportation Master Plan, 2016.* Frank Lloyd Wright Boulevard is a six-lane road consisting of three travel lanes in the eastbound and westbound directions separated by a raised median. The posted speed limit on Frank Lloyd Wright Boulevard adjacent to the development is 45 miles per hour.

The **Northsight Boulevard/Frank Lloyd Wright Boulevard** intersection is a signalized T-intersection with protected/permissive left turn phasing in the westbound direction on Frank Lloyd Wright Boulevard. The Frank Lloyd Wright legs consists of an eastbound right-turn lane and westbound left-turn lane with three through travel lanes. The Northsight Boulevard leg consists of dual northbound left turn lanes and a northbound right turn lane.

The **Hayden Road/Frank Lloyd Wright Boulevard** intersection is a signalized intersection with protected phasing in the east- and westbound directions on Frank Lloyd Wright Boulevard. Split phasing exists on the north- and southbound legs of the intersection due to the imbalance of traffic volumes in the northbound direction. The eastbound approach consists of exclusive left- and right-turn lanes with three through travel lanes. The westbound approach consists of dual left-turn lanes, an exclusive right-turn lane and three through travel lanes. The northbound approach consists of an exclusive left-turn lane, a shared through/left-turn lane and an exclusive right-turn lane. The southbound approach consists of an exclusive left-turn lane and a shared through/right-turn lane.

B. EXISTING TRAFFIC VOLUMES

Existing turning movement counts (TMC) were collected by UCG staff at the study intersections on Wednesday March 17, 2021 in 15-minute intervals from 7:00am to 9:00am and from 4:00pm to 6:00pm. A 10% adjustment for COVID was used to account for the lower traffic volumes throughout the area during the pandemic. The

resulting adjusted morning and evening peak hour traffic volumes are presented in **Figure 4**.

Complete traffic count data can be found in *Appendix A: Traffic Data*.

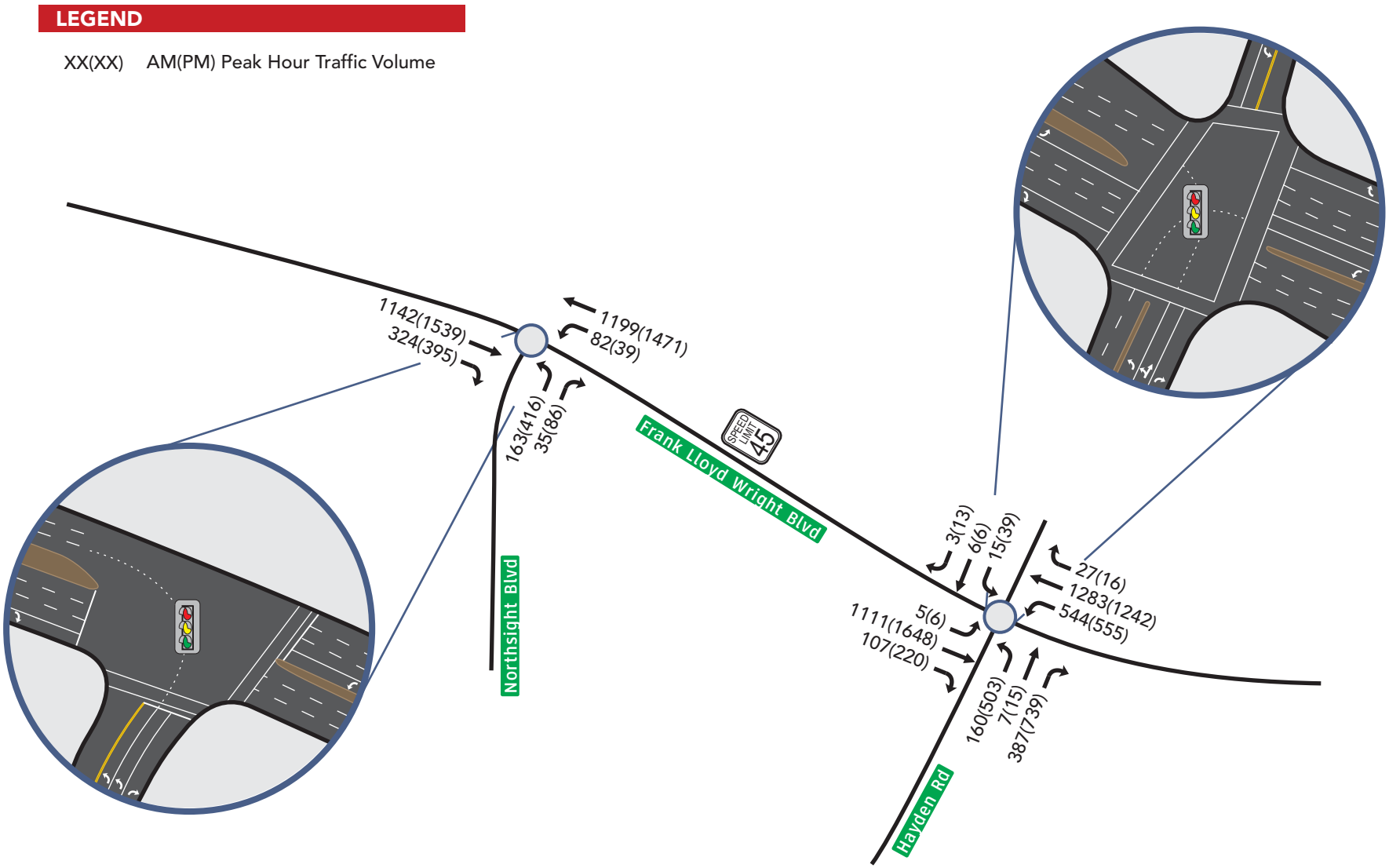


Figure 4: Existing Conditions

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C. Existing Intersection Level of Service Analyses

The level of service (LOS) and overall average delay at the existing study area intersections were evaluated using the 2021 intersection volumes and lane geometry. PTV Vistro software, employing the methodologies as presented in the Highway Capacity Manual, was utilized for the capacity analyses to obtain the levels of service. Vistro output reports are included in *Appendix B: Capacity Analyses*. The results of the existing levels of service analysis are presented in **Table 1**.

Table 1: Existing Conditions Intersection Levels of Service

Intersection Location	NB LOS				SB LOS				EB LOS				WB LOS				Overall Intersection
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	AvgDelay/ LOS
Northsight Boulevard/Frank Lloyd Wright Boulevard - Signalized																	
AM Peak Hour	E	-	D	**E**	-	-	-	**-**	-	A	A	**A**	A	A	-	**A**	7.01 A
PM Peak Hour	D	-	D	**D**	-	-	-	**-**	-	A	A	**A**	A	A	-	**A**	12.87 B
Hayden Road/Frank Lloyd Wright Boulevard - Signalized																	
AM Peak Hour	D	D	F	**D**	D	D	D	**D**	E	C	C	**C**	D	B	B	**C**	29.70 C
PM Peak Hour	D	D	F	**F**	E	E	E	**E**	E	D	C	**D**	F	B	B	**E**	89.89 F

The intersection of Northsight Boulevard/Frank Lloyd Wright Boulevard operates at an acceptable level of service, LOS B or better, during the morning and evening peak hours in the 2021 existing condition. The intersection of Hayden Road/Frank Lloyd Wright Boulevard operates at an acceptable level of service in the morning peak hour and an unacceptable level of service in the evening peak hour in the 2021 existing condition.

D. Collision Analysis

The most recent five years of available crash data (1/1/2016 – 12/31/2020) for the study area intersections were obtained from the Arizona Department of Transportation (ADOT) Arizona Crash Information System (ACIS). **Table 2** summarizes the total number of crashes at the intersection by severity. Crash severity is determined by the reporting officer at the time of the crash or soon thereafter based on the most severe injury sustained by an involved party. Crashes are shown from most severe (Fatal) to least severe (No Injury).

TABLE 2: INJURY SEVERITY 2016-2020

Year	Fatal	Suspected Serious Injury	Suspected Minor Injury	Possible Injury	No Injury	Total
Northsight Boulevard/Frank Lloyd Wright Boulevard						
2016			2	3	11	16
2017					6	6
2018			1	6	8	15
2019			1	2	9	12
2020				1	6	7
Total			4	12	40	56
Hayden Road/Frank Lloyd Wright Boulevard						
2016			1	4	17	22
2017		1	2	5	27	35
2018		1	2	5	16	24
2019		1	2	8	21	32
2020			1	2	13	16
Total		3	8	24	94	129

Table 3 summarizes the total number of crashes at the intersection by type. Crash type categories include Rear End, Left Turn, Angle (front to side, other than left turn), and Other/unknown.

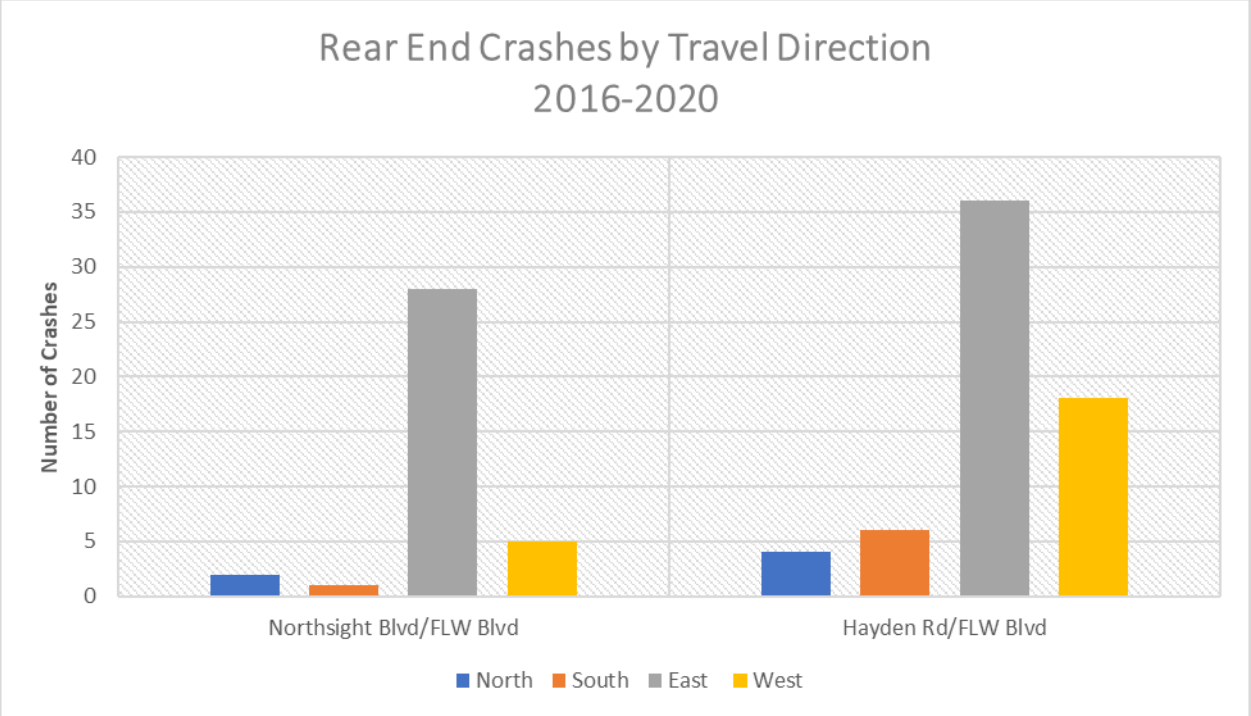
TABLE 3: COLLISION MANNER 2016-2020

Year	Single Vehicle	Angle	Left Turn	Rear End	Head On	Sideswipe Same Direction	Sideswipe Opposite Direction	Rear to Side	Other/ Unknown	Total
Northsight Boulevard/Frank Lloyd Wright Boulevard										
2016		1	2	10		2			1	16
2017	1			4		1				6
2018			1	11		2			1	15
2019		2	1	9						12
2020	1	1		2		3				7
Total	2	4	4	36		8			2	56
Hayden Road/Frank Lloyd Wright Boulevard										
2016		2	3	9		8				22
2017	1	6	3	16		8			1	35
2018		4	3	10	1	6				24
2019		4		22	1	4			1	32
2020	1	1	2	7	1	3			1	16
Total	2	17	11	64	3	29			3	129

Tables 2 and 3 show that within the study area, at the two intersections reviewed, a total of 185 reportable crashes occurred over the five-year period. Of the 185 crashes, more than half, 100, were rear end crashes. Seventy-two percent of the crashes, 134, were reported as no injury, while no fatalities were reported.

According to the FHWA Signalized Intersections Informational Guide, 43 percent of crashes at signalized intersections are of rear end type. Because the rear end crashes were over half of the crashes that occurred at these two intersections, rear end crash were reviewed in greater detail. Using the standard detail reporting by ADOT, no contributing circumstances were noted by the officer for any rear end collision, and only one collision is noted with wet pavement.

The direction was also reviewed to determine if a particular approach had a higher number of crashes than the others. For the intersections of Hayden Road/Frank Lloyd Wright Boulevard and Northsight Boulevard/Frank Lloyd Wright Boulevard the flowing graph represents the direction of travel as reported by the officer.



Reviewing the direction of travel, the majority of rear end crashes occur traveling in eastbound direction, 64 while 23 occurred in the westbound direction. This could be because of unexpected queuing due capacity constraints and multiple closely spaced existing signals within a congested section of roadway. Dedicated turn lanes can assist in reducing rear end crashes and increase capacity through the intersection, however, at these two intersections, dedicated right turn and exclusive left turn lanes exist. The

storage within the turn lanes should be adequate to safely decelerate away from through traffic. The presence of driveways near signalized intersection approach or receiving corners can cause rear end crashes to increase. However, at these two intersections, the existing driveways are adequately spaced from the signalized intersections. Other engineering improvements may include driver awareness through signing or enhanced signal visibility.

V. BACKGROUND CONDITIONS

A. PROJECTED BACKGROUND TRAFFIC

Non-site or background traffic volumes representing the amount of traffic estimated to be on the area roadway network without the proposed development within the study area are projected for the horizon year of the development, year 2022. The yearly growth trends coupled with any known proposed developments in the study area are used to forecast the background traffic.

To account for additional ambient growth in the general area, an annual growth rate of 2% has been applied to the existing traffic volumes. **Figure 5** presents the projected background traffic volumes for the study area.

B. INTERSECTION LEVEL OF SERVICE ANALYSES – BACKGROUND TRAFFIC

Capacity analyses at the existing study area intersections were performed for the forecasted background traffic conditions utilizing the background traffic volumes and the existing roadway geometry. **Table 4** presents the results of the background traffic analysis for 2022. Vistro output reports are included in Appendix B.

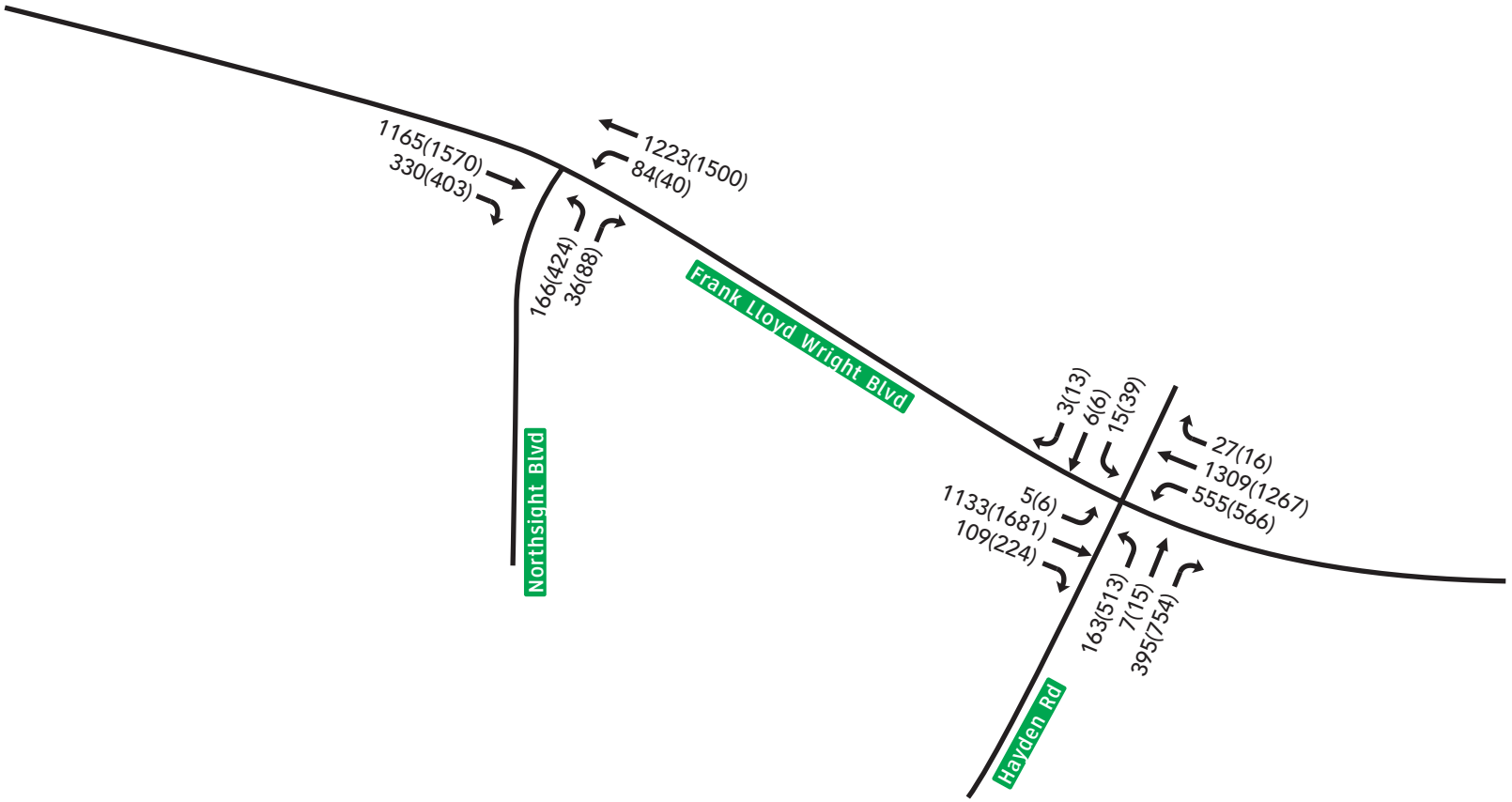
TABLE 4: 2022 BACKGROUND TRAFFIC LEVELS OF SERVICE

Intersection Location	NB LOS				SB LOS				EB LOS				WB LOS				Overall Intersection
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	AvgDelay/ LOS
Northsight Boulevard/Frank Lloyd Wright Boulevard - Signalized																	
AM Peak Hour	E	-	D	**E**	-	-	-	**-**	-	A	A	**A**	A	A	-	**A**	7.08 A
PM Peak Hour	D	-	D	**D**	-	-	-	**-**	-	A	A	**A**	A	A	-	**A**	13.05 B
Hayden Road/Frank Lloyd Wright Boulevard - Signalized																	
AM Peak Hour	D	D	F	**F**	E	E	E	**E**	E	C	C	**C**	D	B	A	**C**	35.14 D
PM Peak Hour	D	D	F	**F**	E	E	E	**E**	E	D	C	**D**	F	B	B	**E**	93.49 F

The intersection of Northsight Boulevard/Frank Lloyd Wright Boulevard operates at an acceptable level of service, LOS B or better, during the morning and evening peak hours in the 2022 background condition. The intersection of Hayden Road/Frank Lloyd Wright Boulevard operates at an acceptable level of service in the morning peak hour and an unacceptable level of service in the evening peak hour in the 2022 background condition.

LEGEND

XX(XX) AM(PM) Peak Hour Traffic Volume



not to scale

Figure 5: Background Traffic - 2022

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VI. PROJECTED SITE TRAFFIC

A. TRIP GENERATION

Estimates of the traffic volumes that will be generated by the self-storage facility were determined from transportation planning data taken from the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition, 2021*. Table 5 presents the estimated daily and peak hour trips generated by the development for a typical weekday.

The most similar land use code for the self-storage facility was determined to be ITE Land Use Code (LUC) 151 – Mini-Warehouse. The following is a brief description for LUC 151 from the ITE Trip Generation Manual:

Mini-Warehouse – is a building in which a number of storage units or vaults are rented for the storage of goods. They are typically referred to as "self-storage" facilities. Each unit is physically separated from other units, and access is usually provided through an overhead door or other common access point.

TABLE 5: TRIP GENERATION

Land Use	Units	Size	ITE LUC	Daily	AM Peak			PM Peak		
					in	out	total	in	out	total
Mini-Warehouse	1,000s sqft	130.6	151	189	7	5	12	9	11	20

Mini-Warehouse – LUC 151

AM Peak Hour	T = 0.10 x (1,000s sqft)	60% entering, 40% exiting
PM Peak Hour	T = 0.15 x (1,000s sqft)	47% entering, 53% exiting
Daily	T = 1.45 x (1,000s sqft)	50% entering, 50% exiting

The proposed self-storage facility is anticipated to generate 189 daily weekday trips with 12 trips occurring in the morning peak hour and 20 trips occurring in the evening peak hour.

B. TRIP DISTRIBUTION AND ASSIGNMENT

The trip distribution and assignment procedure determines the general pattern of travel for vehicles entering and leaving the subject site and the study area. The assumed trip distribution percentages for the proposed development are shown in Table 6.

These percentages are based on the associated street patterns and traffic volumes outside the development, the land uses surrounding the site, and the type of trips the Development will generally attract.

TABLE 6: TRIP DISTRIBUTION PERCENTAGES

Direction	Trip Distribution Percentage	
	Arriving From	Departing To
Frank Lloyd Wright Boulevard east of Hayden Road	50%	50%
Frank Lloyd Wright Boulevard west of Northsight Boulevard	25%	25%
Hayden Road south of Frank Lloyd Boulevard	25%	25%
TOTAL	*100%*	*100%*

The site-generated trips were routed in to and out of site driveways based on typical driver behavior. The morning and evening peak hour site-generated traffic volumes for the self-storage facility are shown on **Figure 6**.

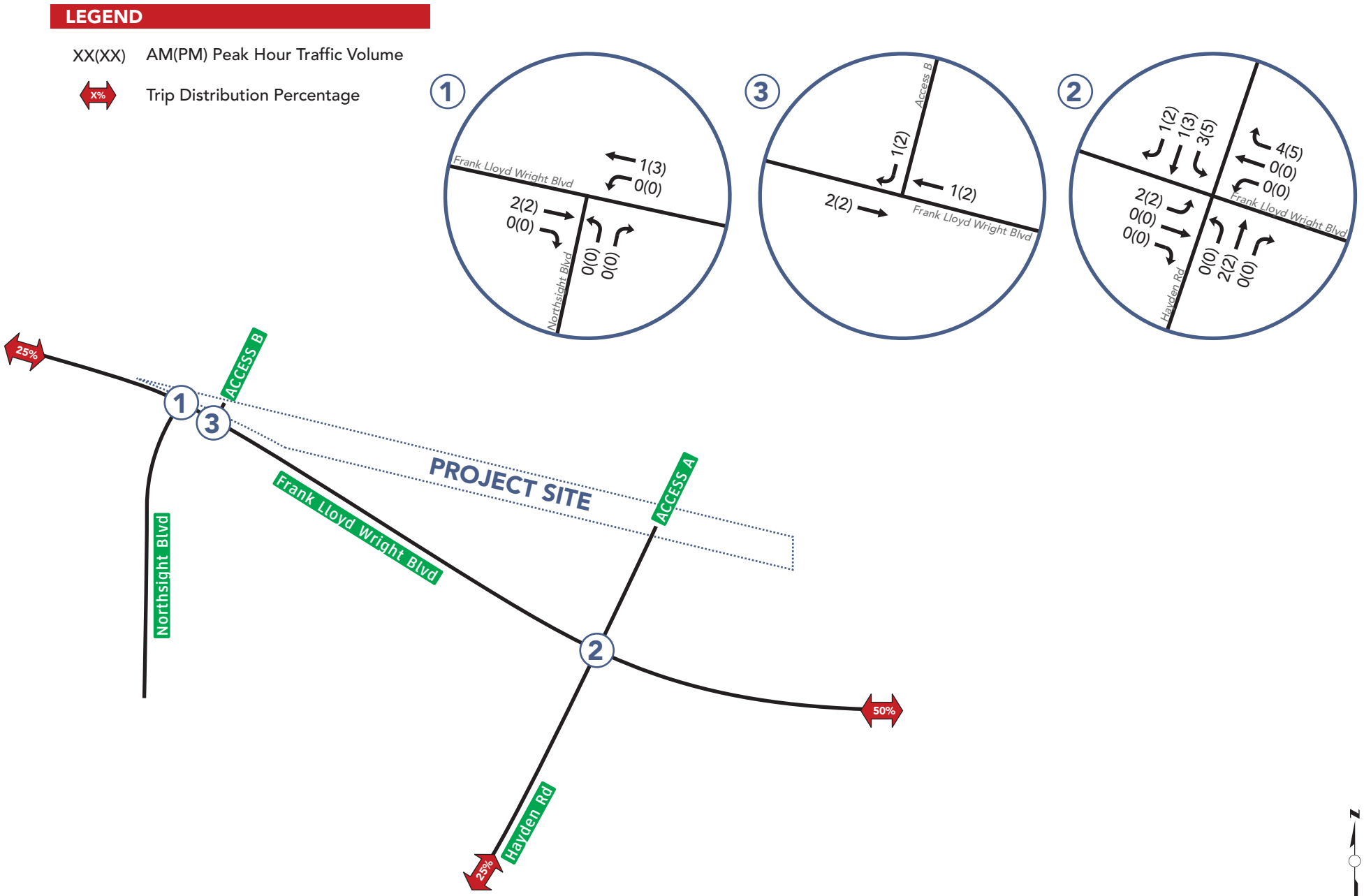


Figure 6: Site Generated Traffic and Trip Distribution

VII. TOTAL TRAFFIC CONDITIONS AND ANALYSIS

The purpose of this section is to determine the estimated total traffic volumes in the study horizon year of 2022; show the relations between traffic operations and roadway geometrics; identify needs pertaining to progressive traffic flow and safety; and identify roadway improvement recommendations or alternatives for further consideration, where applicable.

A. TOTAL TRAFFIC VOLUMES

Total traffic projections for the horizon year of the development were determined by adding the proposed development's site generated traffic to the forecasted horizon background traffic volumes. The total traffic volumes for the horizon year 2022 are presented in **Figure 7**.

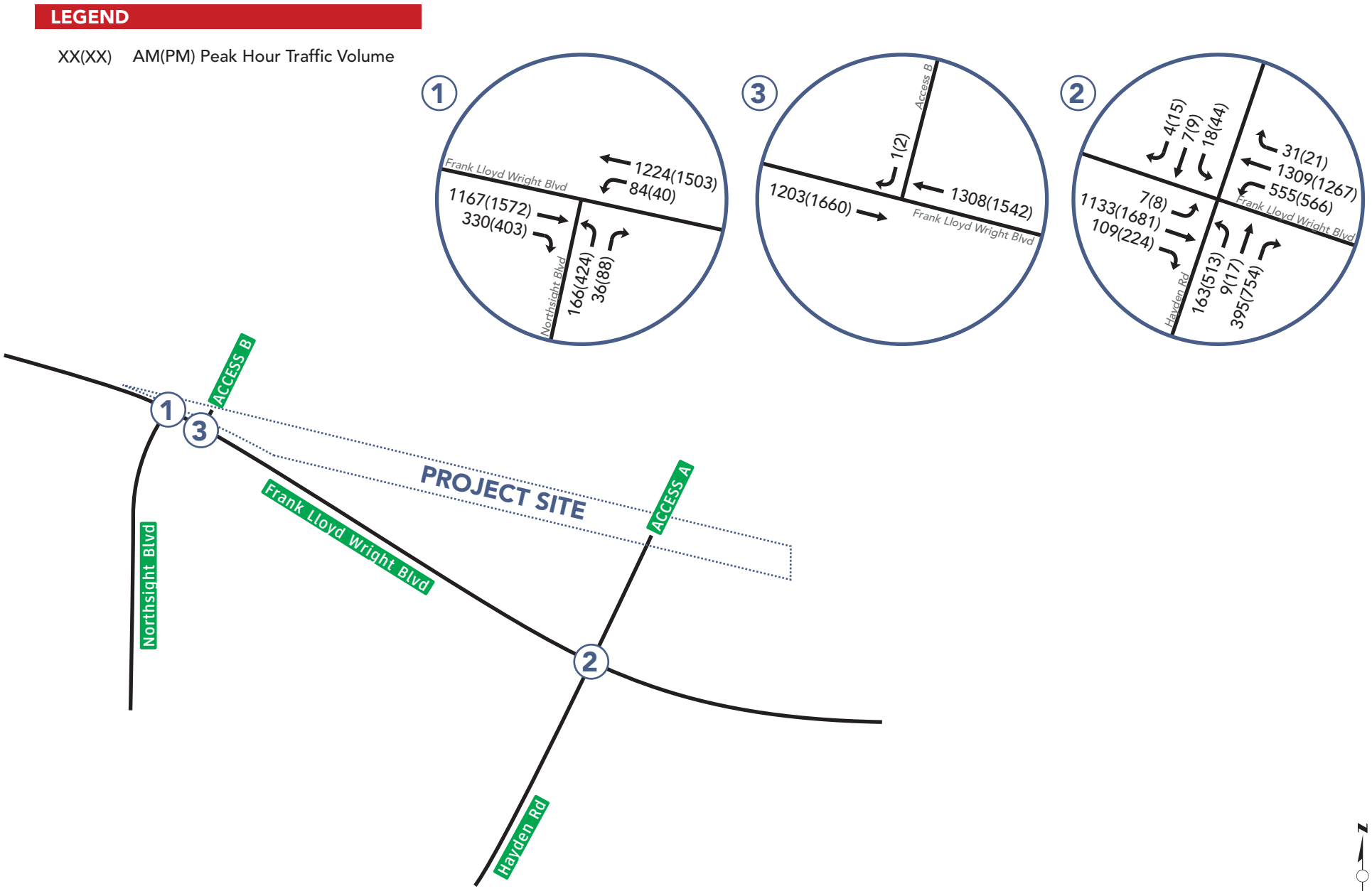


Figure 7: Total Traffic - Year 2022

B. Site Accessibility

The site accessibility for the proposed development is presented and reviewed based on the provided conceptual site plan in Figure 3. **Table 7** provides the recommended site access type for each of the site accesses and information for each access.

Table 7: Site Accessibility

Site Access	Access Type	Notes
Access A	Full	Will share access with the existing commercial development with the north leg of the Hayden Road/Frank Lloyd Wright Boulevard
Access B	Right-out	Gated right-out exit only driveway

The number of driveways accessing the development, and the spacing between driveways and existing intersections is directed by the major arterial classification of Frank Lloyd Wright Boulevard and the guidelines within Section 5-3.200 of the DS&PM, as follows:

- A maximum of two driveway openings per the abutting streets.
    - One new exit only driveway (Access B) is proposed on Frank Lloyd Wright Boulevard while the existing north leg of the Hayden Road/Frank Lloyd Wright Boulevard intersection is proposed to be used as a full access to the site.
- Minimum driveway spacing of 500 feet centerline to centerline on major arterials.
    - At Access B a driveway spacing of approximately 350 feet has been provided for the existing access located east of Access B on Frank Lloyd Wright Boulevard as well as the existing Northsight Boulevard/Frank Lloyd Wright intersection. Although the 500-foot spacing requirement has not been met, Access B is planned as a right-out exit only driveway that is not anticipated to cause detrimental impacts to traffic flow on Frank Lloyd Wright Boulevard or the existing adjacent driveways. The curb at Access B should be modified to limit the driveway to right out only.

B.1. Intersection Sight Distance

Sight triangles shall be provided and maintained at site access points to give drivers exiting the site a clear view of oncoming traffic on Frank Lloyd Wright Boulevard. The landscape and hardscape within the sight triangles must not obstruct the driver's view of the adjacent travel lanes. Adequate sight distances and sight distance triangles should be provided as per DS&PM Figure 5.3-26 and Appendix 5-3B.

C. Deceleration Lane Analyses

C.1. Right-turn Deceleration Lanes

According to Section 5-3.206 of the City of Scottsdale's Design Standards and Policies Manual (DS&PM), deceleration lanes are required at all new driveways on major arterials and at new commercial/retail driveways on minor arterials. An existing right turn deceleration lane exists on westbound Frank Lloyd Wright Boulevard at Hayden Road with approximately 100 feet of storage. Based on the projected right turn volumes into this driveway (31 in the morning peak hour and 21 in the evening peak hour), the 100 feet of storage will be able to accommodate the additional trips generated by the proposed self-storage facility and no modification to the existing right turn lane is recommended. The secondary access on Frank Lloyd Wright Boulevard (Access B) is planned as a right-out exit only access and therefore no right turn deceleration lane is recommended.

C.2. Left-turn Lanes

According to Section 5-3 of the City of Scottsdale's DS&PM, deceleration lanes are required at all new driveways on major arterials. An existing eastbound left turn lane exists on Frank Lloyd Wright Boulevard at Hayden Road with approximately 125 feet of storage. Based on the projected left turning vehicles into this driveway (7 in the morning peak hour and 9 in the evening peak hour), no modification to the existing eastbound left turn lane is recommended. Due to Access B being a right-out exit only access and due to the raised median on Frank Lloyd Wright Boulevard, no left turns are permitted at Access B.

D. Intersection Level of Service Analyses – Total Traffic

Capacity analyses at the existing and proposed study area intersections were performed for the forecasted total traffic for the horizon year of the study, year 2022. Table 8 presents the total levels of service at the study area intersections utilizing the planned and recommended roadway and site access improvements. Summaries of the Vistro output calculations are included in Appendix B.

Table 8: 2022 Total Traffic Levels of Service

Intersection Location	NB LOS				SB LOS				EB LOS				WB LOS				Overall Intersection
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	AvgDelay/ LOS
Northsight Boulevard/Frank Lloyd Wright Boulevard - Signalized																	
AM Peak Hour	E	-	D	**E**	-	-	-	**-**	-	A	A	**A**	A	A	-	**A**	7.08 A
PM Peak Hour	D	-	D	**D**	-	-	-	**-**	-	A	A	**A**	A	A	-	**A**	13.05 B
Hayden Road/Frank Lloyd Wright Boulevard - Signalized																	
AM Peak Hour	D	D	F	**F**	E	E	E	**E**	E	C	C	**C**	D	B	B	**C**	36.05 D
PM Peak Hour	D	D	F	**F**	E	E	E	**E**	E	D	C	**D**	F	B	B	**E**	94.89 F
Access B/Frank Lloyd Wright Boulevard – One-Way Stop Controlled																	
AM Peak Hour	-	-	-	**-**	-	-	C	**C**	-	A	-	**A**	-	A	-	**A**	16.21 C*
PM Peak Hour	-	-	-	**-**	-	-	C	**C**	-	A	-	**A**	-	A	-	**A**	18.65 C*

*Per HCM, overall LOS letter grade not assigned for two-way stop-controlled intersections. Average delay and LOS letter grade shown is for the worst-case movement.

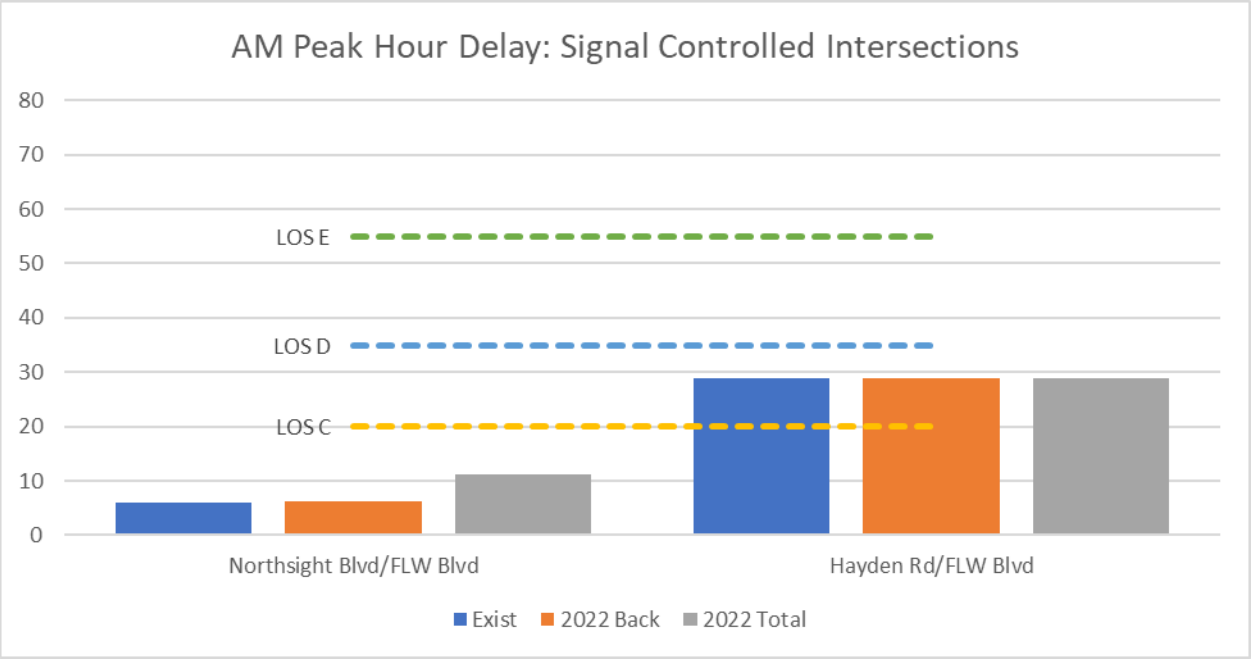
The intersections of Northsight Boulevard/Frank Lloyd Wright Boulevard and Access B/Frank Lloyd Wright Boulevard operate at acceptable levels of service, LOS C or better, during the morning and evening peak hours in the 2022 total condition. The intersection of Hayden Road/Frank Lloyd Wright Boulevard operates at an acceptable level of service in the morning peak hour and an unacceptable level of service in the evening peak hour in the 2022 total condition.

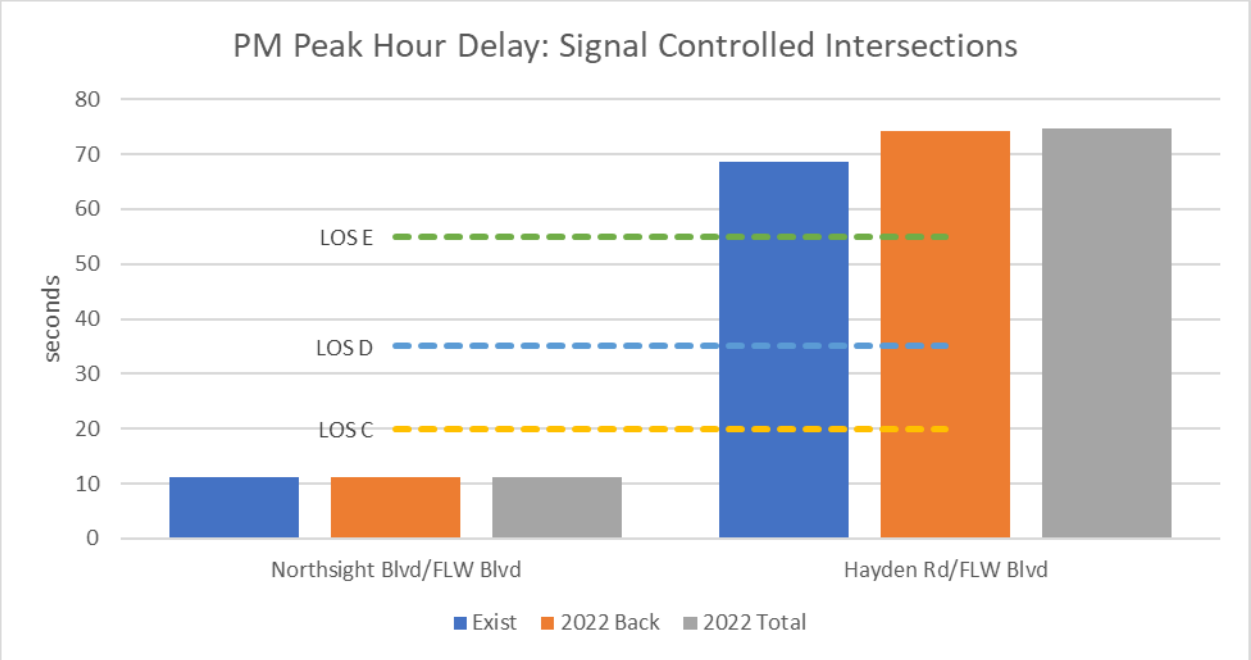
E. Comparison of Level of Service and Mitigation

Using the intersection average delay for the existing, background and total traffic conditions as presented in the previous sections of the report, graphs were developed that show the average peak hour delay per traffic signal-controlled intersection for each horizon year analyzed. The LOS boundary lines of C, D and E are represented on the graphs.

Per the City of Scottsdale Design Standards and Policies Manual, Section 5-1.800 All intersections must operate at LOS D or better during the peak traffic hour of the roadway system. In addition, all intersection approaches and intersection turning movements should operate at LOS D or better and must operate at LOS E during the peak hour of the roadway system. However, in areas where current levels of service or future levels of service without the development are E or worse, the delay or v/c ratio may not be significantly increased by the development traffic.

Graph 2 (AM Peak Hour) and Graph 3 (PM Peak Hour) illustrate a comparison of the average delay. The signal timing for the existing conditions was provided by the City of Scottsdale and are included in the Appendices.





VIII. CONCLUSIONS AND RECOMMENDATIONS

The proposed self-storage facility is planned to consist of 130,590 square feet of self-storage use located on the northwest corner of Pima Road/Frank Lloyd Wright Boulevard in Scottsdale, Arizona. The approximate 3.38 net acre site is currently zoned R1-35 (Single-Family Residential) with a proposed zoning change to C4 (General Commercial).

Site access into the development is proposed via two access driveways. Access A is planned to utilize the existing north leg of the Hayden Road/Frank Lloyd Wright Boulevard intersection that currently accesses the existing commercial development. Access B is planned as a right-out exit only access located on Frank Lloyd Wright Boulevard. The curb at Access B should be modified to limit traffic movements to right out only.

On a typical weekday the proposed development is estimated to generate 189 daily weekday trips with 12 trips occurring in the morning peak hour and 20 trips occurring in the evening peak hour. When compared to other land uses that could be developed on the site, the self-storage generates less trips than the uses considered.

The existing signalized study area intersection of Northsight Boulevard/Frank Lloyd Wright Boulevard operates at an acceptable overall level of service, LOS B or better, in the morning and evening peak hours of the 2021 existing condition year. The existing signalized intersection of Hayden Road/Frank Lloyd Wright Boulevard operates at an acceptable level of service in the morning peak hour, LOS C, and at an unacceptable level of service, LOS E, in the evening peak hour of the 2021 existing condition year.

For background traffic conditions in horizon year 2022, the signalized study area intersection of Northsight Boulevard/Frank Lloyd Wright Boulevard is forecasted to continue to operate at an acceptable overall level of service, LOS B or better, in the morning and evening peak hours. The signalized study area intersection of Hayden Road/Frank Lloyd Wright Boulevard is forecasted to continue to operate at an acceptable level of service, LOS C, in the morning peak hour and an unacceptable level of service, LOS E, in the evening peak hour.

For total traffic conditions in horizon year 2022, the signalized study area intersection of Northsight Boulevard/Frank Lloyd Wright Boulevard is forecasted to continue to operate at an acceptable overall level of service, LOS B or better, in the morning and evening peak hours. The signalized study area intersection of Hayden Road/Frank Lloyd Wright Boulevard is forecasted to continue to operate at an acceptable level of service, LOS C, in the morning peak hour and an unacceptable level of service, LOS E, in the evening peak hour. All movements at the proposed new exit only access on Frank Lloyd Wright Boulevard (Access B) are forecasted to operate at acceptable levels of service, LOS C or better, in the morning and evening peak hours of the 2022 total condition year.

Sight triangles shall be provided and maintained at site access points to give drivers exiting the site a clear view of oncoming traffic on Frank Lloyd Wright Boulevard. The landscape and hardscape within the sight triangles must not obstruct the driver's view of the adjacent travel lanes. Adequate sight distances and sight distance triangles should be provided as per DS&PM Figure 5.3-26 and Appendix 5-3B.

IX. LIMITATIONS

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

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

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

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

X. SOURCES

A Policy on Geometric Design of Highways and Streets, American Association of State Highway and Transportation Officials, 2018.

City of Scottsdale Design Standards & Policies Manual, 2018.

City of Scottsdale Transportation Master Plan, 2016.

Highway Capacity Manual, HCM 6th Edition, Transportation Research Board, 2016.

Manual on Uniform Traffic Control Devices, Federal Highway Administration, MUTCD 2009.

Trip Generation, 11th Edition, Institute of Transportation Engineers, 2021.

Appendix A

United Civil Group

Turning Movement Count

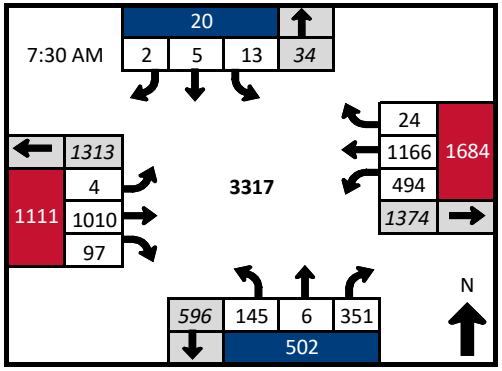
Project No: TR21011

Location: Hayden Road
and Frank Lloyd Wright Blvd

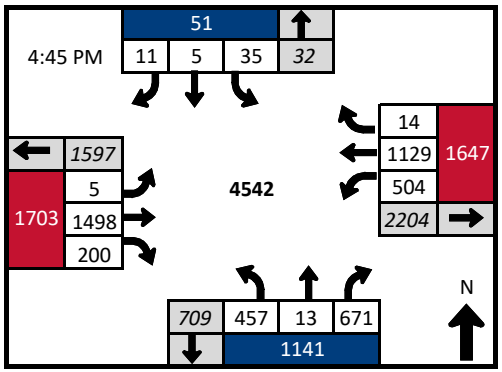
Intersection Configuration: Signalized

March 17, 2021 (Wednesday)

	Speed Limit	Lt	Lt\T	T	T/Rt	Rt	Lt/T/Rt	Lt/Rt
Northbound	45	1	1			1		
Southbound	15	1			1			
Eastbound	45	1		3		1		
Westbound	45	2		3		1		



	Hayden Road				Hayden Road				Frank Lloyd Wright Blvd				Frank Lloyd Wright Blvd				Total	Peak Hour
	Northbound				Southbound				Eastbound				Westbound					
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds		
7:00 AM	15	0	51	0	3	0	1	0	0	173	15	0	73	183	3	0	517	
7:15 AM	31	2	75	0	3	1	0	0	1	195	18	0	89	231	5	0	651	
7:30 AM	32	1	83	0	2	2	1	0	0	275	22	0	109	302	6	0	835	
7:45 AM	28	2	92	0	4	1	0	0	1	284	16	0	120	341	4	0	893	2896
8:00 AM	40	1	93	0	3	2	0	0	1	235	19	0	159	280	8	0	841	3220
8:15 AM	45	2	83	0	4	0	1	0	2	216	40	0	106	243	6	0	748	3317
8:30 AM	35	0	93	0	5	0	1	0	1	234	45	0	114	271	4	0	803	3285
8:45 AM	45	5	121	0	4	1	1	0	2	198	40	0	182	264	7	0	870	3262
Peak Hour Total	**145**	**6**	**351**	**0**	**13**	**5**	**2**	**0**	**4**	**1010**	**97**	**0**	**494**	**1166**	**24**	**0**	**3317**	
10% Increase	**160**	**7**	**387**	**0**	**15**	**6**	**3**	**0**	**5**	**1111**	**107**	**0**	**544**	**1283**	**27**	**0**	**3649**	



	Hayden Road				Hayden Road				Frank Lloyd Wright Blvd				Frank Lloyd Wright Blvd				Total	Peak Hour
	Northbound				Southbound				Eastbound				Westbound					
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds		
4:00 PM	124	15	169	0	8	7	1	0	3	333	60	0	166	260	5	0	1151	
4:15 PM	111	2	160	0	9	2	4	0	1	423	44	0	154	249	1	0	1160	
4:30 PM	137	3	168	0	7	1	4	0	1	352	47	0	136	223	6	0	1085	
4:45 PM	117	2	168	0	7	2	4	0	2	333	56	0	123	286	6	0	1106	4502
5:00 PM	111	9	172	0	17	1	6	0	3	380	43	0	118	249	4	0	1113	4464
5:15 PM	95	1	158	0	4	2	0	0	0	435	61	0	163	303	2	0	1224	4528
5:30 PM	134	1	173	0	7	0	1	0	0	350	40	0	100	291	2	0	1099	4542
5:45 PM	80	2	142	0	2	1	4	0	1	337	49	0	132	218	2	0	970	4406
Peak Hour Total	**457**	**13**	**671**	**0**	**35**	**5**	**11**	**0**	**5**	**1498**	**200**	**0**	**504**	**1129**	**14**	**0**	**4542**	
10% Increase	**503**	**15**	**739**	**0**	**39**	**6**	**13**	**0**	**6**	**1648**	**220**	**0**	**555**	**1242**	**16**	**0**	**4997**	

United Civil Group

Turning Movement Count

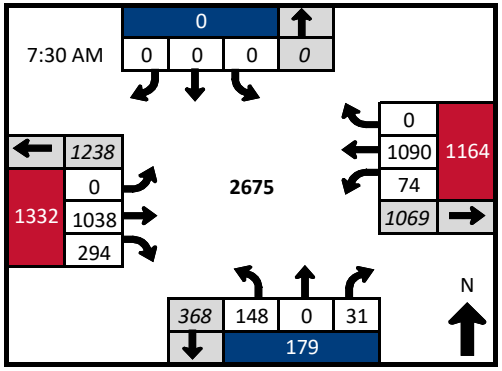
	Speed Limit	Lt	Lt\T	T	T/Rt	Rt	Lt/T/Rt	Lt/Rt
Northbound	25	2				1		
Southbound								
Eastbound	45			3		1		
Westbound	45	1		3				

Project No: TR21011

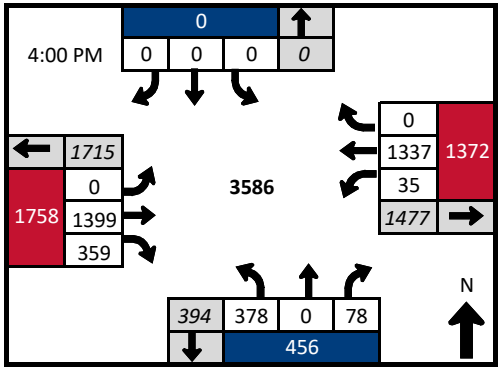
Location: Northsight Blvd and Frank Lloyd Wright Blvd

Intersection Configuration: Signalized

March 17, 2021 (Wednesday)



	Northsight Blvd				Northsight Blvd				Frank Lloyd Wright Blvd				Frank Lloyd Wright Blvd				Total	Peak Hour
	Northbound				Southbound				Eastbound				Westbound					
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds		
7:00 AM	22	0	5	0	0	0	0	0	0	163	46	0	17	169	0	0	422	
7:15 AM	25	0	7	0	0	0	0	0	0	200	54	0	16	217	0	0	519	
7:30 AM	26	0	3	0	0	0	0	0	0	282	64	0	18	279	0	0	672	
7:45 AM	45	0	5	0	0	0	0	0	0	300	75	0	22	301	0	0	748	2361
8:00 AM	31	0	11	0	0	0	0	0	0	224	79	0	16	266	0	0	627	2566
8:15 AM	46	0	12	0	0	0	0	0	0	232	76	0	18	244	0	0	628	2675
8:30 AM	29	0	5	0	0	0	0	0	0	260	79	0	12	263	0	0	648	2651
8:45 AM	43	0	8	0	0	0	0	0	0	226	99	0	17	270	0	0	663	2566
Peak Hour Total	**148**	**0**	**31**	**0**	**0**	**0**	**0**	**0**	**0**	**1038**	**294**	**0**	**74**	**1090**	**0**	**0**	**2675**	
10% Increase	**163**	**0**	**35**	**0**	**0**	**0**	**0**	**0**	**0**	**1142**	**324**	**0**	**82**	**1199**	**0**	**0**	**2943**	



	Northsight Blvd				Northsight Blvd				Frank Lloyd Wright Blvd				Frank Lloyd Wright Blvd				Total	Peak Hour
	Northbound				Southbound				Eastbound				Westbound					
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds		
4:00 PM	98	0	20	0	0	0	0	0	0	333	86	0	13	323	0	0	873	
4:15 PM	83	0	14	0	0	0	0	0	0	403	89	0	6	344	0	0	939	
4:30 PM	112	0	27	0	0	0	0	0	0	343	88	0	9	313	0	0	892	
4:45 PM	85	0	17	0	0	0	0	0	0	320	96	0	7	357	0	0	882	3586
5:00 PM	90	0	35	0	0	0	0	0	0	344	69	0	12	302	0	0	852	3565
5:15 PM	90	0	20	0	0	0	0	0	0	421	79	0	9	340	0	0	959	3585
5:30 PM	94	0	23	0	0	0	0	0	0	321	69	0	5	372	0	0	884	3577
5:45 PM	75	0	21	0	0	0	0	0	0	304	71	0	1	297	0	0	769	3464
Peak Hour Total	**378**	**0**	**78**	**0**	**0**	**0**	**0**	**0**	**0**	**1399**	**359**	**0**	**35**	**1337**	**0**	**0**	**3586**	
10% Increase	**416**	**0**	**86**	**0**	**0**	**0**	**0**	**0**	**0**	**1539**	**395**	**0**	**39**	**1471**	**0**	**0**	**3945**	

Appendix B

Intersection Level Of Service Report

Intersection 1: Northsight Boulevard & Frank Lloyd Wright Boulevard

Control Type:	Signalized	Delay (sec / veh):	7.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.307

Intersection Setup

Name	Northsight Boulevard		Frank Lloyd Wright Boulevard		Frank Lloyd Wright Boulevard	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	1	1	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	110.00	90.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	Northsight Boulevard		Frank Lloyd Wright Boulevard		Frank Lloyd Wright Boulevard	
Base Volume Input [veh/h]	163	35	1142	324	82	1199
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	18	0	81	0	0
Total Hourly Volume [veh/h]	163	17	1142	243	82	1199
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	44	5	310	66	22	326
Total Analysis Volume [veh/h]	177	18	1241	264	89	1303
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive
Signal Group	8	0	2	0	1	6
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	0	10	0	5	10
Maximum Green [s]	55	0	70	0	45	75
Amber [s]	3.0	0.0	4.7	0.0	4.0	4.7
All red [s]	2.0	0.0	1.0	0.0	2.0	1.0
Split [s]	25	0	83	0	12	95
Vehicle Extension [s]	2.0	0.0	3.0	0.0	2.0	3.0
Walk [s]	5	0	5	0	0	5
Pedestrian Clearance [s]	10	0	10	0	0	10
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	3.0	0.0	3.7	0.0	4.0	3.7
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.00	5.00	5.70	5.70	5.70	5.70
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.70	3.70	0.00	3.70
g_i, Effective Green Time [s]	8	8	90	90	101	101
g / C, Green / Cycle	0.07	0.07	0.75	0.75	0.84	0.84
(v / s)_i Volume / Saturation Flow Rate	0.05	0.01	0.24	0.17	0.16	0.26
s, saturation flow rate [veh/h]	3459	1589	5094	1589	565	5094
c, Capacity [veh/h]	240	110	3828	1195	527	4287
d1, Uniform Delay [s]	54.84	52.63	4.90	4.45	2.13	2.02
k, delay calibration	0.04	0.04	0.50	0.50	0.04	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.68	0.26	0.23	0.43	0.06	0.18
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.74	0.16	0.32	0.22	0.17	0.30
d, Delay for Lane Group [s/veh]	56.52	52.88	5.13	4.87	2.18	2.21
Lane Group LOS	E	D	A	A	A	A
Critical Lane Group	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.70	0.52	2.65	1.63	0.17	1.07
50th-Percentile Queue Length [ft/ln]	67.61	13.12	66.27	40.74	4.20	26.69
95th-Percentile Queue Length [veh/ln]	4.87	0.94	4.77	2.93	0.30	1.92
95th-Percentile Queue Length [ft/ln]	121.70	23.62	119.28	73.34	7.55	48.04

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	56.52	52.88	5.13	4.87	2.18	2.21
Movement LOS	E	D	A	A	A	A
d_A, Approach Delay [s/veh]	56.18		5.08		2.21	
Approach LOS	E		A		A	
d_I, Intersection Delay [s/veh]	7.01					
Intersection LOS	A					
Intersection V/C	0.307					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000
Crosswalk LOS	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	333	1288	1488
d_b, Bicycle Delay [s]	41.70	7.62	3.94
l_b,int, Bicycle LOS Score for Intersection	1.560	2.432	2.325
Bicycle LOS	A	B	B

Sequence

Ring 1	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report

Intersection 2: Hayden Road & Frank Lloyd Wright Boulevard

Control Type:	Signalized	Delay (sec / veh):	29.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.615

Intersection Setup

Name	Hayden Road			Hayden Road			Fr LI			Fr LI		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	1	2	0	1
Entry Pocket Length [ft]	190.00	100.00	300.00	70.00	100.00	100.00	125.00	100.00	460.00	265.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21	0.00	0.00	0.00
Speed [mph]	45.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	Hayden Road			Hayden Road			Fr LI			Fr LI		
Base Volume Input [veh/h]	160	7	387	15	6	3	5	1111	107	544	1283	27
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	97	0	0	0	0	0	54	0	0	14
Total Hourly Volume [veh/h]	160	7	290	15	6	3	5	1111	53	544	1283	13
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	43	2	79	4	2	1	1	302	14	148	349	4
Total Analysis Volume [veh/h]	174	8	315	16	7	3	5	1208	58	591	1395	14
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	108
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	5	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	5	5	0	5	10	0	5	10	0
Maximum Green [s]	0	60	0	30	55	0	30	65	0	40	65	0
Amber [s]	0.0	4.4	0.0	4.0	3.3	0.0	4.0	4.7	0.0	4.0	4.7	0.0
All red [s]	0.0	1.5	0.0	2.0	2.7	0.0	2.0	1.0	0.0	2.0	1.0	0.0
Split [s]	0	24	0	11	12	0	11	53	0	31	73	0
Vehicle Extension [s]	0.0	2.0	0.0	1.0	2.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Walk [s]	0	4	0	0	4	0	0	4	0	0	4	0
Pedestrian Clearance [s]	0	37	0	0	35	0	0	23	0	0	13	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.9	0.0	4.0	4.0	0.0	4.0	3.7	0.0	4.0	3.7	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	R	L	C	R
C, Cycle Length [s]	108	108	108	108	108	108	108	108	108	108	108
L, Total Lost Time per Cycle [s]	5.90	5.90	5.90	6.00	6.00	6.00	5.70	5.70	6.00	5.70	5.70
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.90	3.90	3.90	4.00	4.00	4.00	3.70	3.70	4.00	3.70	3.70
g_i, Effective Green Time [s]	21	21	21	3	3	1	40	40	20	60	60
g / C, Green / Cycle	0.20	0.20	0.20	0.03	0.03	0.01	0.37	0.37	0.19	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.05	0.05	0.20	0.01	0.01	0.00	0.24	0.04	0.17	0.27	0.01
s, saturation flow rate [veh/h]	1781	1788	1589	1781	1776	1781	5094	1589	3459	5094	1589
c, Capacity [veh/h]	350	351	312	45	45	12	1896	592	649	2819	880
d1, Uniform Delay [s]	36.74	36.74	43.39	51.79	51.62	53.46	27.89	22.08	42.99	14.83	10.87
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.04	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.14	0.14	16.53	1.79	0.93	9.24	1.65	0.33	2.15	0.62	0.03
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.26	0.26	1.01	0.36	0.22	0.43	0.64	0.10	0.91	0.49	0.02
d, Delay for Lane Group [s/veh]	36.88	36.88	59.92	53.58	52.55	62.70	29.54	22.42	45.14	15.46	10.90
Lane Group LOS	D	D	F	D	D	E	C	C	D	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.98	1.99	9.41	0.45	0.28	0.16	8.36	0.97	7.61	6.47	0.15
50th-Percentile Queue Length [ft/ln]	49.43	49.64	235.25	11.29	6.97	4.03	208.99	24.37	190.26	161.85	3.68
95th-Percentile Queue Length [veh/ln]	3.56	3.57	14.50	0.81	0.50	0.29	13.10	1.75	12.13	10.65	0.27
95th-Percentile Queue Length [ft/ln]	88.98	89.35	362.59	20.32	12.55	7.25	327.53	43.86	303.37	266.17	6.63

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	36.88	36.88	59.92	53.58	52.55	52.55	62.70	29.54	22.42	45.14	15.46	10.90
Movement LOS	D	D	F	D	D	D	E	C	C	D	B	B
d_A, Approach Delay [s/veh]	51.49			53.18			29.35			24.20		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	29.70											
Intersection LOS	C											
Intersection V/C	0.615											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	335	111	876	1246
d_b, Bicycle Delay [s]	37.42	48.17	17.06	7.67
l_b,int, Bicycle LOS Score for Intersection	2.540	1.603	2.288	2.667
Bicycle LOS	B	A	B	B

Sequence

Ring 1	2	1	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report

Intersection 1: Northsight Boulevard & Frank Lloyd Wright Boulevard

Control Type:	Signalized	Delay (sec / veh):	12.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.466

Intersection Setup

Name	Northsight Boulevard		Frank Lloyd Wright Boulevard		Frank Lloyd Wright Boulevard	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	1	1	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	110.00	90.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	Northsight Boulevard		Frank Lloyd Wright Boulevard		Frank Lloyd Wright Boulevard	
Base Volume Input [veh/h]	416	86	1539	395	39	1471
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	43	0	99	0	0
Total Hourly Volume [veh/h]	416	43	1539	296	39	1471
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	113	12	418	80	11	400
Total Analysis Volume [veh/h]	452	47	1673	322	42	1599
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive
Signal Group	8	0	2	0	1	6
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	0	10	0	5	10
Maximum Green [s]	55	0	70	0	45	75
Amber [s]	3.0	0.0	4.7	0.0	4.0	4.7
All red [s]	2.0	0.0	1.0	0.0	2.0	1.0
Split [s]	30	0	78	0	12	90
Vehicle Extension [s]	2.0	0.0	3.0	0.0	2.0	3.0
Walk [s]	5	0	5	0	0	5
Pedestrian Clearance [s]	10	0	10	0	0	10
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	3.0	0.0	3.7	0.0	4.0	3.7
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.00	5.00	5.70	5.70	5.70	5.70
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.70	3.70	0.00	3.70
g_i, Effective Green Time [s]	18	18	82	82	91	91
g / C, Green / Cycle	0.15	0.15	0.68	0.68	0.76	0.76
(v / s)_i Volume / Saturation Flow Rate	0.13	0.03	0.33	0.20	0.10	0.31
s, saturation flow rate [veh/h]	3459	1589	5094	1589	424	5094
c, Capacity [veh/h]	518	238	3459	1079	364	3877
d1, Uniform Delay [s]	49.94	44.74	9.21	7.76	5.38	5.00
k, delay calibration	0.04	0.04	0.50	0.50	0.04	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.85	0.15	0.49	0.71	0.05	0.33
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.87	0.20	0.48	0.30	0.12	0.41
d, Delay for Lane Group [s/veh]	51.79	44.89	9.70	8.47	5.44	5.32
Lane Group LOS	D	D	A	A	A	A
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	6.82	1.26	6.07	3.09	0.19	3.53
50th-Percentile Queue Length [ft/ln]	170.42	31.38	151.65	77.15	4.85	88.20
95th-Percentile Queue Length [veh/ln]	11.10	2.26	10.11	5.56	0.35	6.35
95th-Percentile Queue Length [ft/ln]	277.46	56.48	252.63	138.88	8.73	158.76

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	51.79	44.89	9.70	8.47	5.44	5.32
Movement LOS	D	D	A	A	A	A
d_A, Approach Delay [s/veh]	51.14		9.50		5.32	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	12.87					
Intersection LOS	B					
Intersection V/C	0.466					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000
Crosswalk LOS	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	416	1204	1404
d_b, Bicycle Delay [s]	37.64	9.50	5.33
l_b,int, Bicycle LOS Score for Intersection	1.560	2.711	2.462
Bicycle LOS	A	B	B

Sequence

Ring 1	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report

Intersection 2: Hayden Road & Frank Lloyd Wright Boulevard

Control Type:	Signalized	Delay (sec / veh):	89.9
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.928

Intersection Setup

Name	Hayden Road			Hayden Road			Fr LI			Fr LI		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	1	2	0	1
Entry Pocket Length [ft]	190.00	100.00	300.00	70.00	100.00	100.00	125.00	100.00	460.00	265.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21	0.00	0.00	0.00
Speed [mph]	45.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	Hayden Road			Hayden Road			Fr LI			Fr LI		
Base Volume Input [veh/h]	503	15	739	39	6	13	6	1648	220	555	1242	16
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	185	0	0	0	0	0	110	0	0	8
Total Hourly Volume [veh/h]	503	15	554	39	6	13	6	1648	110	555	1242	8
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	137	4	151	11	2	4	2	448	30	151	338	2
Total Analysis Volume [veh/h]	547	16	602	42	7	14	7	1791	120	603	1350	9
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	5	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	5	5	0	5	10	0	5	10	0
Maximum Green [s]	0	60	0	30	55	0	30	65	0	40	65	0
Amber [s]	0.0	4.4	0.0	4.0	3.3	0.0	4.0	4.7	0.0	4.0	4.7	0.0
All red [s]	0.0	1.5	0.0	2.0	2.7	0.0	2.0	1.0	0.0	2.0	1.0	0.0
Split [s]	0	28	0	9	14	0	9	55	0	23	67	0
Vehicle Extension [s]	0.0	2.0	0.0	1.0	2.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Walk [s]	0	4	0	0	4	0	0	4	0	0	4	0
Pedestrian Clearance [s]	0	37	0	0	35	0	0	23	0	0	13	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.9	0.0	4.0	4.0	0.0	4.0	3.7	0.0	4.0	3.7	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.90	5.90	5.90	6.00	6.00	6.00	5.70	5.70	6.00	5.70	5.70
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.90	3.90	3.90	4.00	4.00	4.00	3.70	3.70	4.00	3.70	3.70
g_i, Effective Green Time [s]	26	26	26	4	4	1	49	49	17	65	65
g / C, Green / Cycle	0.21	0.21	0.21	0.04	0.04	0.01	0.41	0.41	0.14	0.54	0.54
(v / s)_i Volume / Saturation Flow Rate	0.16	0.16	0.38	0.02	0.01	0.00	0.35	0.08	0.17	0.27	0.01
s, saturation flow rate [veh/h]	1781	1786	1589	1781	1673	1781	5094	1589	3459	5094	1589
c, Capacity [veh/h]	379	380	338	65	61	15	2100	655	490	2777	866
d1, Uniform Delay [s]	44.15	44.13	47.23	57.04	56.40	59.20	31.98	22.43	51.50	16.89	12.49
k, delay calibration	0.04	0.04	0.23	0.04	0.04	0.04	0.50	0.50	0.04	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.09	1.07	356.09	3.92	1.23	7.45	4.65	0.62	105.35	0.61	0.02
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.74	0.74	1.78	0.64	0.34	0.45	0.85	0.18	1.23	0.49	0.01
d, Delay for Lane Group [s/veh]	45.24	45.20	403.32	60.96	57.63	66.65	36.63	23.04	156.85	17.50	12.51
Lane Group LOS	D	D	F	E	E	E	D	C	F	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	7.69	7.68	43.21	1.34	0.65	0.24	15.68	2.20	14.32	7.27	0.11
50th-Percentile Queue Length [ft/ln]	192.19	192.06	1080.33	33.45	16.18	5.98	392.08	54.89	357.96	181.77	2.76
95th-Percentile Queue Length [veh/ln]	12.23	12.23	67.84	2.41	1.17	0.43	22.18	3.95	22.40	11.69	0.20
95th-Percentile Queue Length [ft/ln]	305.87	305.70	1696.03	60.21	29.13	10.77	554.45	98.79	560.00	292.33	4.97

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.22	45.20	403.32	60.96	57.63	57.63	66.65	36.63	23.04	156.85	17.50	12.51
Movement LOS	D	D	F	E	E	E	E	D	C	F	B	B
d_A, Approach Delay [s/veh]	230.26			59.85			35.89			60.31		
Approach LOS	F			E			D			E		
d_I, Intersection Delay [s/veh]	89.89											
Intersection LOS	F											
Intersection V/C	0.928											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	368	133	822	1022
d_b, Bicycle Delay [s]	39.94	52.27	20.83	14.36
I_b,int, Bicycle LOS Score for Intersection	3.787	1.664	2.675	2.643
Bicycle LOS	D	A	B	B

Sequence

Ring 1	2	1	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report

Intersection 1: Northsight Boulevard & Frank Lloyd Wright Boulevard

Control Type:	Signalized	Delay (sec / veh):	7.1
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.313

Intersection Setup

Name	Northsight Boulevard		Frank Lloyd Wright Boulevard		Frank Lloyd Wright Boulevard	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	1	1	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	110.00	90.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	Northsight Boulevard		Frank Lloyd Wright Boulevard		Frank Lloyd Wright Boulevard	
Base Volume Input [veh/h]	163	35	1142	324	82	1199
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	18	0	83	0	0
Total Hourly Volume [veh/h]	166	18	1165	247	84	1223
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	45	5	317	67	23	332
Total Analysis Volume [veh/h]	180	20	1266	268	91	1329
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive
Signal Group	8	0	2	0	1	6
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	0	10	0	5	10
Maximum Green [s]	55	0	70	0	45	75
Amber [s]	3.0	0.0	4.7	0.0	4.0	4.7
All red [s]	2.0	0.0	1.0	0.0	2.0	1.0
Split [s]	25	0	83	0	12	95
Vehicle Extension [s]	2.0	0.0	3.0	0.0	2.0	3.0
Walk [s]	5	0	5	0	0	5
Pedestrian Clearance [s]	10	0	10	0	0	10
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	3.0	0.0	3.7	0.0	4.0	3.7
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.00	5.00	5.70	5.70	5.70	5.70
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.70	3.70	0.00	3.70
g_i, Effective Green Time [s]	8	8	90	90	101	101
g / C, Green / Cycle	0.07	0.07	0.75	0.75	0.84	0.84
(v / s)_i Volume / Saturation Flow Rate	0.05	0.01	0.25	0.17	0.16	0.26
s, saturation flow rate [veh/h]	3459	1589	5094	1589	555	5094
c, Capacity [veh/h]	243	112	3823	1193	518	4283
d1, Uniform Delay [s]	54.78	52.59	4.98	4.50	2.19	2.06
k, delay calibration	0.04	0.04	0.50	0.50	0.04	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.68	0.28	0.23	0.44	0.06	0.19
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.74	0.18	0.33	0.22	0.18	0.31
d, Delay for Lane Group [s/veh]	56.46	52.87	5.21	4.93	2.25	2.25
Lane Group LOS	E	D	A	A	A	A
Critical Lane Group	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.75	0.58	2.74	1.67	0.17	1.11
50th-Percentile Queue Length [ft/ln]	68.74	14.58	68.54	41.78	4.37	27.87
95th-Percentile Queue Length [veh/ln]	4.95	1.05	4.94	3.01	0.31	2.01
95th-Percentile Queue Length [ft/ln]	123.74	26.25	123.38	75.20	7.87	50.17

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	56.46	52.87	5.21	4.93	2.25	2.25
Movement LOS	E	D	A	A	A	A
d_A, Approach Delay [s/veh]	56.10		5.16		2.25	
Approach LOS	E		A		A	
d_I, Intersection Delay [s/veh]	7.08					
Intersection LOS	A					
Intersection V/C	0.313					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000
Crosswalk LOS	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	333	1288	1488
d_b, Bicycle Delay [s]	41.70	7.62	3.94
l_b,int, Bicycle LOS Score for Intersection	1.560	2.449	2.341
Bicycle LOS	A	B	B

Sequence

Ring 1	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report

Intersection 2: Hayden Road & Frank Lloyd Wright Boulevard

Control Type:	Signalized	Delay (sec / veh):	35.1
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.628

Intersection Setup

Name	Hayden Road			Hayden Road			Fr LI			Fr LI		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	1	2	0	1
Entry Pocket Length [ft]	190.00	100.00	300.00	70.00	100.00	100.00	125.00	100.00	460.00	265.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21	0.00	0.00	0.00
Speed [mph]	45.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	Hayden Road			Hayden Road			Fr LI			Fr LI		
Base Volume Input [veh/h]	160	7	387	15	6	3	5	1111	107	544	1283	27
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0200	1.0000	1.0200	1.0000	1.0000	1.0000	1.0000	1.0200	1.0200	1.0200	1.0200	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	99	0	0	0	0	0	55	0	0	14
Total Hourly Volume [veh/h]	163	7	296	15	6	3	5	1133	54	555	1309	13
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	44	2	80	4	2	1	1	308	15	151	356	4
Total Analysis Volume [veh/h]	177	8	322	16	7	3	5	1232	59	603	1423	14
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	5	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	5	5	0	5	10	0	5	10	0
Maximum Green [s]	0	60	0	30	55	0	30	65	0	40	65	0
Amber [s]	0.0	4.4	0.0	4.0	3.3	0.0	4.0	4.7	0.0	4.0	4.7	0.0
All red [s]	0.0	1.5	0.0	2.0	2.7	0.0	2.0	1.0	0.0	2.0	1.0	0.0
Split [s]	0	24	0	9	12	0	9	53	0	31	73	0
Vehicle Extension [s]	0.0	2.0	0.0	1.0	2.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Walk [s]	0	4	0	0	4	0	0	4	0	0	4	0
Pedestrian Clearance [s]	0	37	0	0	35	0	0	23	0	0	13	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.9	0.0	4.0	4.0	0.0	4.0	3.7	0.0	4.0	3.7	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.90	5.90	5.90	6.00	6.00	6.00	5.70	5.70	6.00	5.70	5.70
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.90	3.90	3.90	4.00	4.00	4.00	3.70	3.70	4.00	3.70	3.70
g_i, Effective Green Time [s]	21	21	21	3	3	1	50	50	23	72	72
g / C, Green / Cycle	0.18	0.18	0.18	0.02	0.02	0.01	0.41	0.41	0.19	0.60	0.60
(v / s)_i Volume / Saturation Flow Rate	0.05	0.05	0.20	0.01	0.01	0.00	0.24	0.04	0.17	0.28	0.01
s, saturation flow rate [veh/h]	1781	1788	1589	1781	1776	1781	5094	1589	3459	5094	1589
c, Capacity [veh/h]	312	314	279	43	43	11	2113	659	654	3043	949
d1, Uniform Delay [s]	43.03	43.03	49.48	57.65	57.46	59.40	27.11	21.34	47.80	13.50	9.82
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.04	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.19	0.19	73.29	1.97	1.02	9.45	1.18	0.27	2.46	0.52	0.03
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.30	0.30	1.15	0.37	0.23	0.44	0.58	0.09	0.92	0.47	0.01
d, Delay for Lane Group [s/veh]	43.22	43.22	122.77	59.62	58.48	68.86	28.29	21.61	50.26	14.02	9.85
Lane Group LOS	D	D	F	E	E	E	C	C	D	B	A
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.34	2.35	13.76	0.51	0.31	0.18	8.88	1.03	8.79	6.65	0.15
50th-Percentile Queue Length [ft/ln]	58.59	58.83	344.01	12.65	7.81	4.45	221.95	25.68	219.85	166.20	3.68
95th-Percentile Queue Length [veh/ln]	4.22	4.24	21.24	0.91	0.56	0.32	13.76	1.85	13.66	10.88	0.26
95th-Percentile Queue Length [ft/ln]	105.47	105.90	530.97	22.76	14.06	8.02	344.12	46.22	341.43	271.91	6.62

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	43.22	43.22	122.77	59.62	58.48	58.48	68.86	28.29	21.61	50.26	14.02	9.85
Movement LOS	D	D	F	E	E	E	E	C	C	D	B	A
d_A, Approach Delay [s/veh]	93.74			59.18			28.14			24.70		
Approach LOS	F			E			C			C		
d_I, Intersection Delay [s/veh]	35.14											
Intersection LOS	D											
Intersection V/C	0.628											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	302	100	788	1122
d_b, Bicycle Delay [s]	43.27	54.15	22.02	11.57
l_b,int, Bicycle LOS Score for Intersection	2.560	1.603	2.303	2.689
Bicycle LOS	B	A	B	B

Sequence

Ring 1	2	1	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report

Intersection 1: Northsight Boulevard & Frank Lloyd Wright Boulevard

Control Type:	Signalized	Delay (sec / veh):	13.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.476

Intersection Setup

Name	Northsight Boulevard		Frank Lloyd Wright Boulevard		Frank Lloyd Wright Boulevard	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	1	1	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	110.00	90.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	Northsight Boulevard		Frank Lloyd Wright Boulevard		Frank Lloyd Wright Boulevard	
Base Volume Input [veh/h]	416	86	1539	395	39	1471
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	44	0	101	0	0
Total Hourly Volume [veh/h]	424	44	1570	302	40	1500
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	115	12	427	82	11	408
Total Analysis Volume [veh/h]	461	48	1707	328	43	1630
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive
Signal Group	8	0	2	0	1	6
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	0	10	0	5	10
Maximum Green [s]	55	0	70	0	45	75
Amber [s]	3.0	0.0	4.7	0.0	4.0	4.7
All red [s]	2.0	0.0	1.0	0.0	2.0	1.0
Split [s]	30	0	78	0	12	90
Vehicle Extension [s]	2.0	0.0	3.0	0.0	2.0	3.0
Walk [s]	5	0	5	0	0	5
Pedestrian Clearance [s]	10	0	10	0	0	10
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	3.0	0.0	3.7	0.0	4.0	3.7
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.00	5.00	5.70	5.70	5.70	5.70
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.70	3.70	0.00	3.70
g_i, Effective Green Time [s]	18	18	81	81	91	91
g / C, Green / Cycle	0.15	0.15	0.68	0.68	0.76	0.76
(v / s)_i Volume / Saturation Flow Rate	0.13	0.03	0.34	0.21	0.10	0.32
s, saturation flow rate [veh/h]	3459	1589	5094	1589	416	5094
c, Capacity [veh/h]	527	242	3444	1075	356	3864
d1, Uniform Delay [s]	49.79	44.50	9.48	7.94	5.63	5.15
k, delay calibration	0.04	0.04	0.50	0.50	0.04	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.85	0.15	0.51	0.73	0.06	0.34
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.87	0.20	0.50	0.31	0.12	0.42
d, Delay for Lane Group [s/veh]	51.64	44.65	9.99	8.67	5.69	5.49
Lane Group LOS	D	D	A	A	A	A
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	6.95	1.28	6.34	3.20	0.20	3.70
50th-Percentile Queue Length [ft/ln]	173.76	31.95	158.43	80.02	5.07	92.46
95th-Percentile Queue Length [veh/ln]	11.27	2.30	10.47	5.76	0.36	6.66
95th-Percentile Queue Length [ft/ln]	281.85	57.52	261.64	144.03	9.12	166.42

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	51.64	44.65	9.99	8.67	5.69	5.49
Movement LOS	D	D	A	A	A	A
d_A, Approach Delay [s/veh]	50.98		9.78		5.49	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	13.05					
Intersection LOS	B					
Intersection V/C	0.476					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000
Crosswalk LOS	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	416	1204	1404
d_b, Bicycle Delay [s]	37.64	9.50	5.33
l_b,int, Bicycle LOS Score for Intersection	1.560	2.734	2.480
Bicycle LOS	A	B	B

Sequence

Ring 1	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report

Intersection 2: Hayden Road & Frank Lloyd Wright Boulevard

Control Type:	Signalized	Delay (sec / veh):	93.5
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.946

Intersection Setup

Name	Hayden Road			Hayden Road			Fr LI			Fr LI		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	1	2	0	1
Entry Pocket Length [ft]	190.00	100.00	300.00	70.00	100.00	100.00	125.00	100.00	460.00	265.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21	0.00	0.00	0.00
Speed [mph]	45.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	Hayden Road			Hayden Road			Fr LI			Fr LI		
Base Volume Input [veh/h]	503	15	739	39	6	13	6	1648	220	555	1242	16
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0200	1.0000	1.0200	1.0000	1.0000	1.0000	1.0000	1.0200	1.0200	1.0200	1.0200	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	189	0	0	0	0	0	112	0	0	8
Total Hourly Volume [veh/h]	513	15	565	39	6	13	6	1681	112	566	1267	8
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	139	4	154	11	2	4	2	457	30	154	344	2
Total Analysis Volume [veh/h]	558	16	614	42	7	14	7	1827	122	615	1377	9
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	5	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	5	5	0	5	10	0	5	10	0
Maximum Green [s]	0	60	0	30	55	0	30	65	0	40	65	0
Amber [s]	0.0	4.4	0.0	4.0	3.3	0.0	4.0	4.7	0.0	4.0	4.7	0.0
All red [s]	0.0	1.5	0.0	2.0	2.7	0.0	2.0	1.0	0.0	2.0	1.0	0.0
Split [s]	0	28	0	9	14	0	9	55	0	23	67	0
Vehicle Extension [s]	0.0	2.0	0.0	1.0	2.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Walk [s]	0	4	0	0	4	0	0	4	0	0	4	0
Pedestrian Clearance [s]	0	37	0	0	35	0	0	23	0	0	13	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.9	0.0	4.0	4.0	0.0	4.0	3.7	0.0	4.0	3.7	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.90	5.90	5.90	6.00	6.00	6.00	5.70	5.70	6.00	5.70	5.70
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.90	3.90	3.90	4.00	4.00	4.00	3.70	3.70	4.00	3.70	3.70
g_i, Effective Green Time [s]	26	26	26	4	4	1	49	49	17	65	65
g / C, Green / Cycle	0.21	0.21	0.21	0.04	0.04	0.01	0.41	0.41	0.14	0.54	0.54
(v / s)_i Volume / Saturation Flow Rate	0.16	0.16	0.39	0.02	0.01	0.00	0.36	0.08	0.18	0.27	0.01
s, saturation flow rate [veh/h]	1781	1786	1589	1781	1673	1781	5094	1589	3459	5094	1589
c, Capacity [veh/h]	379	380	338	65	61	15	2099	655	490	2777	866
d1, Uniform Delay [s]	44.31	44.29	47.23	57.04	56.40	59.20	32.33	22.46	51.50	17.02	12.49
k, delay calibration	0.04	0.04	0.25	0.04	0.04	0.04	0.50	0.50	0.04	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.17	1.16	372.05	3.92	1.23	7.45	5.28	0.63	116.25	0.64	0.02
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.76	0.75	1.81	0.64	0.34	0.45	0.87	0.19	1.26	0.50	0.01
d, Delay for Lane Group [s/veh]	45.48	45.44	419.28	60.96	57.63	66.65	37.61	23.09	167.76	17.65	12.51
Lane Group LOS	D	D	F	E	E	E	D	C	F	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	7.87	7.87	44.72	1.34	0.65	0.24	16.27	2.24	15.06	7.47	0.11
50th-Percentile Queue Length [ft/ln]	196.82	196.68	1118.07	33.45	16.18	5.98	406.72	55.89	376.51	186.82	2.76
95th-Percentile Queue Length [veh/ln]	12.47	12.47	70.28	2.41	1.17	0.43	22.88	4.02	23.56	11.96	0.20
95th-Percentile Queue Length [ft/ln]	311.85	311.68	1757.03	60.21	29.13	10.77	572.09	100.59	588.97	298.89	4.97

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.46	45.44	419.28	60.96	57.63	57.63	66.65	37.61	23.09	167.76	17.65	12.51
Movement LOS	D	D	F	E	E	E	E	D	C	F	B	B
d_A, Approach Delay [s/veh]	238.66			59.85			36.81			63.76		
Approach LOS	F			E			D			E		
d_I, Intersection Delay [s/veh]	93.49											
Intersection LOS	F											
Intersection V/C	0.946											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	368	133	822	1022
d_b, Bicycle Delay [s]	39.94	52.27	20.83	14.36
l_b,int, Bicycle LOS Score for Intersection	3.832	1.664	2.697	2.665
Bicycle LOS	D	A	B	B

Sequence

Ring 1	2	1	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report

Intersection 1: Northsight Boulevard & Frank Lloyd Wright Boulevard

Control Type:	Signalized	Delay (sec / veh):	7.1
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.313

Intersection Setup

Name	Northsight Boulevard		Frank Lloyd Wright Boulevard		Frank Lloyd Wright Boulevard	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	1	1	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	110.00	90.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	Northsight Boulevard		Frank Lloyd Wright Boulevard		Frank Lloyd Wright Boulevard	
Base Volume Input [veh/h]	163	35	1142	324	82	1199
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	2	0	0	1
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	18	0	83	0	0
Total Hourly Volume [veh/h]	166	18	1167	247	84	1224
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	45	5	317	67	23	333
Total Analysis Volume [veh/h]	180	20	1268	268	91	1330
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive
Signal Group	8	0	2	0	1	6
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	0	10	0	5	10
Maximum Green [s]	55	0	70	0	45	75
Amber [s]	3.0	0.0	4.7	0.0	4.0	4.7
All red [s]	2.0	0.0	1.0	0.0	2.0	1.0
Split [s]	25	0	83	0	12	95
Vehicle Extension [s]	2.0	0.0	3.0	0.0	2.0	3.0
Walk [s]	5	0	5	0	0	5
Pedestrian Clearance [s]	10	0	10	0	0	10
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	3.0	0.0	3.7	0.0	4.0	3.7
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.00	5.00	5.70	5.70	5.70	5.70
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.70	3.70	0.00	3.70
g_i, Effective Green Time [s]	8	8	90	90	101	101
g / C, Green / Cycle	0.07	0.07	0.75	0.75	0.84	0.84
(v / s)_i Volume / Saturation Flow Rate	0.05	0.01	0.25	0.17	0.16	0.26
s, saturation flow rate [veh/h]	3459	1589	5094	1589	555	5094
c, Capacity [veh/h]	243	112	3823	1193	517	4283
d1, Uniform Delay [s]	54.78	52.59	4.98	4.50	2.19	2.06
k, delay calibration	0.04	0.04	0.50	0.50	0.04	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.68	0.28	0.23	0.44	0.06	0.19
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.74	0.18	0.33	0.22	0.18	0.31
d, Delay for Lane Group [s/veh]	56.46	52.87	5.21	4.93	2.25	2.25
Lane Group LOS	E	D	A	A	A	A
Critical Lane Group	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.75	0.58	2.75	1.67	0.17	1.12
50th-Percentile Queue Length [ft/ln]	68.74	14.58	68.69	41.78	4.37	27.90
95th-Percentile Queue Length [veh/ln]	4.95	1.05	4.95	3.01	0.31	2.01
95th-Percentile Queue Length [ft/ln]	123.74	26.25	123.64	75.20	7.87	50.22

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	56.46	52.87	5.21	4.93	2.25	2.25
Movement LOS	E	D	A	A	A	A
d_A, Approach Delay [s/veh]	56.10		5.16		2.25	
Approach LOS	E		A		A	
d_I, Intersection Delay [s/veh]	7.08					
Intersection LOS	A					
Intersection V/C	0.313					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000
Crosswalk LOS	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	333	1288	1488
d_b, Bicycle Delay [s]	41.70	7.62	3.94
l_b,int, Bicycle LOS Score for Intersection	1.560	2.450	2.341
Bicycle LOS	A	B	B

Sequence

Ring 1	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report

Intersection 2: Hayden Road & Frank Lloyd Wright Boulevard

Control Type:	Signalized	Delay (sec / veh):	36.1
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.630

Intersection Setup

Name	Hayden Road			Hayden Road			Fr LI			Fr LI		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	1	2	0	1
Entry Pocket Length [ft]	190.00	100.00	300.00	70.00	100.00	100.00	125.00	100.00	460.00	265.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21	0.00	0.00	0.00
Speed [mph]	45.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	Hayden Road			Hayden Road			Fr LI			Fr LI		
Base Volume Input [veh/h]	160	7	387	15	6	3	5	1111	107	544	1283	27
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0200	1.0000	1.0200	1.0000	1.0000	1.0000	1.0000	1.0200	1.0200	1.0200	1.0200	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	3	1	1	2	0	0	0	0	4
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	99	0	0	0	0	0	55	0	0	16
Total Hourly Volume [veh/h]	163	9	296	18	7	4	7	1133	54	555	1309	15
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	44	2	80	5	2	1	2	308	15	151	356	4
Total Analysis Volume [veh/h]	177	10	322	20	8	4	8	1232	59	603	1423	16
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	5	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	5	5	0	5	10	0	5	10	0
Maximum Green [s]	0	60	0	30	55	0	30	65	0	40	65	0
Amber [s]	0.0	4.4	0.0	4.0	3.3	0.0	4.0	4.7	0.0	4.0	4.7	0.0
All red [s]	0.0	1.5	0.0	2.0	2.7	0.0	2.0	1.0	0.0	2.0	1.0	0.0
Split [s]	0	24	0	9	12	0	9	53	0	31	73	0
Vehicle Extension [s]	0.0	2.0	0.0	1.0	2.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Walk [s]	0	4	0	0	4	0	0	4	0	0	4	0
Pedestrian Clearance [s]	0	37	0	0	35	0	0	23	0	0	13	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.9	0.0	4.0	4.0	0.0	4.0	3.7	0.0	4.0	3.7	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.90	5.90	5.90	6.00	6.00	6.00	5.70	5.70	6.00	5.70	5.70
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.90	3.90	3.90	4.00	4.00	4.00	3.70	3.70	4.00	3.70	3.70
g_i, Effective Green Time [s]	21	21	21	3	3	1	50	50	23	71	71
g / C, Green / Cycle	0.17	0.17	0.17	0.03	0.03	0.01	0.41	0.41	0.19	0.59	0.59
(v / s)_i Volume / Saturation Flow Rate	0.05	0.05	0.20	0.01	0.01	0.00	0.24	0.04	0.17	0.28	0.01
s, saturation flow rate [veh/h]	1781	1790	1589	1781	1766	1781	5094	1589	3459	5094	1589
c, Capacity [veh/h]	307	309	274	49	48	17	2112	659	654	3025	944
d1, Uniform Delay [s]	43.37	43.37	49.66	57.41	57.15	59.10	27.12	21.35	47.80	13.74	10.00
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.04	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.21	0.20	82.25	2.05	0.98	6.84	1.19	0.27	2.46	0.53	0.03
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.30	0.30	1.18	0.41	0.25	0.46	0.58	0.09	0.92	0.47	0.02
d, Delay for Lane Group [s/veh]	43.58	43.58	131.92	59.46	58.14	65.95	28.30	21.62	50.26	14.26	10.03
Lane Group LOS	D	D	F	E	E	E	C	C	D	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.38	2.39	14.21	0.63	0.37	0.27	8.88	1.03	8.79	6.72	0.17
50th-Percentile Queue Length [ft/ln]	59.50	59.80	355.17	15.74	9.32	6.74	221.98	25.68	219.85	168.11	4.25
95th-Percentile Queue Length [veh/ln]	4.28	4.31	21.98	1.13	0.67	0.49	13.77	1.85	13.66	10.98	0.31
95th-Percentile Queue Length [ft/ln]	107.10	107.64	549.47	28.34	16.78	12.14	344.15	46.23	341.43	274.43	7.66

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	43.58	43.58	131.92	59.46	58.14	58.14	65.95	28.30	21.62	50.26	14.26	10.03
Movement LOS	D	D	F	E	E	E	E	C	C	D	B	B
d_A, Approach Delay [s/veh]	99.46			58.96			28.23			24.86		
Approach LOS	F			E			C			C		
d_I, Intersection Delay [s/veh]	36.05											
Intersection LOS	D											
Intersection V/C	0.630											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	302	100	788	1122
d_b, Bicycle Delay [s]	43.27	54.15	22.02	11.57
l_b,int, Bicycle LOS Score for Intersection	2.563	1.612	2.304	2.692
Bicycle LOS	B	A	B	B

Sequence

Ring 1	2	1	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 3: Access B & Frank Lloyd Wright Boulevard

Control Type:	Two-way stop	Delay (sec / veh):	16.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	Access B		Frank Lloyd Wright Boulevard		Frank Lloyd Wright Boulevard	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Access B		Frank Lloyd Wright Boulevard		Frank Lloyd Wright Boulevard	
Base Volume Input [veh/h]	0	0	0	1177	1281	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0200	1.0200	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	0	2	1	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1	0	1203	1308	0
Peak Hour Factor	1.0000	0.9200	1.0000	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	327	355	0
Total Analysis Volume [veh/h]	0	1	0	1308	1422	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	16.21	0.00	0.00	0.00	0.00
Movement LOS		C		A	A	
95th-Percentile Queue Length [veh/ln]	0.00	0.01	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.23	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	16.21		0.00		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.01					
Intersection LOS	C					

Intersection Level Of Service Report

Intersection 1: Northsight Boulevard & Frank Lloyd Wright Boulevard

Control Type:	Signalized	Delay (sec / veh):	13.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.476

Intersection Setup

Name	Northsight Boulevard		Frank Lloyd Wright Boulevard		Frank Lloyd Wright Boulevard	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	1	1	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	110.00	90.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	Northsight Boulevard		Frank Lloyd Wright Boulevard		Frank Lloyd Wright Boulevard	
Base Volume Input [veh/h]	416	86	1539	395	39	1471
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	2	0	0	3
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	44	0	101	0	0
Total Hourly Volume [veh/h]	424	44	1572	302	40	1503
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	115	12	427	82	11	408
Total Analysis Volume [veh/h]	461	48	1709	328	43	1634
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive
Signal Group	8	0	2	0	1	6
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	0	10	0	5	10
Maximum Green [s]	55	0	70	0	45	75
Amber [s]	3.0	0.0	4.7	0.0	4.0	4.7
All red [s]	2.0	0.0	1.0	0.0	2.0	1.0
Split [s]	30	0	78	0	12	90
Vehicle Extension [s]	2.0	0.0	3.0	0.0	2.0	3.0
Walk [s]	5	0	5	0	0	5
Pedestrian Clearance [s]	10	0	10	0	0	10
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	3.0	0.0	3.7	0.0	4.0	3.7
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.00	5.00	5.70	5.70	5.70	5.70
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.70	3.70	0.00	3.70
g_i, Effective Green Time [s]	18	18	81	81	91	91
g / C, Green / Cycle	0.15	0.15	0.68	0.68	0.76	0.76
(v / s)_i Volume / Saturation Flow Rate	0.13	0.03	0.34	0.21	0.10	0.32
s, saturation flow rate [veh/h]	3459	1589	5094	1589	416	5094
c, Capacity [veh/h]	527	242	3444	1075	356	3864
d1, Uniform Delay [s]	49.79	44.50	9.48	7.94	5.64	5.16
k, delay calibration	0.04	0.04	0.50	0.50	0.04	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.85	0.15	0.51	0.73	0.06	0.34
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.87	0.20	0.50	0.31	0.12	0.42
d, Delay for Lane Group [s/veh]	51.64	44.65	10.00	8.67	5.69	5.50
Lane Group LOS	D	D	A	A	A	A
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	6.95	1.28	6.35	3.20	0.20	3.71
50th-Percentile Queue Length [ft/ln]	173.76	31.95	158.71	80.02	5.07	92.79
95th-Percentile Queue Length [veh/ln]	11.27	2.30	10.48	5.76	0.36	6.68
95th-Percentile Queue Length [ft/ln]	281.85	57.52	262.01	144.03	9.12	167.02

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	51.64	44.65	10.00	8.67	5.69	5.50
Movement LOS	D	D	A	A	A	A
d_A, Approach Delay [s/veh]	50.98		9.78		5.50	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	13.05					
Intersection LOS	B					
Intersection V/C	0.476					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000
Crosswalk LOS	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	416	1204	1404
d_b, Bicycle Delay [s]	37.64	9.50	5.33
l_b,int, Bicycle LOS Score for Intersection	1.560	2.736	2.482
Bicycle LOS	A	B	B

Sequence

Ring 1	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report

Intersection 2: Hayden Road & Frank Lloyd Wright Boulevard

Control Type:	Signalized	Delay (sec / veh):	94.9
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.950

Intersection Setup

Name	Hayden Road			Hayden Road			Fr LI			Fr LI		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	1	2	0	1
Entry Pocket Length [ft]	190.00	100.00	300.00	70.00	100.00	100.00	125.00	100.00	460.00	265.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21	0.00	0.00	0.00
Speed [mph]	45.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	Hayden Road			Hayden Road			Fr LI			Fr LI		
Base Volume Input [veh/h]	503	15	739	39	6	13	6	1648	220	555	1242	16
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0200	1.0000	1.0200	1.0000	1.0000	1.0000	1.0000	1.0200	1.0200	1.0200	1.0200	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	5	3	2	2	0	0	0	0	5
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	189	0	0	0	0	0	112	0	0	11
Total Hourly Volume [veh/h]	513	17	565	44	9	15	8	1681	112	566	1267	10
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	139	5	154	12	2	4	2	457	30	154	344	3
Total Analysis Volume [veh/h]	558	18	614	48	10	16	9	1827	122	615	1377	11
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	5	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	5	5	0	5	10	0	5	10	0
Maximum Green [s]	0	60	0	30	55	0	30	65	0	40	65	0
Amber [s]	0.0	4.4	0.0	4.0	3.3	0.0	4.0	4.7	0.0	4.0	4.7	0.0
All red [s]	0.0	1.5	0.0	2.0	2.7	0.0	2.0	1.0	0.0	2.0	1.0	0.0
Split [s]	0	28	0	9	14	0	9	55	0	23	67	0
Vehicle Extension [s]	0.0	2.0	0.0	1.0	2.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Walk [s]	0	4	0	0	4	0	0	4	0	0	4	0
Pedestrian Clearance [s]	0	37	0	0	35	0	0	23	0	0	13	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.9	0.0	4.0	4.0	0.0	4.0	3.7	0.0	4.0	3.7	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.90	5.90	5.90	6.00	6.00	6.00	5.70	5.70	6.00	5.70	5.70
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.90	3.90	3.90	4.00	4.00	4.00	3.70	3.70	4.00	3.70	3.70
g_i, Effective Green Time [s]	25	25	25	5	5	1	49	49	17	65	65
g / C, Green / Cycle	0.21	0.21	0.21	0.04	0.04	0.01	0.41	0.41	0.14	0.54	0.54
(v / s)_i Volume / Saturation Flow Rate	0.16	0.16	0.39	0.03	0.02	0.01	0.36	0.08	0.18	0.27	0.01
s, saturation flow rate [veh/h]	1781	1786	1589	1781	1687	1781	5094	1589	3459	5094	1589
c, Capacity [veh/h]	374	375	334	71	67	19	2099	655	490	2766	863
d1, Uniform Delay [s]	44.69	44.66	47.41	56.86	56.20	59.01	32.34	22.46	51.50	17.18	12.62
k, delay calibration	0.04	0.04	0.25	0.04	0.04	0.04	0.50	0.50	0.04	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.28	1.26	384.07	4.18	1.36	6.38	5.28	0.63	116.25	0.64	0.03
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.77	0.77	1.84	0.68	0.39	0.47	0.87	0.19	1.26	0.50	0.01
d, Delay for Lane Group [s/veh]	45.97	45.92	431.48	61.05	57.56	65.39	37.62	23.09	167.76	17.82	12.65
Lane Group LOS	D	D	F	E	E	E	D	C	F	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	7.95	7.94	45.19	1.53	0.80	0.30	16.27	2.24	15.06	7.52	0.14
50th-Percentile Queue Length [ft/ln]	198.75	198.60	1129.83	38.25	20.01	7.50	406.75	55.89	376.51	187.97	3.40
95th-Percentile Queue Length [veh/ln]	12.57	12.57	71.08	2.75	1.44	0.54	22.88	4.02	23.56	12.02	0.24
95th-Percentile Queue Length [ft/ln]	314.36	314.16	1776.94	68.86	36.02	13.51	572.12	100.60	588.97	300.40	6.12

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.95	45.92	431.48	61.05	57.56	57.56	65.39	37.62	23.09	167.76	17.82	12.65
Movement LOS	D	D	F	E	E	E	E	D	C	F	B	B
d_A, Approach Delay [s/veh]	244.87			59.82			36.84			63.83		
Approach LOS	F			E			D			E		
d_I, Intersection Delay [s/veh]	94.89											
Intersection LOS	F											
Intersection V/C	0.950											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	368	133	822	1022
d_b, Bicycle Delay [s]	39.94	52.27	20.83	14.36
l_b,int, Bicycle LOS Score for Intersection	3.835	1.682	2.698	2.667
Bicycle LOS	D	A	B	B

Sequence

Ring 1	2	1	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 3: Access B & Frank Lloyd Wright Boulevard

Control Type:	Two-way stop	Delay (sec / veh):	18.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.008

Intersection Setup

Name	Access B		Frank Lloyd Wright Boulevard		Frank Lloyd Wright Boulevard	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Access B		Frank Lloyd Wright Boulevard		Frank Lloyd Wright Boulevard	
Base Volume Input [veh/h]	0	0	0	1625	1510	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0200	1.0200	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	2	2	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	2	0	1660	1542	0
Peak Hour Factor	1.0000	0.9200	1.0000	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	1	0	451	419	0
Total Analysis Volume [veh/h]	0	2	0	1804	1676	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane						
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.02	0.02	0.00
d_M, Delay for Movement [s/veh]	0.00	18.65	0.00	0.00	0.00	0.00
Movement LOS		C		A	A	
95th-Percentile Queue Length [veh/ln]	0.00	0.02	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.57	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	18.65		0.00		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.01					
Intersection LOS	C					

Appendix C

8/26/2021

Neil Feaser
RKAA Architects, Inc
2233 E Thomas Rd
Phoenix, AZ 85016

RE: **8-ZN-2021**
FLW Storage
3144B (Key Code)

Dear Mr. Feaser:

The Planning & Development Services Division has completed the review of the above referenced development application submitted on 8/2/2021. The following **1st Review Comments** represent the review performed by our team and is intended to provide you with guidance for compliance with city codes, policies, and guidelines related to this application.

General Plan, Character Area, Streetscape Adopted Plan Issues
The following issues have been identified in the first review of this application and shall be addressed in the resubmittal of the revised application material. Addressing these items is critical to scheduling the application for public hearing and may affect the City Staff's recommendation. Please address the following:

1. The community's current and ratified General Plan is General Plan 2001, as responded to by the applicant in the first submittal. However, City Council recently adopted Scottsdale General Plan 2035 on June 8, 2021. Consequently, City Council has called for a special election in November 2021 for the voters to consider possible ratification. If Scottsdale General Plan 2035 is ratified by the voters prior to City Council acting upon this proposal, an updated narrative that responds to the goals and policies of the Scottsdale General Plan 2035 will be required prior to scheduling any public hearing. The recent City Council adopted plan can be found at: https://www.scottsdaleaz.gov/general-plan/general-plan-updates

2. Please update the format of the narrative to respond to the General Plan 2001 goals and approaches. Please include the enumerated goal or approach as well as discussion as to how the proposal intends to implement the cited goal or approach.
   EXAMPLE:
   LAND USE
   Goal 1: Recognize Scottsdale's role as a major regional economic and cultural center, featuring business, tourism, and cultural activities.

Bullet 1: Strengthen the identity of Scottsdale by encouraging land uses that contribute to the character of the community and sustain a viable economic base.

Response:…

3. Please update the format of the narrative to respond to the Greater Airpark Character Area Plan goals and policies. Please include the enumerated goal or policy as well as discussion as to how the proposal intends to implement the cited goal or policy. Greater Airpark Character Area Plan can be found at: https://www.scottsdaleaz.gov/planning-development/long-range-planning/character-area-plans/airpark-area

   EXAMPLE:

   GOAL

   Land Use 1, Maintain and expand the Greater Airpark's role as a national and international economic destination through appropriate land uses, development, and revitalization.

   Policy LU 1.3 Promote development intensities supportive of existing and future market needs.

   Response:…

4. The Greater Airpark Future Land Use Map designates this area as Airpark Mixed Use (AMU) future land use designation that is described as a variety of non-residential uses, including a combination of business, office, employment, retail, institutional, and hotel uses. The General Commercial (C-4) zoning district, however, includes allowed uses that more appropriately align with Employment (EMP) future land use designation as it is described within the Greater Airpark Character Area Plan. In particular, Employment (EMP) includes an array of office, commercial, warehousing, and light industrial land uses. In conjunction with your Zoning request for the General Commercial (C-4) zoning, please submit a Non-Major General Plan Amendment to request a change from Airpark Mixed Use (AMU) to the Employment (EMP) Future Land Use designation. This request should include an updated narrative as well as graphics depicting the requested change.

5. The General Plan 2001 (Land Use Element Goal 7) and the Greater Airpark Character Area Plan (Land Use Goal 4, Policy LU 4.6; Greater Airpark Development Types Map and Examples) describe transitions between development types within the airpark area. The project site is within the Type C – Higher Scale and is adjacent to the Type A – Medium Scale. Please consider planting mature trees along the north elevations of the building to soften the transition to the public trail and the open space north of the project. With a resubmittal, please provide a response that discusses how the proposed development will blend with the existing development within a revised narrative and site plan.

6. In accordance with Greater Airpark Character Area Plan (Land Use Goal 7; Character and Design Goal 2, Policy 2.1.1) E. Frank Lloyd Wright Boulevard is a signature corridor. With a resubmittal, please provide a response that discusses how the proposed development will enhance the Frank Lloyd Wright Boulevard frontage for this site within a revised narrative and landscape plan showing the improved frontage. The Greater Airpark Character Area Plan (Community Mobility Goal 7, Policy CM 7.1) encourages design that promotes access to those walking, cycling, or taking public transit, particularly along Signature Corridors. With a

resubmittal, please provide a response that discusses how the proposed development will enhance sidewalk connections from the neighboring sites and the Frank Lloyd Wright Boulevard frontage within a revised narrative and site plan.

7. If further outreach has been conducted since the original submittal, please provide an updated Citizen Involvement Report.

Zoning Ordinance and Scottsdale Revise Code Significant Issues

The following code and ordinance related issues have been identified in the first review of this application and shall be addressed in the resubmittal of the revised application material. Addressing these items is critical to scheduling the application for public hearing and may affect the City Staff's recommendation. Please address the following:

Zoning:

8. The represented site boundary and the existing R1-35 zoning district boundary do not align. The O-S rezoning action of 9-ZN-2009 left R1-35 zoning remaining on this site south of the north boundary of the 20-foot-wide Sewer Easement (granted by 10/0622548). If that area is not also included in the scope of the current rezoning request, this site will be required to still adhere to a 50-foot-wide setback (per Sec. 5.1604.D.2 of the Zoning Ordinance) along the entire northern boundary of the represented parcel, where the proposed C-4 zoning would be abutting the remaining strip of R1-35 zoning. Please look into working with the owner of the remaining northern portion of R1-35 zoned area (BOR?) to include that area for rezoning in your application scope or update the site layout to account for the required setback.
9. The accessible parking calculations provided on the site plan identify 2 spaces, but Sec. 9.105.B.4 of the Zoning Ordinance specifies 4% of the provided parking (56 spaces), which results 3 spaces. Please update the site plan to account for the minimum 4% requirement based on the final provided number of spaces.
10. The parking calculations identified on the site plan show the gross floor area to include the basement level and the RV garages, which are generally not part of the definition of Gross Floor Area. Recalculating the parking to include the office space, but exclude garages and basement space, the minimum parking appears to result 37 spaces.
    a. There are larger covered parking spaces represented on the plan. If these are intended to be rented as vehicular storage spaces, they'll need to be excluded from the provided parking calculations (towards achieving the parking requirement). Please update the plans to clarify and differentiate the parking areas accordingly.

Fire:

11. Please include a note on site plan identifying "Key switch/pre-emption sensor required for gates" per Fire Ord. 4283 Sec. 503.6.1.
12. Please update the plans to identify the location of the FDC and that the FDC meets spacing requirements of Fire Ord. 4283 Sec. 912.
13. Please update the plans to provide a new fire hydrant within the site, as indicated on the marked-up site plan, in accordance with Fire Ord. 4283 Sec. 507.5.1.2.
14. Please revise the plans to demonstrate the location of the Fire Riser Room, per DSPM 6-1.504.

15. Please revise the site plan to demonstrate both left and right turns with fire apparatus turning radii (25-foot inside, 49-foot outside, and 55-foot bucket swing) per DSPM 2-1.303.B.5.
    a. Please include the commercial turn-around dimensions per DSPM Fig. 2-1.5.

Drainage:

16. Please submit a revised Drainage Report and Grading & Drainage plan, with the rest of the resubmittal material identified in Attachment A.

Water and Wastewater:

17. Please submit revised Water and Wastewater Design Reports with the rest of the resubmittal material identified in Attachment A.
18. Please include a Hydrant flow test with the resubmittal.

Significant Policy Related Issues

The following policy related issues have been identified in the first review of this application. While these issues may not be critical to scheduling the application for public hearing, they may affect the City Staff's recommendation pertaining to the application and should be addressed with the resubmittal of the revised application material. Please address the following:

Site Design:

19. The building concept is configured anticipating exterior access storage units along the span of the south building face. That portion of the building directly abuts the under 30-foot-wide drive aisle through the site. If vehicles park outside of those units to load/unload, only about 20-feet (or less) of clearance is left in that drive aisle for maneuvering through the site. Please evaluate the emergency and general vehicular circulations impacts of the orientation of access to those units and revise the site configuration accordingly.
20. In order to improve readability of proposed improvements, please provide enlarged site plan sections detailing at a larger scale those areas of the site near road frontages (Frank Lloyd Wright Blvd. and the Frontage Road). In addition, please show any existing roadway improvements (curb, gutter, sidewalk, etc.) on plans.
21. To maintain a consistent streetscape, please revise the project plans to provide a similar site improvements setback to that provided on other properties along the north side of Frank Lloyd Wright Blvd in this area, which range from 30 to 40-feet from the property line.

Landscape Design:

22. In order to improve readability of proposed improvements, please provide landscape plan detailing at a larger scale for those areas of the site near road frontages (Frank Lloyd Wright Boulevard and the Frontage Road). In addition, please show any existing roadway improvements (curb, gutter, sidewalk, etc.) on plans.

Building Elevation Design:

23. Please revise the plans to provide the building height calculations based on the provisions within Sec. 3.100 of the Zoning Ordinance, measuring from a point established by the average top of curb plus 12-inches.
24. The City's Self-Storage Facilities Design Guidelines direct building design to the reduction of apparent building size and mass through varying the height of the building and avoiding long

or continuous blank wall planes and monotonous wall treatments. Please revise the building design to meet the Design Guidelines intent.

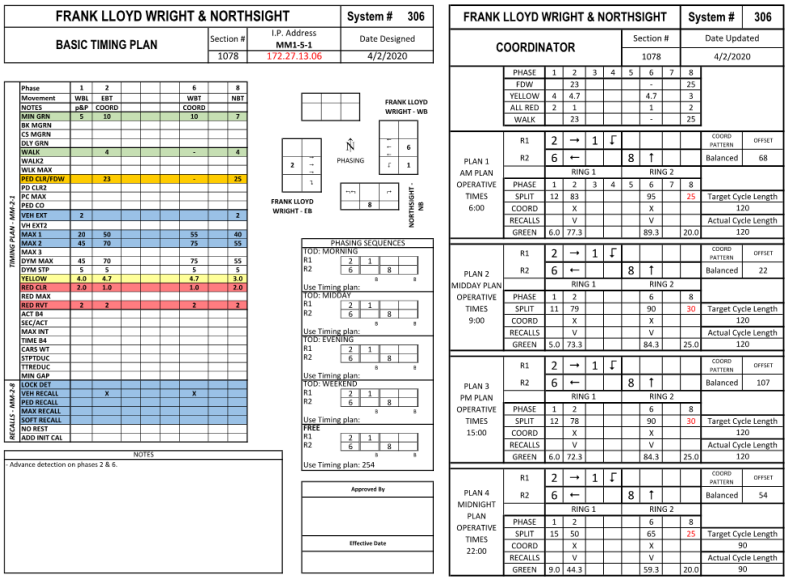
25. The City's Self-Storage Facilities Design Guidelines discourage the use of false windows that do not provide actual penetrations to the interior of the building. Please revise the building design to meet the Design Guidelines intent.

Traffic Analysis:

Please provide a revised TIMA with the resubmittal, addressing the following:

26. Please identify number of rear-end collisions by direction and provide discussion of traffic control needs, transportation system management, or other mitigation measures in relation to the additional traffic expected for this site. (DSPM 5-1.700 & 5-3.123).

27. Please use the provided signal timings at Northsight/FLW and Hayden/FLW. (DSPM 5-1.703).



FRANK LLOYD WRIGHT & NORTHSIGHT — System # 306

BASIC TIMING PLAN — Section # 1078 — I.P. Address MM1-5-1 — 172.27.13.06 — Date Designed 4/2/2020

Phase	1	2			6	8
Movement	WBL	EBT			WBT	NBT
NOTES	pâP	COORD			COORD	
MIN GRN	5	10			10	7
BK MGRN						
CS MGRN						
DLY GRN						
WALK		4			-	4
WALK2						
WLK MAX						
PED CLR/FDW		23			-	25
PD CLR2						
PC MAX						
PED CO						
VEH EXT	2					2
VH EXT2						
MAX 1	20	50			55	40
MAX 2	45	70			75	55
MAX 3						
DYM MAX	45	70			75	55
DYM STP	5	5			5	5
YELLOW	4.0	4.7			4.7	3.0
RED CLR	2.0	1.0			1.0	2.0
RED MAX						
RED RVT	2	2			2	2
ACT B4						
SEC/ACT						
MAX INT						
TIME B4						
CARS WT						
STPTDUC						
TTREDUC						
MIN GAP						
LOCK DET						
VEH RECALL		X			X	
PED RECALL						
MAX RECALL						
SOFT RECALL						
NO REST						
ADD INIT CAL						

TIMING PLAN - MM-2-1 / RECALLS - MM-2-8

PHASING SEQUENCES

TOD: MORNING — R1: 2 1 — R2: 6 8 — Use Timing plan:

TOD: MIDDAY — R1: 2 1 — R2: 6 8 — Use Timing plan:

TOD: EVENING — R1: 2 1 — R2: 6 8 — Use Timing plan:

TOD: WEEKEND — R1: 2 1 — R2: 6 8 — Use Timing plan:

FREE — R1: 2 1 — R2: 6 8 — Use Timing plan: 254

NOTES

Advance detection on phases 2 & 6.

Approved By

Effective Date

FRANK LLOYD WRIGHT & NORTHSIGHT — System # 306

COORDINATOR — Section # 1078 — Date Updated 4/2/2020

	PHASE	1	2	3	4	5	6	7	8
	FDW		23				-		25
	YELLOW	4	4.7				4.7		3
	ALL RED	2	1				1		2
	WALK		23				-		25
PLAN 1 AM PLAN OPERATIVE TIMES 6:00	R1	2 →	1 ⌜						
	R2	6 ←				8 ↑			
		RING 1				RING 2			
	PHASE	1	2	3	4	5	6	7	8
	SPLIT	12	83				95		25
	COORD		X				X		
	RECALLS		V				V		
	GREEN	6.0	77.3				89.3		20.0
PLAN 2 MIDDAY PLAN OPERATIVE TIMES 9:00	R1	2 →	1 ⌜						
	R2	6 ←				8 ↑			
		RING 1				RING 2			
	PHASE	1	2				6		8
	SPLIT	11	79				90		30
	COORD		X				X		
	RECALLS		V				V		
	GREEN	5.0	73.3				84.3		25.0
PLAN 3 PM PLAN OPERATIVE TIMES 15:00	R1	2 →	1 ⌜						
	R2	6 ←				8 ↑			
		RING 1				RING 2			
	PHASE	1	2				6		8
	SPLIT	12	78				90		30
	COORD		X				X		
	RECALLS		V				V		
	GREEN	6.0	72.3				84.3		25.0
PLAN 4 MIDNIGHT PLAN OPERATIVE TIMES 22:00	R1	2 →	1 ⌜						
	R2	6 ←				8 ↑			
		RING 1				RING 2			
	PHASE	1	2				6		8
	SPLIT	15	50				65		25
	COORD		X				X		
	RECALLS		V				V		
	GREEN	9.0	44.3				59.3		20.0

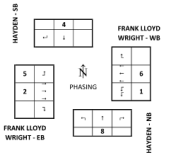
COORD PATTERN	OFFSET
Balanced	68
Balanced	22
Balanced	107
Balanced	54
Target Cycle Length	120
Actual Cycle Length	120
Target Cycle Length	90
Actual Cycle Length	90

FRANK LLOYD WRIGHT & HAYDEN — System # 172

BASIC TIMING PLAN — Section # 803 — I.P. Address MM1-5-1 — 172.27.11.72 — Date Designed 4/2/2020

Phase	1	2		4	5	6		8
Movement	WBL	EBT		SBTL	EBL	WBT		NBTL
NOTES	PROT	COORD		SPLIT	L-P	COORD		SPLIT
MIN GRN	5	10		5	5	10		5
BK MGRN								
CS MGRN								
DLY GRN								
WALK		4		4		4		4
WALK2								
WLK MAX								
PED CLR/FDW		23		35		13		37
PD CLR2								
PC MAX								
PED CO								
VEH EXT	1	1		2	1	1		2
VH EXT2								
MAX 1	30	55		45	20	55		50
MAX 2	40	65		55	30	65		60
MAX 3								
DYM MAX	40	65		55	30	65		60
DYM STP	5	5		5	5	5		
YELLOW	4	4.7		3.3	4	4.7		4.4
RED CLR	2	1.0		2.7	2	1.0		1.5
RED MAX								
RED RVT	2	2		2	2	2		2
ACT B4								
SEC/ACT								
MAX INT								
TIME B4								
CARS WT								
STPTDUC								
TTREDUC								
MIN GAP								
LOCK DET								
VEH RECALL		X				X		
PED RECALL								
MAX RECALL								
SOFT RECALL								
NO REST								
ADD INIT CAL								

TIMING PLAN - MM-2-1 / RECALLS - MM-2-8



PHASING SEQUENCES

TOD: MORNING — R1: 2 1 4 8 — R2: 5 6 — Use Timing plan:

TOD: MIDDAY — R1: 2 1 4 8 — R2: 5 6 — Use Timing plan:

TOD: EVENING — R1: 2 1 4 8 — R2: 5 6 — Use Timing plan:

TOD: NIGHT — R1: 2 1 4 8 — R2: 5 6 — Use Timing plan:

FREE — R1: 2 1 4 8 — R2: 5 6 — Use Timing plan: 254

NOTES

-Phases 4 and 8 are exclusive.
- Advance detection ph 1,2,5,6,8.

Approved By

Effective Date

FRANK LLOYD WRIGHT & HAYDEN — System # 172

COORDINATOR — Section # 803 — Date Updated 4/2/2020

	PHASE	1	2	3	4	5	6	7	8
	FDW		23		35		13		37
	YELLOW	4	4.7		3.3	4	4.7		4.4
	ALL RED	2	1		2.7	2	1		1.5
	WALK		23		35		13		37
PLAN 1 AM PLAN OPERATIVE TIMES 6:00	R1	2 →	1 ⌜	4 ↓	8 ↑				
	R2	5 ⌡	6 ←						
		RING 1		RING 2					
	PHASE	1	2		4	5	6		8
	SPLIT	31	53		12	11	73		24
	COORD		X				X		
	RECALLS		V				V		
	GREEN	25.0	47.3		6.0	5.0	67.3		18.1
PLAN 2 MIDDAY PLAN OPERATIVE TIMES 9:00	R1	2 →	1 ⌜	4 ↓	8 ↑				
	R2	5 ⌡	6 ←						
		RING 1		RING 2					
	PHASE	1	2		4	5	6		8
	SPLIT	29	48		12	11	66		31
	COORD		X				X		
	RECALLS		V				V		
	GREEN	23.0	42.3		6.0	5.0	60.3		25.1
PLAN 3 PM PLAN OPERATIVE TIMES 15:00	R1	2 →	1 ⌜	4 ↓	8 ↑				
	R2	5 ⌡	6 ←						
		RING 1		RING 2					
	PHASE	1	2		4	5	6		8
	SPLIT	23	55	28	14	11	67	14	28
	COORD		X				X		
	RECALLS		V				V		
	GREEN	17.0	49.3		8.0	5.0	61.3		22.1
PLAN 4 MIDNIGHT PLAN OPERATIVE TIMES 22:00	R1	2 →	1 ⌜	4 ↓	8 ↑				
	R2	5 ⌡	6 ←						
		RING 1		RING 2					
	PHASE	1	2		4	5	6		8
	SPLIT	14	39		13	11	42		24
	COORD		X				X		
	RECALLS		V				V		
	GREEN	8.0	33.3		7.0	5.0	36.3		18.1

COORD PATTERN	OFFSET
Balanced	46
Balanced	111
Balanced	99
Balanced	39
Target Cycle Length	120
Actual Cycle Length	120
Target Cycle Length	90
Actual Cycle Length	90

28. Please note existing phasing characteristics at the signalized intersections (protected, permissive, overlap, etc).
29. The trip generation of the potential development under existing zoning section uses and densities cannot be verified by reviewer. The expectations from trip comparisons are to compare existing conditions with proposed development. Please address the comparison accordingly.
30. Please modify the curb at proposed "Access B" to be configured for Right-Out only traffic. If intended for use as a Fire access, mountable curb will be required and modification of the existing median along Frank Lloyd Wright Blvd to provide mountable curb will also be required.
31. Please ensure there is adequate space for vehicle queuing at "Access B". Currently, it appears there is no offset from the exit point of the driveway and the proposed gated exit.
32. Please provide mitigation discussion for existing and proposed intersections and intersection movements operating at an inadequate LOS. Utilize mitigation analysis if any deficiencies are found for existing signal timings.

<u>Circulation:</u>

33. Please revise the gated exit-only access to comply with DSPM Figure 2-1.3. Exit only emergency access may require modifications to create a mountable median in Frank Lloyd Wright Boulevard to accommodate fire access.
34. Please provide additional documentation of shared access to this site using the existing driveway between APNs 215-51-001N and 215-51-001R. The existing easement does not appear to account for access rights to this parcel and ends 18-feet short of connecting to this site.
35. It is unclear on the site plan and in the narrative where loading/unloading will occur. There is no turnaround provided at either end of the site, so it is unclear how vehicles that would utilize a storage facility would load/unload and maneuver the site once entering the gate to either the RV storage area to the east or the self-storage units to the west. Please revise the documents to clarify and elaborate on the operational functionality as it is anticipated with the proposed configuration.
36. A future 10-foot shared use path is planned within the "trail easement" located along the northern boundary of project site. The "trail easement" is located between the CAP fence and the proposed north boundary of this site. This proposal doesn't appear to impact the dedicated trail easement, but the easement and trail/path location should be correctly reflected on this site plan for context and consistency.
37. In accordance with DSPM 2-1.310, please update the site plan to provide a minimum 6-foot-wide accessible pedestrian route from the main entry of the development to the public sidewalk along Frank Lloyd Wright Boulevard.
38. In accordance with DSPM 2-1.303, please update the site plan to identify a minimum 24-foot-wide drive aisle that is independent form the 6-foot pedestrian rout identified above.
39. Please update the site plan to show and identify site distance triangles in accordance with DSPM 5-3.123 D.

Technical Corrections

The following technical ordinance or policy related corrections have been identified in the first review of the project. While these items are not as critical to scheduling the case for public hearing, they will likely affect a decision on the final plans submittal (construction and improvement documents) and should be addressed as soon as possible. Correcting these items before the hearing may also help clarify questions regarding these plans. Please address the following:

Other:

40. In accordance with SRC Ch.48, a plat will need to be processed through the appropriate City process to create the represented parcel configuration per city code requirements. Final plat recordation will be required prior to any permit issuance.

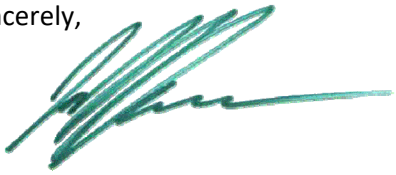
Please resubmit the revised application requirements and additional/supplemental information identified in Attachment A, Resubmittal Checklist, and a written summary response addressing the comments/corrections identified above as soon as possible for further review. The City will then review the revisions to determine if the application is to be scheduled for a hearing date, or if additional modifications, corrections, or additional/supplemental information is necessary.

The Planning & Development Services Division has had this application in review for 19 Staff Review Days since the application was determined to have the minimal information to be reviewed.

These **1st Review Comments** are valid for a period of 180 days from the date on this letter. The Zoning Administrator may consider an application withdrawn if a revised submittal has not been received within 180 days of the date of this letter (Section 1.305. of the Zoning Ordinance).

If you have any questions, or need further assistance please contact me at 480-312-2376 or at jbarnes@ScottsdaleAZ.gov.

Sincerely,



Jeff Barnes
Senior Planner

ATTACHMENT A
Resubmittal Checklist

Case Number: 8-ZN-2021
Key Code: 3144B

Please follow the plan and document submittal requirements below. **All files shall be uploaded in PDF format.** Provide one (1) full-size copy of each required plan document file. Application forms and other written documents or reports should be formatted to 8.5 x 11.

A digital submittal Key Code is required to upload your documents: **3144B**. Files should be uploaded **individually** and in **order** of how they are listed on this checklist.

Submit digitally at: https://eservices.scottsdaleaz.gov/bldgresources/Cases/DigitalLogin

Digital submittals shall include one copy of each identified below.

☒ COVER LETTER – Respond to all the issues identified in this 1st Review Comment Letter
☒ Revised Narrative for Project:
☒ Revised Traffic Impact Mitigation Analysis (TIMA):
☒ Site Plan:
☒ G & D Plan
☒ Open Space Plan:
☒ Landscape Plan:
☒ Elevations:
☒ Floor Plan(s):
☒ Floor Plan worksheet(s):

Technical Reports: Please submit one (1) digital copy of each report requested

☒ Revised Drainage Report:
☒ Revised Water Design Report:
☒ Revised Wastewater Design Report:

November 11, 2021

Project: TIA for FLW Storage – 8-ZN-2021
UCG Project Number: TR21011
Agency: City of Scottsdale
Revision: 1st Review Comments
Date Reviewed: August 26, 2021

No.	Page	Comment	Response
26	General	Please identify number of rear-end collisions by direction and provide discussion of traffic control needs, transportation system management, or other mitigation measures in relation to the additional traffic expected for this site. (DSPM 5-1.700 & 5-3.123).	Direction of travel with a graph is included in the report along with a discussion.
27	General	Please use the provided signal timings at Northsight/FLW and Hayden/FLW. (DSPM 5-1.703).	Provided signal timing was used in the analyses.
28	General	Please note existing phasing characteristics at the signalized intersections (protected, permissive, overlap, etc).	Provided signal timing was used in the analyses including the phasing characteristics.
29	General	The trip generation of the potential development under existing zoning section uses and densities cannot be verified by reviewer. The expectations from trip comparisons are to compare existing conditions with proposed development. Please address the comparison accordingly.	The site is vacant land currently and will be developed as mini- and RV storage. As such, the comparison of various land uses was removed. ITE Trip Generation was updated to the 11th Version.
30	General	Please modify the curb at proposed "Access B" to be configured for Right-Out only traffic. If intended for use as a Fire access, mountable curb will be required and modification of the existing median along Frank Lloyd Wright Blvd to provide mountable curb will also be required.	Access B is designated as right-out only. Report states that the curb shall be modified to limit to right out only as shown on the site plan.
31	General	Please ensure there is adequate space for vehicle queuing at "Access B". Currently, it appears there is no offset from the exit point of the driveway and the proposed gated exit.	Queuing of 26 feet is now provided as shown in the site plan outside the gate.

No.	Page	Comment	Response
32	General	Please provide mitigation discussion for existing and proposed intersections and intersection movements operating at an inadequate LOS. Utilize mitigation analysis if any deficiencies are found for existing signal timings.	LOS comparison graphs are provided between existing, background and total traffic for discussion. Per DSPM 5.-1.800 in areas where current levels of service or future levels of service without the development are E or worse, the delay or v/c ratio may not be significantly increased by the development traffic. This site which generates 12 trips in the morning and 20 trips in the evening is not anticipated to significantly increase delay or v/c as shown.

January 7, 2022

Project: TIA for FLW Storage – 8-ZN-2021
UCG Project Number: TR21011
Agency: City of Scottsdale
Revision: 2nd Review
Date Reviewed: December 15, 2021

No.	Page	Comment	Response
1	11	Please Remove reference to Town of Gilbert	Removed
2	13	Please note in the description of the existing roadway conditions the existing phasing characteristics at the signalized intersections	Added phasing characteristics to intersection descriptions.