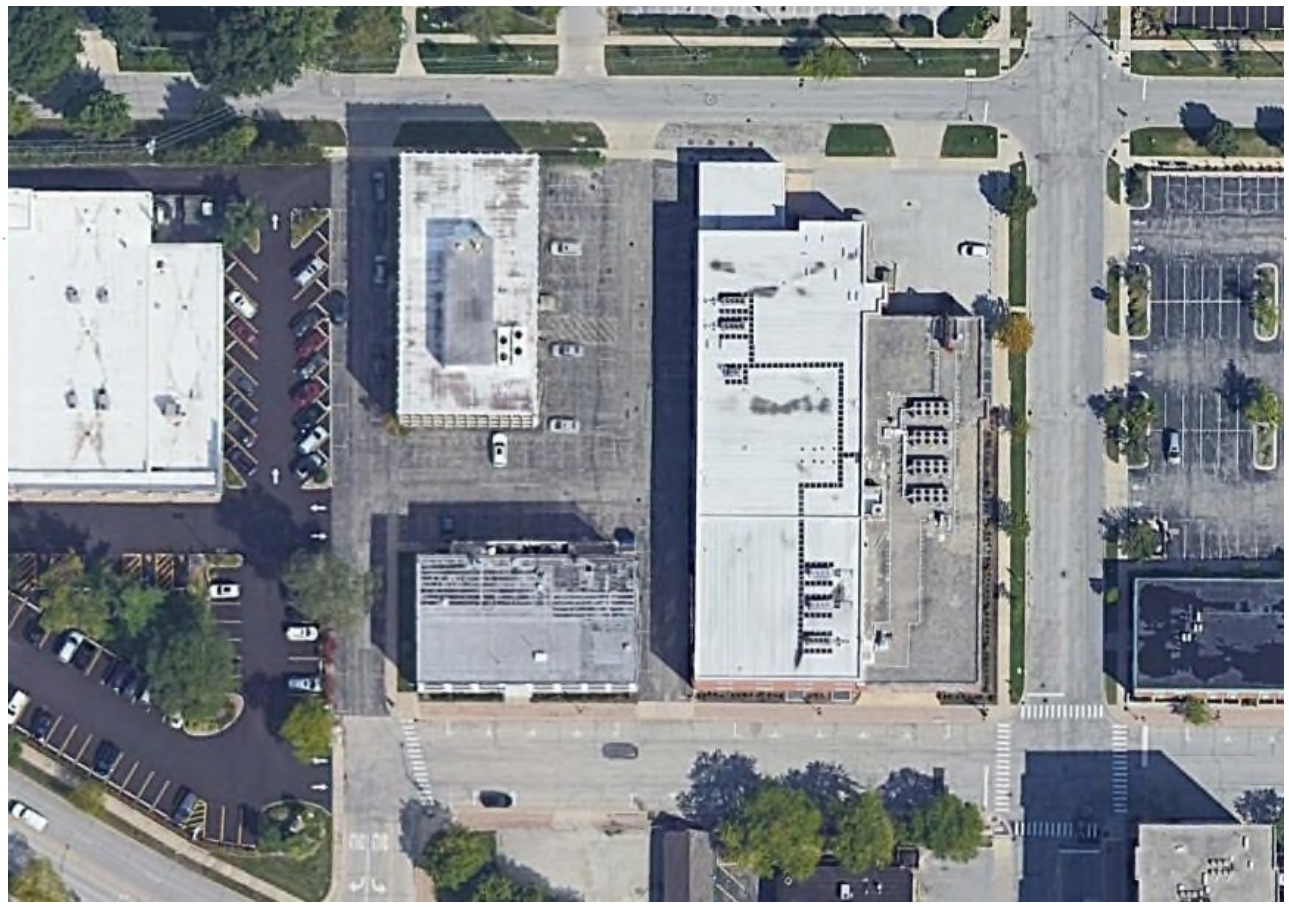
116-120 West Eastman Avenue
Residential Traffic Impact and Parking Study
Arlington Heights, Illinois



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1 INTRODUCTION AND EXISTING CONDITIONS

This report summarizes the results of a transportation analysis for a proposed mixed-use development in Downtown Arlington Heights, Illinois. The building site is located at 116-120 West Eastman Street which is occupied by two office buildings.

The purpose of this study was to identify the transportation system serving the proposed development, to determine its transportation characteristics, and to evaluate the need for improvements supporting the proposed building program.

Site Location

The development site is in the northwestern area of Downtown Arlington Heights, Illinois. It is bordered by St. James Street to the north, an AT&T facility to the east, Eastman Street to the south, and Highland Avenue (private road) to the west. It is occupied by surface parking and two office buildings. Access to the office building parking lots is from three driveways with one on St. James Street, one on Eastman Street, and one on Highland Avenue (private road). Land-uses around the site consist of a store and gas station to the south, a bank/office building to the west, single-family homes and a public parking lot to the north, and an AT&T building to the east. **Figure 1** illustrates the site location and area roadways.

Roadway Characteristics

A description of the area roadways providing access to the site is illustrated in **Figure 2** and provided below:

Northwest Highway (U.S. Route 14) is an east-west minor arterial in the vicinity of the site that provides two travel lanes in each direction. At its signalized intersection with Vail Avenue, Northwest Highway provides a through lane, a combined through/right-turn lane, and a separate left-turn lane on both approaches. At the two-way stop control intersection with Highland Avenue/Metra parking access, Northwest Highway narrows down to four lanes without a center left-turn lane. It is under the jurisdiction of the Illinois Department of Transportation (IDOT) and has a posted speed limit of 30 mph in the vicinity of the site.

Eastman Street is an east-west local roadway that provides one travel lane in each direction and extends from Highland Avenue east past Arlington Heights Road. It provides parallel on-street parking spaces on both sides of the street that are limited to two-hour parking. A four-way stop intersection is located at Vail Avenue. Eastman Street is under the jurisdiction of the Village of Arlington Heights.

St. James Street is an east-west roadway extending between Evergreen and Chestnut Avenue. It has one travel lane in each direction with no parking permitted on the south side of the street. It is under the jurisdiction of the Village of Arlington Heights.

Highland Avenue is a north-south local roadway that extends north from Northwest Highway to St. James Street. From Eastman Street north to St. James Street, it has one northbound only lane with parallel parking on both sides and is a private road. South of Eastman Street, it has one northbound lane and two southbound lanes (left and right) with a stop sign at Northwest Highway. This section is under the jurisdiction of the Village of Arlington Heights.

Vail Avenue is a north-south local roadway that in the vicinity of the site provides one through lane in each direction and extends thru Downtown Arlington Heights. At its signalized intersection with Northwest Highway, the southbound approach has a left-turn lane and a shared right-thru lane. Northbound Vail Avenue has separate left, thru, and right lanes. On-street parking is permitted on the east side south of Eastman Street and on the west side north of Eastman Street. It is under the jurisdiction of the Village of Arlington Heights.

Public Transportation

The site is located near the Arlington Heights Metra station for the UP-NW Metra Rail Line which offers daily service between Harvard/McHenry and Chicago. The site is served by PACE bus route 696 as described below:

> *PACE Route 696 Randhurst-Woodfield-Harper College* - Randhurst Mall, Metra UP-NW Line Arlington Heights Station, Cook County Courthouse, Arlington Int'l Racecourse, IKEA, Roosevelt University, Woodfield Mall Pace Northwest Transportation Center, and Harper College.

Sidewalks are provided on the entire surrounding roadway network except for the private road portion of Highland Avenue.

Bicycle Routes

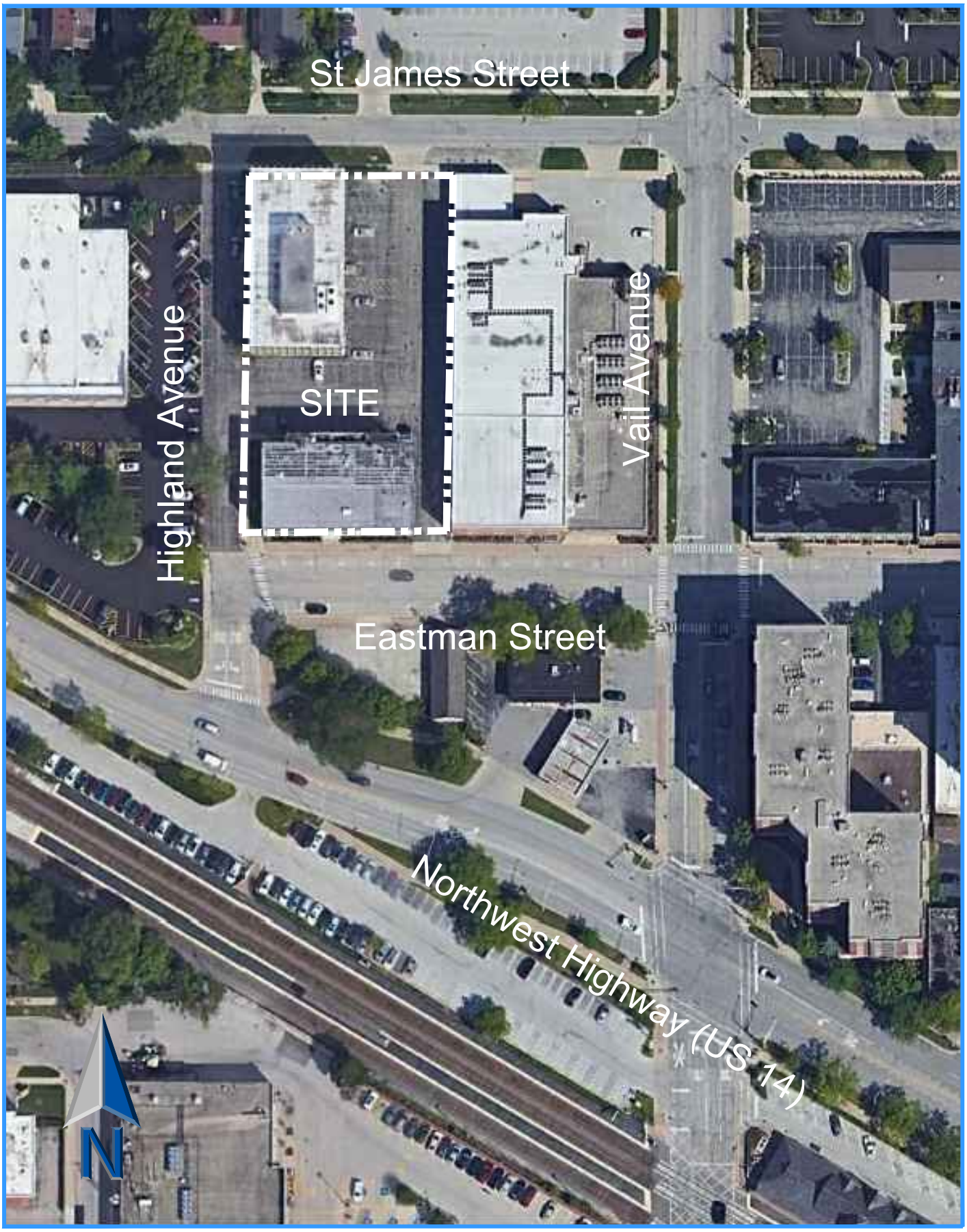
The Village of Arlington Heights identifies Vail Avenue north of St. James Street and St. James Street east of Vail Avenue as bike routes.

Existing Vehicular, Pedestrian, and Bicycle Volumes

Weekday morning (7:00 to 9:00 AM) and afternoon (4:00 to 6:00 PM) manual counts of pedestrians and vehicles were conducted in January 2022 at the intersections within the study area.

These counts showed the peak-hours of traffic occurring from 7:45 to 8:45 AM and 4:45 to 5:45 PM on a weekday. However, these counts were conducted during the current pandemic and do not represent pre-pandemic conditions. To be conservative, the 2022 traffic counts were increased by 10% to represent pre-pandemic conditions.

Figures 3 and **4** illustrates the existing vehicular and pedestrian volumes, respectively. Copies of the counts can be found in the **Appendix**.



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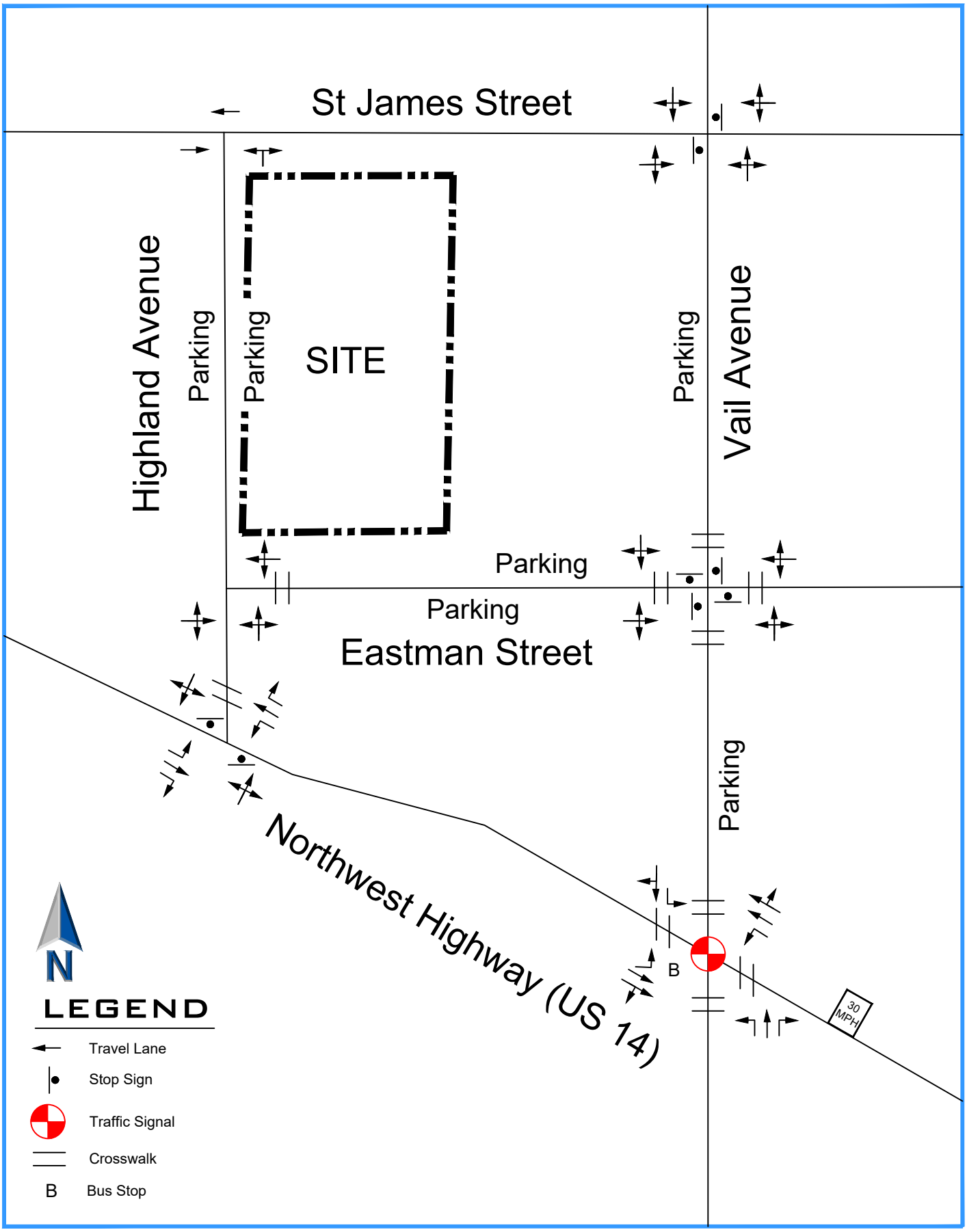
Site Location and Area Roadways

Figure 1



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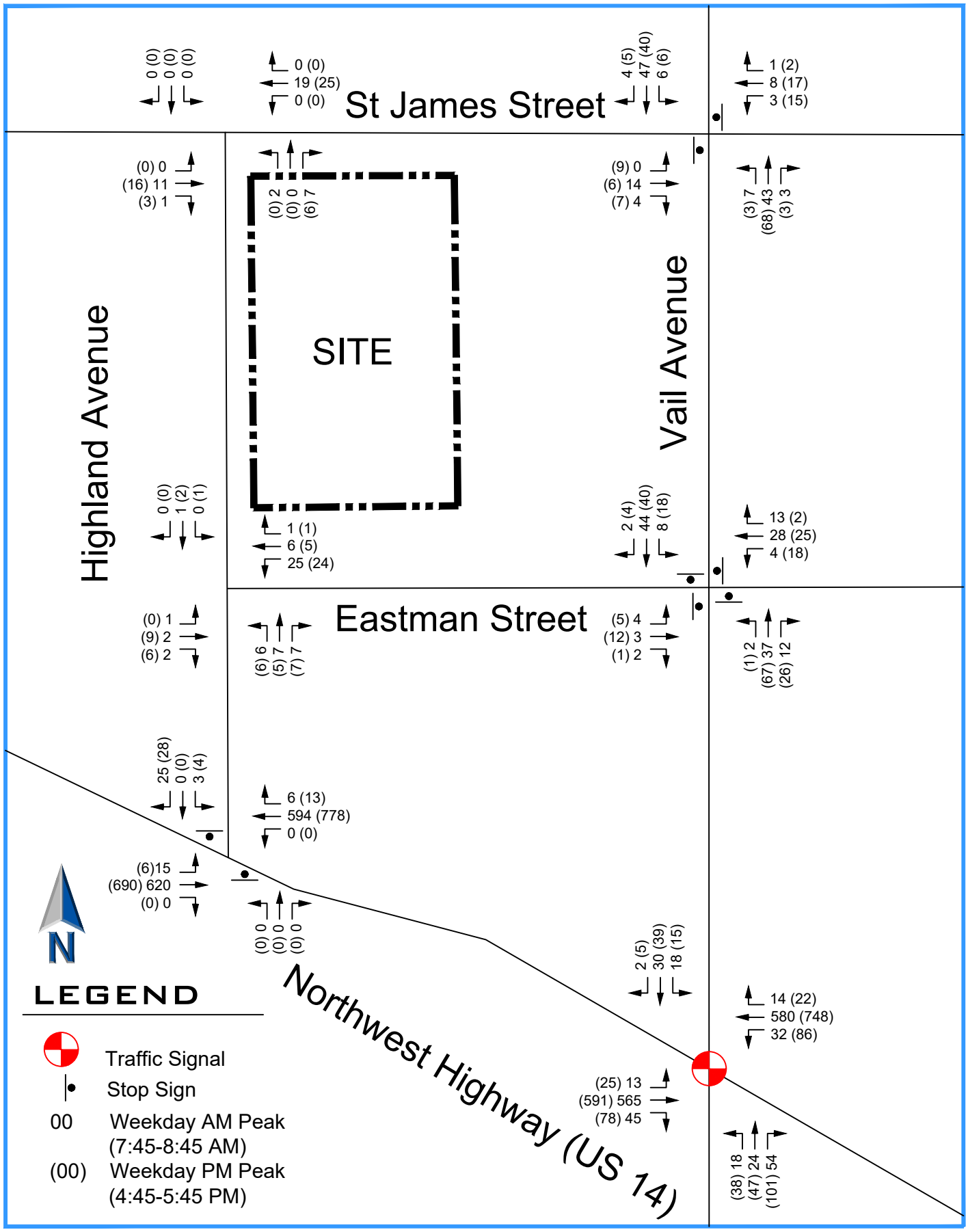
Existing Geometrics

Figure 2



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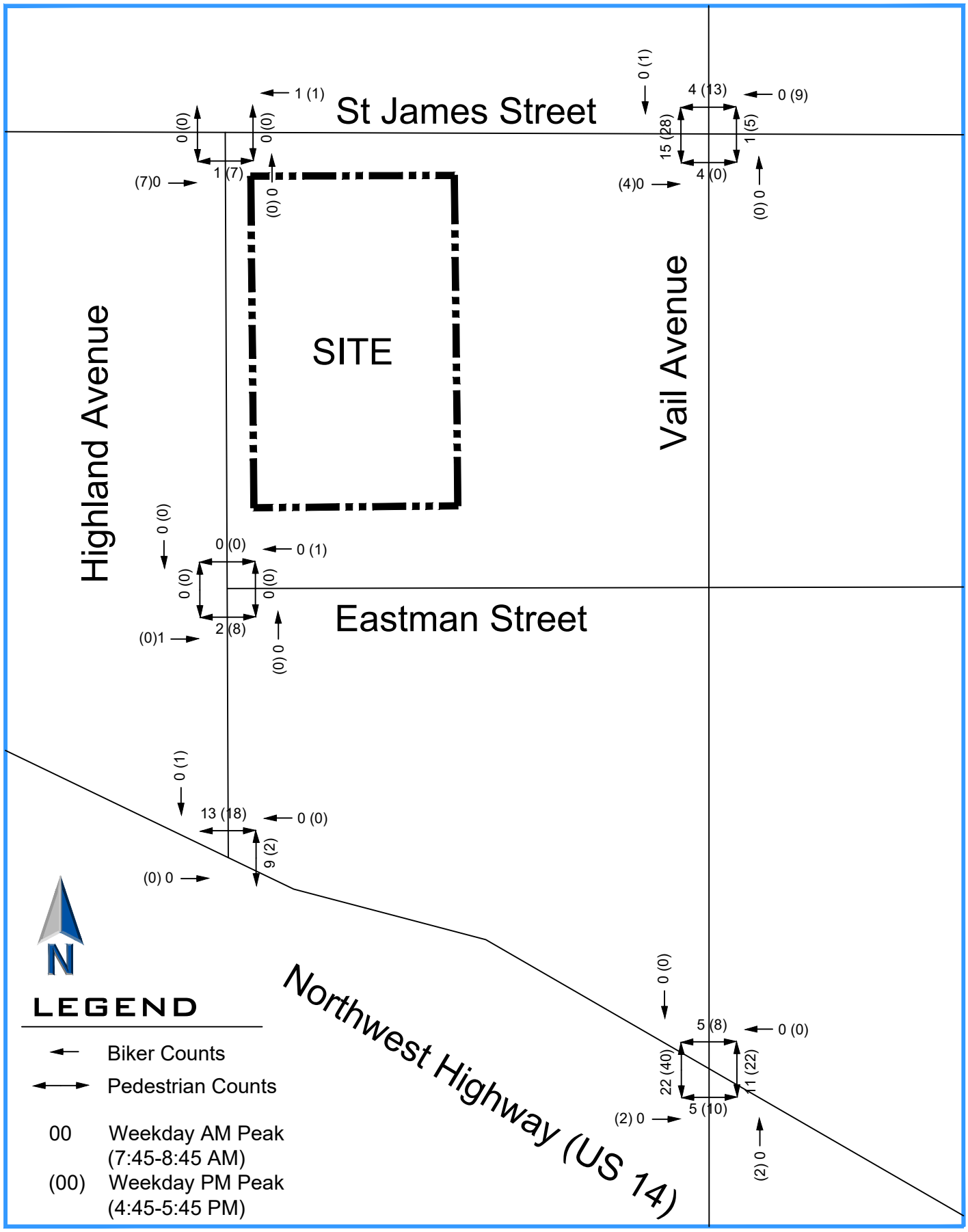
Year 2022 Peak Hour Volumes

Figure 3



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Year 2022 Pedestrian and Bike Volumes

Figure 4

2 - DEVELOPMENT CHARACTERISTICS

Existing and Proposed Site Use

The project site is currently occupied by two-office buildings totaling 55,500 square feet in size with three driveways on the adjacent streets. The proposed development plan is a multi-story apartment building with 136 units with a restaurant (1,885 square feet.). A parking garage for residents will have an entry drive on Eastman Avenue and an exit only access Highland Avenue (private). On-street surface parking is also provided on the private road.

Site Trip Generation

Vehicle traffic volumes generated by the residential and commercial uses were estimated from the Institute of Transportation Engineer's Trip Generation Manual, 11th Edition. **Table 1** summarizes the estimated traffic volumes. **Table 2** illustrates the change in trip generation from the previous office buildings. The overall morning peak-hour volumes drop slightly, and the primary movement becomes outbound for the residential rather than inbound for the offices. In the evening, the volume of traffic increases due to the restaurant by 19 vehicles per hour or just under one vehicle every three minutes.

Table 1
Proposed Site Trip Generation Estimates

Use	ITE LUC	Size	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Apartments	221	136 units	12	38	**50**	32	21	**53**
Restaurant	931	1,885 sq. ft.	1	1	**2**	12	7	**19**
		Total	**13**	**39**	**52**	**44**	**28**	**72**

Table 2
Site Trip Generation Comparison

Use	ITE LUC	Size	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Offices	710	55,500 sq. ft.	57	8	65	9	45	54
Proposed Site Traffic Volumes			13	39	52	44	28	72
		Difference	**-44**	**+31**	**-13**	**+35**	**-17**	**+18**

Directional Distribution

The trip distribution for the development is based on a combination of the existing traffic volumes, the existing road system, traffic congestion, and the proposed site access. The trip distribution for the site is shown on **Table 3** and **Figure 5**.

Table 3
Directional Distribution

Direction	Percentage
North Vail Avenue	10%
East St. James Street	5%
East Eastman Street	10%
East Northwest Highway	35%
South Vail Avenue	5%
West St. James Street	5%
West Northwest Highway	35%
Total	**100%**

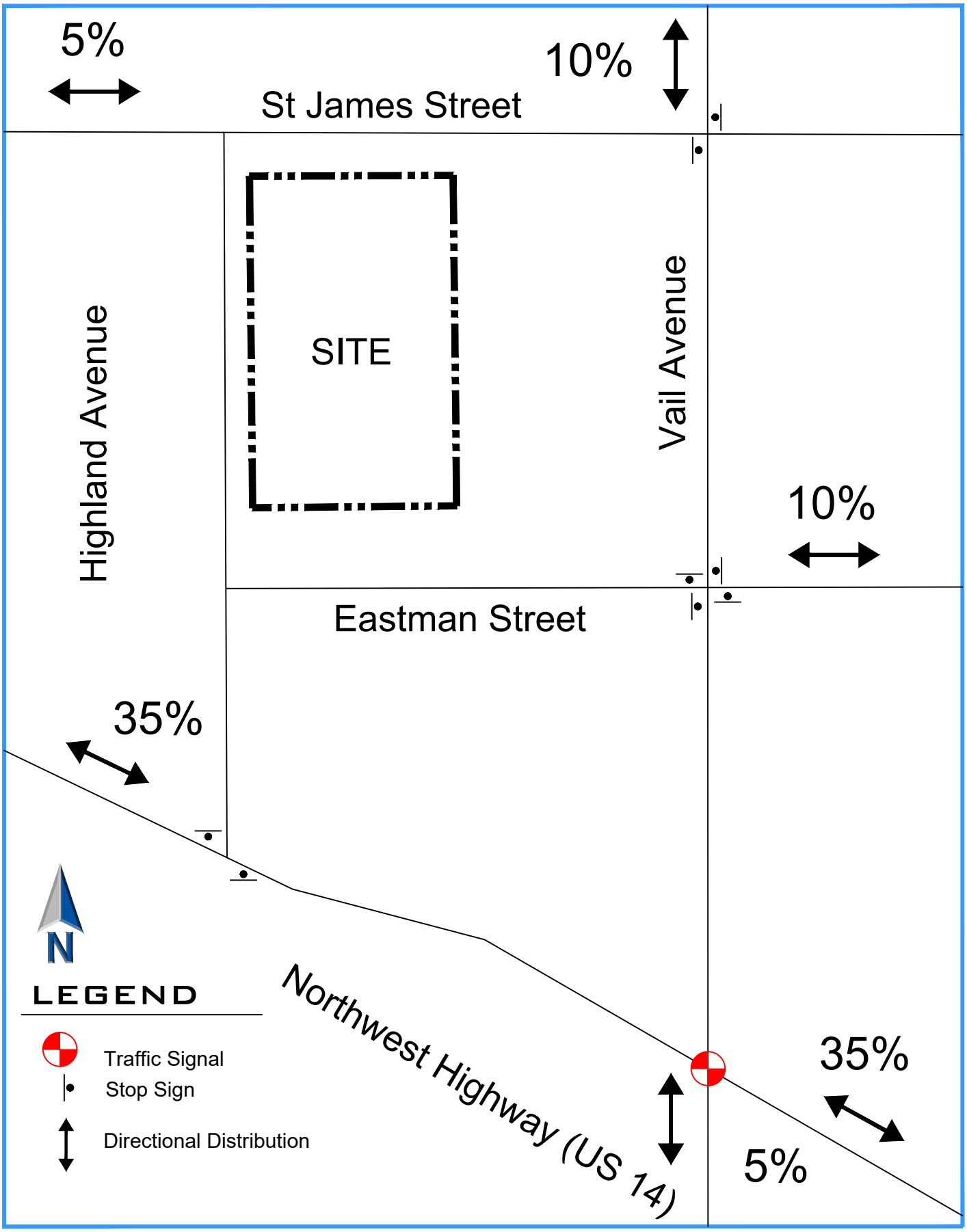
Site Traffic Assignment

Based on trip generation and directional distribution estimates, the site generated traffic was assigned to the proposed garage access drive and area roadways. As part of the plan, Highland Avenue will be widened to handle two-way traffic instead one-way traffic northbound. However, at St. James Street, only emergency vehicles will be permitted to use the access. **Figure 6** shows the resulting traffic assignments.

Total Traffic Volumes

The existing adjusted traffic volumes and annual growth in these volumes were combined to estimate the amount of traffic in the future without the development. The existing traffic volumes were increased by 0.75% per year on Northwest Highway and 0.45% per year on Vail Avenue to account for traffic growth in the area. A five-year period was used (Year 2028). **Figure 7** shows the projected traffic volumes in the study area without the development.

The year 2028 total traffic volumes with the development were calculated by combining the volumes in Figures 6, and 7. The projected traffic volumes are shown in **Figure 8**.



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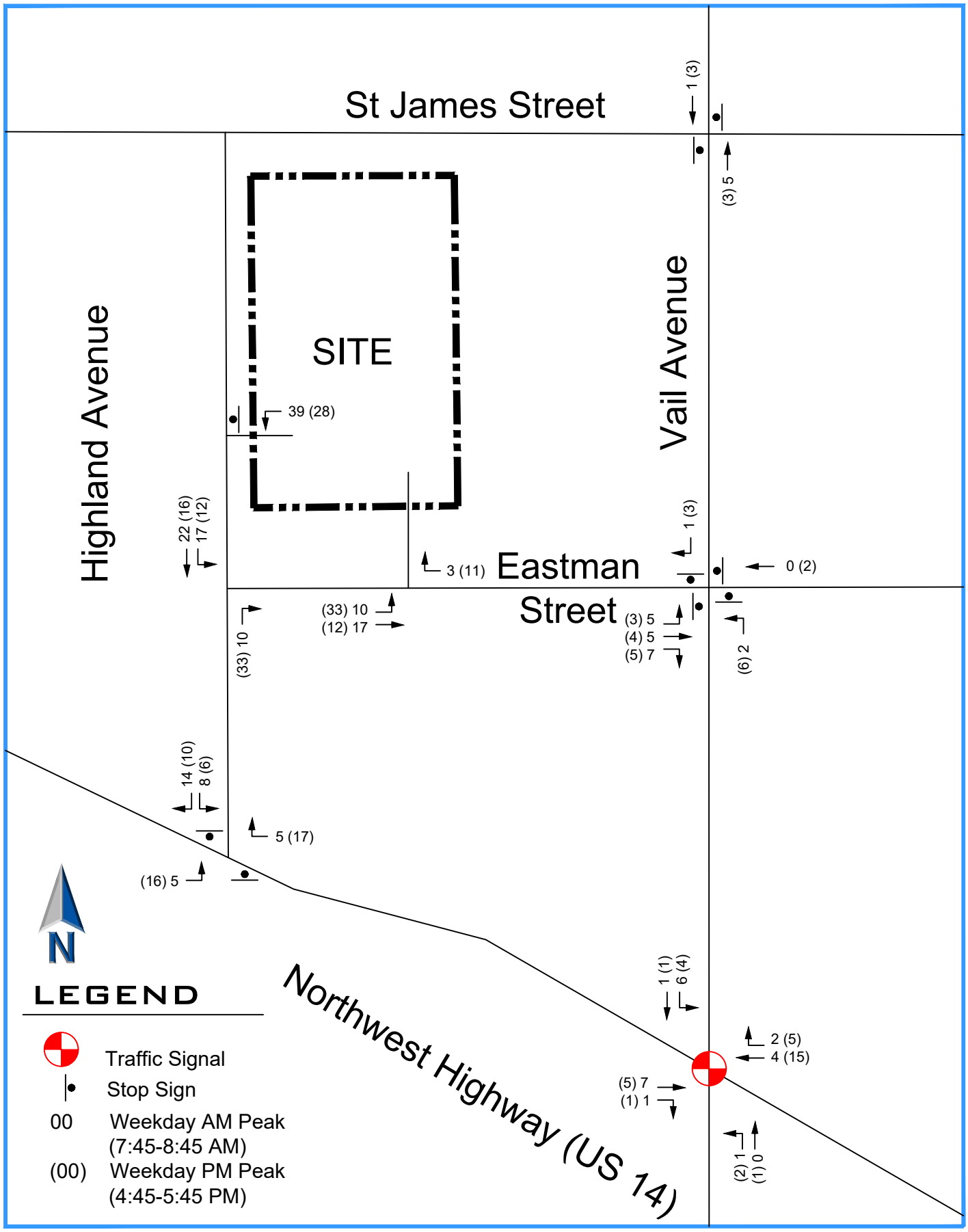
Directional Distribution

Figure 5



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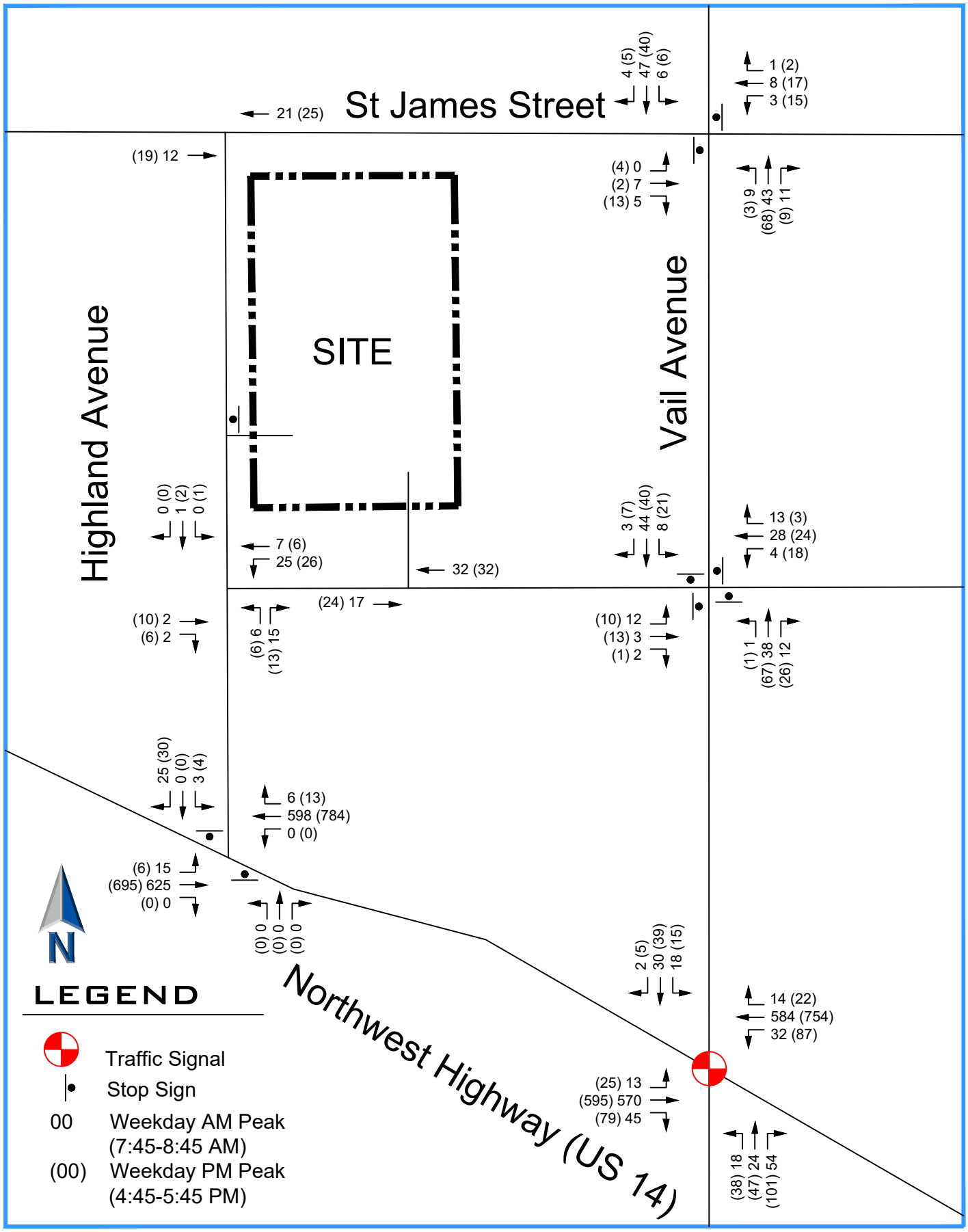
Site Traffic Assignment

Figure 6



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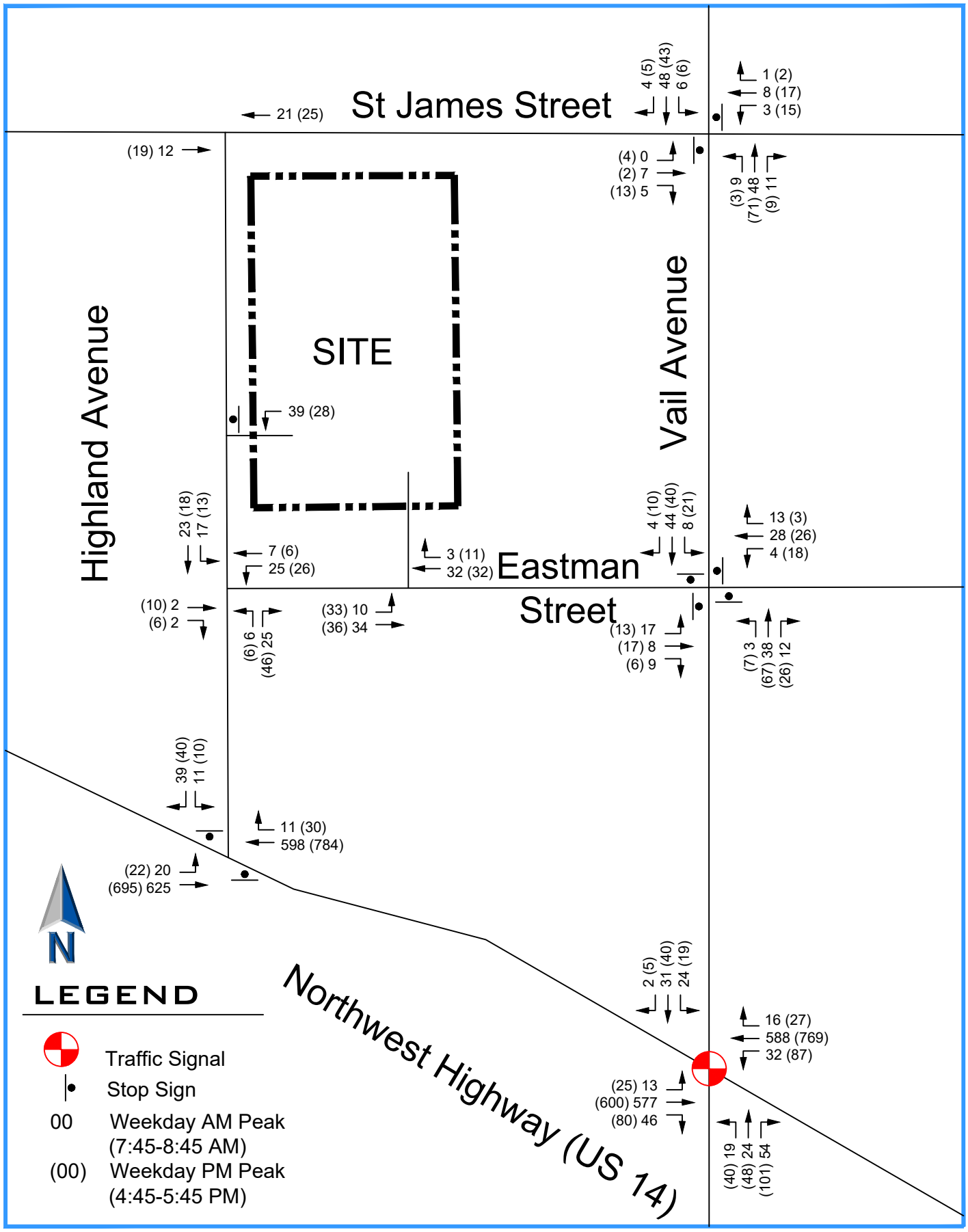
Year 2028 Base Traffic Volumes

Figure 7



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Year 2028 Total Traffic Volumes

Figure 8

3 – ANALYSES

Intersection Capacity Analyses

To determine the operation of the study area intersections and access drives, intersection capacity analyses were conducted for the existing and projected traffic volumes. An intersection's ability to accommodate traffic flow is based on the average control delay experienced by vehicles passing through the intersection. The intersection and individual traffic movements are assigned a level of service (LOS), ranging from A to F based on the control delay created by a traffic signal or stop sign. Control delay consists of the initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. LOS A has the best traffic flow and least delay. LOS E represents saturated or at capacity conditions. LOS F experiences oversaturated conditions and extensive delays. The Highway Capacity Manual definitions for levels of service and the corresponding control delay for both signalized and unsignalized intersections are shown in **Table 3**.

Table 3
Level of Service Criteria for Intersections

Level of Service	Description	Control Delay (seconds/vehicle)	
		Signals	Stop Signs
A	Minimal delay and few stops	<10	<10
B	Low delay with more stops	>10-20	>10-15
C	Light congestion	>20-35	>15-25
D	Congestion is more noticeable with longer delays	>35-55	>25-35
E	High delays and number of stops	>55-80	>35-50
F	Unacceptable delays and over capacity	>80	>50

Source: Highway Capacity Manual

Capacity analyses were conducted for each intersection area using the Highway Capacity Software computer program to determine the existing and future operations of the access system. These analyses were performed for the weekday peak-hours. Copies of the capacity analysis summaries are included in the **Appendix**.

Table 4 shows the existing and future level of service and delay results for the signalized and four-way stop intersections in the study area. In general, all these intersections work well now and in the future. **Table 5** shows the existing and future level of service and delay results for the unsignalized intersections in the study area.

Existing Site Access Drives

Two existing drives on St. James Street and on Eastman Street will be removed as part of the new plan and replaced by one inbound drive. They will reduce the conflicts between vehicles and pedestrians walking along the sidewalk. One on-street space will be lost. On Highland Avenue (private) the driveway will be removed and replaced by a single access point into the parking garage.

Highland Avenue and Eastman Street

With the conversion of Highland Avenue to two-way traffic, the north leg of the intersection will have one northbound lane and one southbound lane. There are no stop signs posted at this intersection. To clarify the rights-of-way, stop signs should be installed on the westbound Eastman Street leg and on the eastbound commercial drive. The intersection is currently operating at a good level of service and will continue to operate that way.

Table 5
Intersection Level of Service and Total Delay

Intersection	Morning Peak		Evening Peak	
	2022	2028	2022	2028
Northwest Highway At Vail Avenue	A-8.6	A-8.8	B-14.6	B-11.9
Vail Avenue at Eastman Street	A-7.3	A-7.4	A-7.6	A-7.7

Table 6
Unsignalized Intersection Level of Service and Total Delay

Intersection	Approach	Morning Peak		Evening Peak	
		2022	2028	2022	2028
Vail Avenue At St James Street	EB Approach	A-9.6	A-9.4	A-9.4	A-9.6
	WB Approach	A-9.7	A-9.7	A-9.8	A-9.9
	NB Left	A-7.3	A-7.3	A-7.3	A-7.3
	SB Left	A-7.3	A-7.3	A-7.4	A-7.4
Highland Avenue at St James Street	WB Left	A-7.2		A-7.3	
	NB Approach	A-8.6		A-8.5	
Highland Avenue at Eastman Street	EB Approach	A-8.8	A-9.3	A-9.0	A-9.5
	WB Approach	A-9.1	A-10.0	A-9.1	A-9.7
	NB Left	A-7.2	A-7.3	A-7.2	A-7.3
	SB Left	A-7.3	A-7.3	A-7.2	A-7.4
Northwest Highway and Highland Avenue	EB Left	A-9.3	A-9.3	A-9.7	A-9.9
	SB Approach	B-13.6	C-16.8	B-14.9	C-18.8
Highland Avenue and Site Exit	WB Left		A-9.0		A-8.9
Eastman Street and Site Entrance	EB Left		A-9.2		A-9.4

Northwest Highway and Vail Avenue

The signalized intersection will continue to operate at a good level of service in the future. No additional improvements are required due to the low volume of site generated traffic. Intermittent congestion caused by commuter trains will still occur.

Vail Avenue and Eastman Street

The all-way-stop-controlled intersection is currently operating at a good level of service and will continue to operate that way. No additional improvements are required.

Vail Avenue and St. James Street

St. James Street at Vail Avenue is under stop sign control. The St. James Street approach volumes are low at 33 vph or less which results in minimal delays at the intersection. No improvements are necessary.

Site Access Exit Drive on Highland Avenue (private)

The access drive is proposed to serve as an exit for the parking garage for the development with one outbound lane. The outbound lane will be under stop sign control and restricted to left turns only to the south. It will replace the previous drive serving the office building's surface parking lot. This private section of Highland Avenue will be primarily used by development related traffic, the overall volumes are low and will have a good level of service.

Site Access Entrance Drive on Eastman Street

The access drive is proposed to serve as an entrance for the parking garage for the development with one inbound lane. The intersection will have a good level of service due to the low overall volumes.

Highland Avenue (private) and St. James Street

Highland Avenue (private) is one-way northbound between Eastman Street and St. James Street. During the traffic counts, there were a few vehicles traveling in the southbound direction illegally. Under the proposed development plan, Highland Avenue will not allow southbound traffic from St James Avenue. . After construction, traffic to and from St James Street onto Highland Avenue will be prohibited. Do Not Enter, No Left-turn, and No Right-turn sings will be added.

Highland Avenue and Northwest Highway

The stop-controlled intersection will continue to operate at a good level of service in the future.

4 – PARKING

The parking needs of the project were determined based on the Village Zoning Code, auto ownership census data, national parking sources, and local parking surveys. The project meets the residential zone code requirement of the Village which is one space per studio/1-bedroom apartments and 1.25 spaces for 2-bedroom apartments. In the past, the Village has required higher parking ratios of 1.3 to 1.5 per unit at other apartment projects. As planned, the proposed project has 1.16 bedrooms per unit which is lower that the bedroom counts at these other projects. As a result, a lower parking ratio should be considered.

Proposed Parking Supply

Parking for the development is provided by a combination of surface and garage spaces. The commercial parking consists of 17 parking spaces in the private street (Highland). With the redevelopment of the site from office to residential/restaurant, a separate 19-space parking easement to the west will be terminated. However, the developer will attempt to renegotiate another parking easement to maintain the use of those spaces. For zoning purposes, those nineteen spaces will not be included.

Within the parking garage, 167 parking spaces are provided for the residents including 22 tandem spaces (1.23 spaces per unit).

Existing Surface Parking Usage

EEA inventoried and conducted parking counts at the existing surface parking spaces by the site on Highland Avenue (public and private), Eastman Avenue between Highland and Vail, and on the adjacent easement parking spaces. **Table 7** summarizes the parking demand for a weekday and a Saturday. Overall, the on-street parking spaces are hardly used due to the office buildings being vacant and the four other adjacent users (AT&T, Mobil, Village Bank & Trust, and the Ottilia retail shop) have their own on-site parking lots. Without the easement parking, 18 of the 19 public on-street parking spaces were empty.

Table 7
Existing Surface Parking Usage

Date	Time	Eastman On-street (Highland to Vail)	Highland Public On-street	Highland Private On-Street	On-street Parking Totals	Parking Easement
Inventory		**17**	**2**	**17**	**36**	**19**
Wednesday March 28, 2023	4:00 PM	1	0	0	**1**	4
	4:30 PM	0	0	0	**0**	4
	5:00 PM	0	0	0	**0**	4
	5:30 PM	0	0	0	**0**	2
	6:00 PM	0	0	0	**0**	1
Saturday April 1, 2023	11:30 AM	0	0	0	**0**	2
	Noon	0	0	0	**0**	2
	12:30 PM	0	0	0	**0**	2
	1:00 PM	0	0	0	**0**	1
	8:00 PM	0	0	0	**0**	1

Across St. James Street to the north, Municipal Lot S is available for parking by the public with 176 available spaces. It has a daily fee enforced 5:00 AM to Noon, Monday through Friday. After 12:00 PM and all day on Saturday and Sunday, free unlimited hours of parking are available. No overnight parking is permitted from 2:00 to 5:00 AM without a parking permit. It is heavily used during the weekday by commuters and lightly used on the weekends. At night, it is partially used by Arlington Heights Library patrons. A farmers market takes place on Saturdays on the north half of the lot with parking open on the south half of the lot. It goes from May to October from 8:00 AM to 12:30 PM.

Village Parking Requirements

The parking requirements for the project are based on the Village of Arlington Zoning Code and its parking requirements. The resulting zoning code requirement is 148 spaces (see **Table 8**). The proposed site plan provides 184 parking spaces for the apartments and restaurant which exceeds the required 148 spaces. Please note that 84% of the units are studio or one-bedroom units. For the residential portion of the project, the 142 required residential parking equates to 1.04 spaces per unit or 0.90. spaces per bedroom. No parking variation is necessary for the development.

Table 8
Arlington Heights Zoning Code Requirements

Use	Size	Zoning Code Requirement	Unit %	Required Parking	Provided Parking
Apartment	47 – Studio units	1.0 spaces per 1-bedroom unit	**35%**	**47**	**167**
	67 1-bedroom units		**49%**	**67**	
	22 2-bedroom units	1.25 spaces per 2-bedroom unit	**16%**	**28**	
Restaurant	1,181 square feet public seating area	1 space per 200 square feet of public seating area		**6**	**17**
			Total Spaces	**148**	**184**

Arlington Heights Vehicle Ownership

Residential vehicle ownership data was obtained from the US Census - American Community Survey (2017 to 2023) for rental units within the Village of Arlington Heights. This data set includes all rental units ranging from senior housing, apartments, and rental condominiums to single-family rental homes, so it is conservatively high. **Table 9** summarizes the data and results for the Village as a whole. A more detailed breakdown of this data can be found in the **Appendix**. For the bedroom counts, studio units were considered as one-bedroom units. For all rental units in the village, the average vehicle ownership is 0.76 vehicles per bedroom. Please note that only 44.5% of the units were studio or one-bedroom units which is much lower than the 84% for the project. The proposed building has 158 bedrooms which would need 120 parking spaces based on the 0.76 veh/bedroom ratio. The Census data was also reviewed for the three main census tracts that make up Downtown Arlington Heights (8033, 8034, and 8035). Rental units in the Downtown area have a slightly lower vehicle ownership than Village wide (0.76 vs 0.71 vehicles per unit). The proposed building has 158 bedrooms which would need 111 parking spaces based on the 0.71 veh/bedroom ratio. The proportion of studios/1-bedrooms were higher than the overall Village at 50.9% but still less than the project.

Table 9
Vehicle Ownership at
Rental Units in Arlington Heights

Location	Rental Units	Total Vehicles Available	Vehicles Per Unit	Total Bedrooms	Vehicles Per Bedroom
Downtown	2,052	2,427	1.18	3,426 (1.67 beds/unit)	0.71 veh/bedroom
Village Wide	8,347	11,040	1.32	14,586 (1.74 beds/unit)	0.76 veh/bedroom
Proposed Site	136	167 spaces	1.23	158 (1.16 beds/unit)	1.06 sp/bedroom

National Parking Rates

A review of national survey data published by the Institute of Transportation Engineers (ITE) in the *Parking Generation*, 5th Edition for the development shows a peak demand of 202 vehicles for the project in **Table 10**. While this is more than the total number of spaces provided, it does not account for the use of public transit and walking adjustments which will reduce the overall parking demand.

The ITE restaurant data was calculated based on square footage and on the number of seats. The preliminary plans for the restaurant show a total of 26 seats which would not support the need for 28 spaces, based on square footage. The parking demand based on seats is 12 spaces.

The Downtown Arlington Heights parking study completed in 2018 included a survey of visitors (not including downtown employees or residents) that indicated that 12% of the visitors do not drive and that, on average, they visit more than one store or restaurant (1.76 stops per trip) further reducing the restaurant demand.

Table 10
National Parking Requirements

Use	Size	Weekday	Saturday
Apartments	33 – Studio units 85 1-bedroom units 18 2-bedroom units	162 1.19 sp/unit 1.05 sp/bedroom	162
Restaurant	1,885 sq. ft.	28	32
	26 seats	12	12
	Total	**184**	**184**

Local Suburban Apartment Rates

Local parking data for similar developments were collected by EEA from the parking study for the Arlington 425 development and from additional locations in the area.

EEA obtained and reviewed the residential parking data provided in Table 6 from the *Arlington 425 Development Traffic and Parking Study* proposed in the southwestern part of Downtown Arlington Heights. That table summarized the parking supply **provided** (not vehicles parked) at 18 apartment developments located near public transit in the suburbs. The parking ratio was calculated on a per unit basis with the average of 1.26 spaces per unit. No information of unit mix and number of bedrooms was provided in the report.

EEA researched the unit mix at each development and recalculated the parking demand on a per bedroom basis. **Table 11** summarizes the results with additional detail in the **Appendix**.

The first two projects in the table were removed because they were originally constructed as condominiums with more parking than an apartment would normally have built. A third project was removed due to the lack of data. The average parking demand dropped from 1.26 to 1.20 space per unit primarily due to the higher condo rates in the original study which is slightly lower than the proposed residential supply of 1.23 spaces per unit. On a per bedroom basis, the average rate is 0.85 spaces per unit. For the proposed 158 bedrooms, the total demand would be 134 spaces.

EEA also collected parking supply and demand data for eight other apartment developments including the number of units, unit mix, spaces provided, and vehicles parked. **Tables 12 and 13** summarizes this information. The results were slightly higher than the data from 425 Arlington report but still show parking demand less that one vehicle per bedroom (0.93) which would predict 147 parked vehicles for the residents.

Table 11
Arlington 425 Parking Data

Project	Location	Total		Spaces Provided	Spaces Per Unit	Spaces per Bedroom
		Units	Bedrooms			
ReNew Five Ninety-Five	Des Plaines	**Removed because they were developed as condominiums and then converted to rentals**				
Kingston Pointe	Des Plaines					
Walker & Parker	Clarendon Hills	42	67	42	1.00	0.63
Forest & Gilbert	Downers Grove	89	120	102	1.15	0.85
Adriatic Cove	Downers Grove	**Data on this project not found**				
Residences at the Grove	Downers Grove	294	423	345	1.17	0.82
100 North Addison	Elmhurst	164	226	199	1.21	0.88
1717 Ridge	Evanston	204	274	205	1.00	0.75
AMLI Evanston	Evanston	214	282	312	1.46	1.11
Central Station	Evanston	80	112	80	1.00	0.71
E2	Evanston	356	483	371	1.04	0.77
Reserve at Evanston	Evanston	195	288	219	1.12	0.76
Midtown Square	Glenview	138	177	160	1.16	0.90
Reserve at Glenview	Glenview	239	387	333	1.39	0.86
Uptown La Grange	La Grange	254	373	336	1.32	0.90
Ninety7Fifty on the Park	Orland Park	295	413	300	1.02	0.73
Wheaton 121	Wheaton	306	394	400	1.31	1.02
Residences of Wilmette	Wilmette	75	119	117	1.56	0.98
	Totals	**2,945**	**4,138 (1.41/unit)**	**3,521**	**1.20**	**0.85**
	Proposed Site	**136**	**158 (1.16/unit)**	**167**	**1.23**	**1.06**

Table 12
Apartment Building Unit Mix and Bedroom Count

Project	Location	Unit Mix						Bedrooms Per Unit
		Studio	1-bed	2-bed	3-bed	Units	Bedrooms	
Hancock Square	Arlington Hts.	30	232	147	0	409	556	1.359
10 North Main	Mount Prospect	14	51	29	3	97	132	1.361
20 West	Mount Prospect	9	41	20	1	71	93	1.310
Maple Street Lofts	Mount Prospect	38	124	30	0	192	222	1.156
One Arlington	Arlington Hts.	51	113	50	0	214	264	1.234
One Wheeling Town Center	Wheeling	11	129	152	9	301	471	1.565
Residences at Payton Place	Arlington Hts.	34	115	87	27	263	404	1.536
Uptown 500	Wheeling	83	102	134	0	319	453	1.420
	Totals	**270**	**907**	**649**	**40**	**1,866**	**2,595**	**1.391**
		14%	**49%**	**35%**	**2%**	**100%**		
Proposed Site		**47**	**67**	**11**	**-**	**136**	**158**	**1.16**

Table 13
Apartment Building Parking Demand

Project	Location	Occupancy Rate	Occupied		Vehicles Parked	Vehicles per	
			Units	Bedrooms		Unit	Bedroom
Hancock Square	Arlington Hts.	96.1%	393	534	483	1.229	0.904
10 North Main	Mount Prospect	96.0%	97	132	129(1)	1.330	0.977
20 West	Mount Prospect	90.1%	64	84	67	1.047	0.800
Maple Street Lofts	Mount Prospect	94.8%	182	210	203	1.115	0.965
One Arlington	Arlington Hts.	97.2%	208	257	272	1.308	1.060
One Wheeling Town Center	Wheeling	90.4%	272	426	361	1.327	0.848
Residences at Payton Place	Arlington Hts.	63.9%	263	404	401(1)	1.525	0.993
Uptown 500	Wheeling	88.7%	283	402	371	1.311	0.923
		Totals	**1,762**	**2,449**	**2,287**	**1.298**	**0.934**
		Proposed Project	**136**	**158**	**167**	**1.23**	**1.06**

(1) Supply data -vehicle usage data not available

Hourly Parking Usage

An analysis of the parking demand for the parking garage (resident only) and the surface parking (residential guests and restaurant customers and staff) though out the weekday and weekend are provided in **Tables 14 and 15**. It is based on the procedures outlined the *Shared Parking Manual* from the Urban Land Institute (ULI). The parking garage peak demand is 158 vehicles within the 167-space parking garage resulting in a surplus of 9 spaces that could be used by guests.

Table 14
Resident Parking Garage Usage
(167 spaces provided)

Period	Weekday Resident	Weekend Resident
6:00 AM	**158.0**	**158.0**
7:00 AM	142.2	142.2
8:00 AM	134.3	134.3
9:00 AM	126.4	126.4
10:00 AM	118.5	118.5
11:00 AM	110.6	110.6
Noon	102.7	102.7
1:00 PM	110.6	110.6
2:00 PM	110.6	110.6
3:00 PM	110.6	110.6
4:00 PM	118.5	118.5
5:00 PM	134.3	134.3
6:00 PM	142.2	142.2
7:00 PM	153.3	153.3
8:00 PM	154.8	154.8
9:00 PM	156.4	156.4
10:00 PM	**158.0**	**158.0**
11:00 PM	**158.0**	**158.0**
Midnight	**158.0**	**158.0**

The on-site surface parking consists of nine parallel spaces along the west side of Highland Avenue (private) and eight perpendicular commercial spaces are located along the east side under the new building for use by the restaurant. **Table 15** shows the projected usage throughout the day. The projected peak demand is 12 vehicles.

Any overflow parking can be accommodated by the 18 available public on-street spaces along Eastman Avenue (16) and Highland Avenue (2). From a practical matter, the location of those spaces relative to the restaurant will result in their use by the restaurant customers in the evening.

Municipal Lot S to the north also has parking spaces available during the evenings during the week and on weekends. After 12:00 PM on weekdays and all day on Saturday and Sunday, free unlimited hours of parking are available at Lot S. The restaurant operating hours will slightly overlap the Farmers Market on Saturdays when overflow parking is not needed.

Table 15
Surface Parking Usage

Period	Restaurant	
	Weekday	Saturday
6:00 AM	1.8	1.0
7:00 AM	3.5	2.3
8:00 AM	4.6	3.5
9:00 AM	5.5	5.0
10:00 AM	6.9	6.3
11:00 AM	8.4	7.1
Noon	10.7	9.3
1:00 PM	10.2	8.8
2:00 PM	7.7	7.3
3:00 PM	5.8	5.8
4:00 PM	6.3	6.0
5:00 PM	9.5	8.0
6:00 PM	10.7	10.0
7:00 PM	**12.0**	**12.0**
8:00 PM	**12.0**	**12.0**
9:00 PM	9.8	7.8
10:00 PM	9.2	7.4
11:00 PM	7.8	6.8
Midnight	3.2	3.9

Parking Recommendation

The residential parking demand for the development was based on the previously mentioned sources on a per unit and per bedroom basis. **Table 16** summarizes the parking source considered and the parking demand based on 136 units. The proposed parking supply exceed the Village Zoning Code requirements by 25 spaces (18%), the census vehicle ownership data, and the surveyed data of similar units. One hundred and sixty-seven residential spaces will more than adequately serve the needs of the residential portion of the development.

It is important to note that parking within the residential portion of the development will not be included as part of the leases for the apartments and an additional monthly fee will be charged to any tenant that desires to park within the development. This will provide economic incentives for tenants to opt out of parking and make better use of alternative travel modes and allow the building management to control the overall number of parked vehicles. The tandem spaces will be managed thru the leasing process and be available for the 15 2-bedroom units and any other unit that may have two persons in that unit.

Table 16
Apartment Parking Summary

Parking Data	Apartment Spaces for 136 units	Spaces per unit	Spaces per Bedroom
Census Data – Village wide	179	**1.32**	0.76
Local Apartment Data	177	**1.30**	0.93
Eastman Proposed Parking Supply	167	**1.23**	1.06
Arlington 425 Data	163	**1.20**	0.85
Institute of Transportation Engineers	162	**1.19**	1.08
Census – Downtown	160	**1.18**	0.71
Zoning Code Requirement	142	**1.04**	0.90

5 - CONCLUSIONS

With the site traffic generated by the project along with other area traffic growth, the traffic analysis developed the following conclusions and recommendations were developed:

1. The proposed development will generate 52 vehicles per hour during the morning peak-hour and 872 trips during the evening peak-hour.
2. Traffic from the former office buildings generated similar volumes in the morning and 18 vph less in the evening.
3. Removal of the two site drives on St. James Street and Eastman Street will reduce the number of vehicular and pedestrian conflict points improving overall safety.
4. The street network can accommodate the additional traffic from the proposed project and future traffic growth.
5. The location of the site and the availability of public transportation, walking and biking will minimize the volume of vehicular traffic generated by the site.
6. The private portion of Highland Avenue will be widened to allow two-way traffic, which is occurring today, and has parallel parking on its west side and perpendicular parking on the east side. Access to St. James will be limited to emergency vehicles.
7. With the conversion of Highland Avenue to two-way traffic stop signs should be installed on westbound Eastman Street and at the eastbound commercial drive.
8. The proposed parking plan exceeds the 148 parking spaces required by code with 184 spaces.
9. The 167-space parking garage will exceed the anticipated demand of 158 vehicles for the residents.
10. Seventeen surface parking spaces will be used by the restaurant customers and staff.

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Appendix

- **Existing 2022 Traffic Counts**
- **CMAP Letter**
- **ITE Trip/Parking Calculations**
- **Apartment Parking Data**
- **Intersection Capacity Analyses**
    - **2022 Existing Conditions**
    - **2028 Total Traffic Volumes**

US 14 - Northwest Highway at Vail Avenue

Arlington Heights, IL															
	Vail Avenue Southbound			Northwest Hwy Westbound			Vail Avenue Northbound			Northwest Hwy Eastbound			15	60	Peak
Begin Time	Right Turn	Through	Left Turn	Right Turn	Through	Left Turn	Right Turn	Through	Left Turn	Right Turn	Through	Left Turn	Minute Totals	Minute Totals	Hour Factor
	Wednesday June 1, 2022														
7:00 AM	1	1	1	2	69	5	6	5	4	5	84	0	183	998	0.84
7:15 AM	1	2	0	5	112	10	18	4	5	6	85	0	248	1135	0.89
7:30 AM	2	4	0	2	101	9	12	8	10	7	113	3	271	1167	0.91
7:45 AM	0	3	2	2	118	5	14	5	1	12	134	0	296	**1180**	**0.92**
8:00 AM	2	4	0	3	141	6	19	4	8	9	117	7	320	1146	0.90
8:15 AM	0	5	2	5	117	6	8	6	3	4	122	2	280		
8:30 AM	0	1	3	1	126	10	5	4	3	14	116	1	284		
8:45 AM	1	7	1	2	101	9	9	7	1	5	117	2	262		
Total	7	27	9	22	885	60	91	43	35	62	888	15			
7:45-8:45 AM	**2**	**13**	**7**	**11**	**502**	**27**	**46**	**19**	**15**	**39**	**489**	**10**	**1180**		
4:00 PM	0	20	1	9	153	19	14	5	9	19	119	4	372	1557	0.90
4:15 PM	1	5	4	6	147	15	21	11	1	14	149	6	380	1592	0.92
4:30 PM	1	9	5	2	137	16	18	15	7	13	145	6	374	1589	0.92
4:45 PM	3	9	1	3	178	21	23	8	7	21	151	6	431	**1626**	**0.94**
5:00 PM	2	8	9	6	176	10	18	14	9	15	137	3	407	1532	0.93
5:15 PM	0	11	3	3	169	26	16	7	9	13	114	6	377		
5:30 PM	0	7	0	8	155	21	34	14	9	21	134	8	411		
5:45 PM	3	6	1	4	125	16	18	14	4	19	118	9	337		
Total	10	75	24	41	1240	144	162	88	55	135	1067	48			
4:45-5:45 PM	**5**	**35**	**13**	**20**	**678**	**78**	**91**	**43**	**34**	**70**	**536**	**23**	**1626**		

Highland Avenue at St James Street

Arlington Heights, IL															
	Highland Avenue Southbound			St James Street Westbound			Highland Avenue Northbound			St James Street Eastbound			15	60	Peak
Begin Time	Right Turn	Through	Left Turn	Right Turn	Through	Left Turn	Right Turn	Through	Left Turn	Right Turn	Through	Left Turn	Minute Totals	Minute Totals	Hour Factor
	Thursday June 2, 2022														
7:00 AM	0	0	0	0	2	0	0	0	0	0	3	0	5	18	0.64
7:15 AM	0	0	0	0	1	0	0	0	0	0	2	0	3	14	0.50
7:30 AM	0	0	0	0	1	0	0	0	0	0	2	0	3	14	0.50
7:45 AM	0	0	0	0	2	0	0	0	0	0	5	0	7	**13**	**0.46**
8:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	12	0.50
8:15 AM	0	0	0	0	1	0	0	0	0	0	2	0	3		
8:30 AM	0	0	0	0	0	0	1	0	0	0	1	0	2		
8:45 AM	0	0	0	0	1	0	2	0	0	0	3	0	6		
Total	0	0	0	0	8	0	3	0	0	0	19	0			
7:45-8:45 AM	**0**	**0**	**0**	**0**	**3**	**0**	**1**	**0**	**0**	**0**	**9**	**0**	**13**		
4:00 PM	0	0	0	0	6	0	1	0	0	0	1	0	8	39	0.89
4:15 PM	0	0	0	0	3	0	3	0	0	0	3	0	9	34	0.77
4:30 PM	0	0	0	0	4	0	3	0	0	1	3	0	11	34	0.77
4:45 PM	0	0	0	0	6	0	2	0	0	0	3	0	11	**31**	**0.70**
5:00 PM	0	0	0	0	0	0	3	0	0	0	0	0	3	24	0.67
5:15 PM	0	0	0	0	6	0	0	0	0	0	3	0	9		
5:30 PM	0	0	0	0	5	0	0	0	0	1	2	0	8		
5:45 PM	0	0	0	0	1	0	1	0	0	0	2	0	4		
Total	0	0	0	0	31	0	13	0	0	2	17	0			
4:45-5:45 PM	**0**	**0**	**0**	**0**	**17**	**0**	**5**	**0**	**0**	**1**	**8**	**0**	**31**		

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Vail Avenue at Eastman Street

Arlington Heights, IL																
	Vail Avenue Southbound			Eastman Street Westbound			Vail Avenue Northbound			Eastman Street Eastbound			15	60	Peak
Begin Time	Right Turn	Through	Left Turn	Right Turn	Through	Left Turn	Right Turn	Through	Left Turn	Right Turn	Through	Left Turn	Minute Totals	Minute Totals	Hour Factor
	Thursday June 2, 2022														
7:00 AM	0	2	0	0	3	3	1	1	0	0	0	0	10	87	0.73
7:15 AM	0	5	0	1	4	1	2	6	0	0	3	0	22	110	0.83
7:30 AM	0	3	0	1	7	2	5	8	0	1	2	1	30	119	0.90
7:45 AM	0	7	1	0	9	0	1	5	1	0	1	0	25	**114**	**0.86**
8:00 AM	1	8	3	3	2	1	3	7	1	1	2	1	33	131	0.78
8:15 AM	1	6	1	1	3	2	1	13	0	1	0	2	31		
8:30 AM	0	8	2	0	3	0	5	7	0	0	0	0	25		
8:45 AM	0	9	3	2	2	6	4	14	0	0	2	0	42		
Total	2	48	10	8	33	15	22	61	2	3	10	4			
7:45-8:45 AM	**2**	**29**	**7**	**4**	**17**	**3**	**10**	**32**	**2**	**2**	**3**	**3**	**114**		
4:00 PM	2	8	1	1	9	8	6	10	0	1	5	0	51	168	0.74
4:15 PM	0	9	2	0	3	2	1	12	0	2	1	0	32	155	0.68
4:30 PM	1	12	4	0	4	2	4	23	1	2	3	1	57	166	0.73
4:45 PM	3	1	1	1	6	3	5	7	0	0	1	0	28	**154**	**0.86**
5:00 PM	1	8	2	0	7	2	3	10	1	1	2	1	38	164	0.91
5:15 PM	0	15	8	1	1	4	4	9	0	0	0	1	43		
5:30 PM	0	5	1	0	9	5	5	19	0	0	1	0	45		
5:45 PM	2	9	3	1	4	4	3	11	0	0	1	0	38		
Total	9	67	22	4	43	30	31	101	2	6	14	3			
4:45-5:45 PM	**4**	**29**	**12**	**2**	**23**	**14**	**17**	**45**	**1**	**1**	**4**	**2**	**154**		

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Vail Avenue at St James Street

Arlington Heights, IL																
	Vail Avenue Southbound			St James Street Westbound			Vail Avenue Northbound			St James Street Eastbound			15	60	Peak
Begin Time	Right Turn	Through	Left Turn	Right Turn	Through	Left Turn	Right Turn	Through	Left Turn	Right Turn	Through	Left Turn	Minute Totals	Minute Totals	Hour Factor
	Tuesday May 31, 2022														
7:00 AM	2	3	0	0	0	0	0	5	0	0	1	0	11	74	0.71
7:15 AM	0	6	1	1	2	0	2	8	1	1	0	1	23	85	0.82
7:30 AM	0	3	0	0	1	0	0	9	0	0	1	0	14	89	0.82
7:45 AM	2	8	2	0	2	1	1	7	0	1	2	0	26	**104**	**0.90**
8:00 AM	0	5	1	0	2	0	0	9	3	0	2	0	22	95	0.82
8:15 AM	1	9	1	0	2	2	1	8	1	0	2	0	27		
8:30 AM	1	6	1	1	0	0	1	13	2	3	1	0	29		
8:45 AM	0	6	1	0	0	0	1	9	0	0	0	0	17		
Total	6	46	7	2	9	3	6	68	7	5	9	1			
7:45-8:45 AM	**4**	**28**	**5**	**1**	**6**	**3**	**3**	**37**	**6**	**4**	**7**	**0**	**104**		
4:00 PM	1	14	0	2	2	4	1	15	2	0	1	1	43	148	0.86
4:15 PM	0	11	1	2	5	6	0	9	0	0	1	2	37	143	0.92
4:30 PM	1	9	2	3	4	1	2	11	0	2	1	3	39	147	0.90
4:45 PM	1	6	2	0	3	4	1	10	0	1	0	1	29	**149**	**0.91**
5:00 PM	0	12	1	0	3	3	0	10	2	3	1	3	38	151	0.92
5:15 PM	1	12	2	1	4	5	1	8	0	3	2	2	41		
5:30 PM	3	6	1	1	5	1	1	18	1	0	2	2	41		
5:45 PM	1	15	1	1	1	0	0	11	0	1	0	0	31		
Total	8	85	10	10	27	24	6	92	5	10	8	14			
4:45-5:45 PM	**5**	**36**	**6**	**2**	**15**	**13**	**3**	**46**	**3**	**7**	**5**	**8**	**149**		

Highland Avenue at Eastman Street

Arlington Heights, IL																
	Highland Avenue Southbound			Eastman Street Westbound			Highland Avenue Northbound			Eastman Street Eastbound			15	60	Peak
Begin Time	Right Turn	Through	Left Turn	Right Turn	Through	Left Turn	Right Turn	Through	Left Turn	Right Turn	Through	Left Turn	Minute Totals	Minute Totals	Hour Factor
	Wednesday June 1, 2022														
7:00 AM	0	0	0	0	0	2	1	0	0	0	0	0	3	27	0.68
7:15 AM	0	1	0	0	0	3	1	0	0	0	0	0	5	30	0.75
7:30 AM	0	0	0	0	0	6	2	1	0	0	0	0	9	46	0.55
7:45 AM	0	0	0	0	0	8	2	0	0	0	0	0	10	**48**	**0.57**
8:00 AM	0	0	0	1	1	2	2	0	0	0	0	0	6	48	0.57
8:15 AM	0	0	0	0	3	8	1	4	3	1	1	0	21		
8:30 AM	0	1	0	0	1	4	0	1	1	1	1	1	11		
8:45 AM	0	0	0	1	2	3	0	3	1	0	0	0	10		
Total	0	2	0	2	7	36	9	9	5	2	2	1			
7:45-8:45 AM	**0**	**1**	**0**	**1**	**5**	**22**	**5**	**5**	**4**	**2**	**2**	**1**	**48**		
4:00 PM	0	0	0	1	1	6	0	2	2	1	1	0	14	65	0.81
4:15 PM	0	2	0	1	1	5	0	1	3	2	3	1	19	70	0.88
4:30 PM	0	1	0	0	0	9	1	0	0	0	1	0	12	63	0.79
4:45 PM	0	1	0	0	0	6	2	2	1	3	5	0	20	**57**	**0.71**
5:00 PM	0	1	0	0	2	8	1	1	2	2	2	0	19	49	0.64
5:15 PM	0	0	1	0	1	4	1	1	1	1	2	0	12		
5:30 PM	0	0	0	1	0	0	2	1	2	0	0	0	6		
5:45 PM	0	0	0	2	0	3	1	5	0	0	1	0	12		
Total	0	5	1	5	5	41	8	13	11	9	15	1			
4:45-5:45 PM	**0**	**2**	**1**	**1**	**3**	**18**	**6**	**5**	**6**	**6**	**9**	**0**	**57**		

US 14 - Northwest Highway at Highland Avenue

Arlington Heights, IL															
	Highland Avenue Southbound			Northwest Hwy Westbound			Highland Avenue Northbound			Northwest Hwy Eastbound			15	60	Peak
Begin Time	Right Turn	Through	Left Turn	Right Turn	Through	Left Turn	Right Turn	Through	Left Turn	Right Turn	Through	Left Turn	Minute Totals	Minute Totals	Hour Factor
	Wednesday June 1, 2022														
7:00 AM	2	0	0	0	57	0	0	0	0	0	85	1	145	769	0.81
7:15 AM	11	0	1	0	73	0	0	0	0	0	91	0	176	897	0.82
7:30 AM	4	0	0	0	120	0	0	0	0	0	111	1	236	1027	0.84
7:45 AM	2	0	0	0	113	0	0	0	0	0	93	4	212	**1013**	**0.83**
8:00 AM	9	0	1	0	138	0	0	0	0	0	123	2	273	1047	0.86
8:15 AM	3	0	1	2	143	0	0	0	0	0	153	4	306		
8:30 AM	7	0	1	3	94	0	0	0	0	0	115	2	222		
8:45 AM	2	0	0	1	100	0	0	0	0	0	140	3	246		
Total	40	0	4	6	838	0	0	0	0	0	911	17			
7:45-8:45 AM	**21**	**0**	**3**	**5**	**488**	**0**	**0**	**0**	**0**	**0**	**484**	**12**	**1013**		
4:00 PM	5	0	1	0	182	0	0	0	0	0	149	0	337	1265	0.94
4:15 PM	0	0	0	2	146	0	0	0	0	0	142	0	290	1265	0.94
4:30 PM	7	0	2	0	163	0	0	0	0	0	160	0	332	1318	0.96
4:45 PM	6	0	0	1	151	0	0	0	0	0	148	0	306	**1268**	**0.92**
5:00 PM	10	0	2	3	157	0	0	0	0	0	162	3	337	1269	0.92
5:15 PM	6	0	0	1	177	0	0	0	0	0	158	1	343		
5:30 PM	4	0	2	4	143	0	0	0	0	0	129	0	282		
5:45 PM	1	0	3	2	142	0	0	0	0	0	157	2	307		
Total	39	0	10	13	1261	0	0	0	0	0	1205	6			
4:45-5:45 PM	**26**	**0**	**4**	**9**	**628**	**0**	**0**	**0**	**0**	**0**	**597**	**4**	**1268**		

City: Arlington Heights
Count Location: Highland Ave. and Eastman St. / Parking Lot
Study Date: – June 1st, 2022 (On-Street Biker Counts)

Time	East Approach	West Approach	North Approach	South Approach	Total Bikers
7:00-7:15 a.m.	0	1	0	0	1
7:15-7:30 a.m.	0	0	0	0	0
7:30-7:45 a.m.	0	0	0	0	0
7:45-8:00 a.m.	0	0	0	0	0
8:00-8:15 a.m.	0	0	0	0	0
8:15-8:30 a.m.	0	1	0	0	1
8:30-8:45 a.m.	0	0	0	0	0
8:45-9:00 a.m.	1	0	0	0	1
Morning Totals	**1**	**2**	**0**	**0**	**3**
4:00-4:15 p.m.	0	0	0	0	0
4:15-4:30 p.m.	0	0	0	0	0
4:30-4:45 p.m.	0	0	0	0	0
4:45-5:00 p.m.	1	0	0	0	1
5:00-5:15 p.m.	0	0	0	0	0
5:15-5:30 p.m.	0	0	0	0	0
5:30-5:45 p.m.	0	0	0	0	0
5:45-6:00 p.m.	0	0	0	0	0
Afternoon Totals	**1**	**0**	**0**	**0**	**1**

City: Arlington Heights
Count Location: Highland Ave. and Eastman St. / Parking Lot
Study Date: – June 1st, 2022 (Pedestrian Crosswalk Counts)

Time	East Crosswalk	West Crosswalk	North Crosswalk	South Crosswalk	Total Pedestrians
7:00-7:15 a.m.	0	0	0	0	3
7:15-7:30 a.m.	0	0	0	0	14
7:30-7:45 a.m.	0	0	0	0	8
7:45-8:00 a.m.	0	0	0	1	8
8:00-8:15 a.m.	0	0	0	0	6
8:15-8:30 a.m.	0	0	0	1	4
8:30-8:45 a.m.	0	0	0	0	2
8:45-9:00 a.m.	0	0	0	1	3
Morning Totals	**0**	**0**	**0**	**3**	**3**
4:00-4:15 p.m.	0	0	0	1	1
4:15-4:30 p.m.	1	0	0	1	2
4:30-4:45 p.m.	1	0	0	1	2
4:45-5:00 p.m.	0	0	0	0	0
5:00-5:15 p.m.	0	0	0	1	1
5:15-5:30 p.m.	0	0	0	4	4
5:30-5:45 p.m.	0	0	0	3	3
5:45-6:00 p.m.	1	0	0	0	1
Afternoon Totals	**3**	**0**	**0**	**11**	**14**

City: Arlington Heights
Count Location: Highland Ave. and Northwest Highway
Study Date: – June 7th, 2022 (On-Street Biker Counts)

Time	East Approach	West Approach	North Approach	Total Bikers
7:00-7:15 a.m.	0	3	0	3
7:15-7:30 a.m.	0	0	0	0
7:30-7:45 a.m.	0	0	0	0
7:45-8:00 a.m.	0	0	0	0
8:00-8:15 a.m.	0	0	0	0
8:15-8:30 a.m.	0	0	0	0
8:30-8:45 a.m.	0	0	0	0
8:45-9:00 a.m.	0	0	0	0
Morning Totals	**0**	**3**	**0**	**3**
4:00-4:15 p.m.	0	0	0	0
4:15-4:30 p.m.	0	0	0	0
4:30-4:45 p.m.	0	0	0	0
4:45-5:00 p.m.	0	0	0	0
5:00-5:15 p.m.	0	0	1	1
5:15-5:30 p.m.	0	0	0	0
5:30-5:45 p.m.	0	0	0	0
5:45-6:00 p.m.	0	0	0	0
Afternoon Totals	**0**	**0**	**1**	**1**

City: Arlington Heights
Count Location: Highland Ave. and Northwest Highway
Study Date: – June 7th, 2022 (Pedestrian Crosswalk Counts)

Time	Across NW Highway	Across Highland	Total Pedestrians
7:00-7:15 a.m.	0	0	0
7:15-7:30 a.m.	0	0	0
7:30-7:45 a.m.	0	0	0
7:45-8:00 a.m.	2	3	5
8:00-8:15 a.m.	2	3	5
8:15-8:30 a.m.	1	2	3
8:30-8:45 a.m.	4	5	9
8:45-9:00 a.m.	0	0	0
Morning Totals	**9**	**13**	**22**
4:00-4:15 p.m.	1	3	4
4:15-4:30 p.m.	0	0	0
4:30-4:45 p.m.	0	5	5
4:45-5:00 p.m.	0	5	5
5:00-5:15 p.m.	1	4	5
5:15-5:30 p.m.	1	3	4
5:30-5:45 p.m.	0	6	6
5:45-6:00 p.m.	0	4	4
Afternoon Totals	**3**	**30**	**33**

City: Arlington Heights
Count Location: Highland Ave. and St. James St.
Study Date: – June 2nd, 2022 (On-Street Biker Counts)

Time	East Approach	West Approach	South Approach	Total Bikers
7:00-7:15 a.m.	0	0	0	0
7:15-7:30 a.m.	0	0	0	0
7:30-7:45 a.m.	0	1	0	1
7:45-8:00 a.m.	0	0	0	0
8:00-8:15 a.m.	1	0	0	1
8:15-8:30 a.m.	0	0	0	0
8:30-8:45 a.m.	0	0	0	0
8:45-9:00 a.m.	0	0	0	0
Morning Totals	**1**	**1**	**0**	**2**
4:00-4:15 p.m.	3	0	0	3
4:15-4:30 p.m.	0	0	0	0
4:30-4:45 p.m.	0	0	0	0
4:45-5:00 p.m.	0	0	0	0
5:00-5:15 p.m.	0	6	0	6
5:15-5:30 p.m.	0	1	0	1
5:30-5:45 p.m.	1	0	0	1
5:45-6:00 p.m.	0	0	0	0
Afternoon Totals	**4**	**7**	**0**	**11**

City: Arlington Heights
Count Location: Highland Ave. and St. James St.
Study Date: – June 2nd, 2022 (Pedestrian Counts)

Time	East Crosswalk	West Crosswalk	South Crosswalk	Total Pedestrians
7:00-7:15 a.m.	0	0	0	0
7:15-7:30 a.m.	0	0	2	2
7:30-7:45 a.m.	0	0	0	0
7:45-8:00 a.m.	0	0	0	0
8:00-8:15 a.m.	0	0	0	0
8:15-8:30 a.m.	0	0	0	0
8:30-8:45 a.m.	0	0	1	1
8:45-9:00 a.m.	0	0	0	0
Morning Totals	**0**	**0**	**3**	**3**
4:00-4:15 p.m.	0	0	0	0
4:15-4:30 p.m.	0	0	0	0
4:30-4:45 p.m.	0	1	0	1
4:45-5:00 p.m.	0	0	4	4
5:00-5:15 p.m.	0	0	2	2
5:15-5:30 p.m.	0	0	0	0
5:30-5:45 p.m.	0	0	1	1
5:45-6:00 p.m.	0	0	0	0
Afternoon Totals	**0**	**1**	**7**	**8**

City: Arlington Heights
Count Location: Vail Ave. and Northwest Highway
Study Date: – June 1st, 2022 (On-Street Biker Counts)

Time	East Approach	West Approach	North Approach	South Approach	Total Bikers
7:00-7:15 a.m.	1	0	0	0	1
7:15-7:30 a.m.	0	0	0	0	0
7:30-7:45 a.m.	0	0	0	0	0
7:45-8:00 a.m.	0	0	0	0	0
8:00-8:15 a.m.	0	0	0	0	0
8:15-8:30 a.m.	0	0	0	0	0
8:30-8:45 a.m.	0	0	0	0	0
8:45-9:00 a.m.	0	0	0	0	1
Morning Totals	**1**	**0**	**0**	**0**	**1**
4:00-4:15 p.m.	0	0	1	0	1
4:15-4:30 p.m.	0	0	0	0	0
4:30-4:45 p.m.	1	0	0	0	1
4:45-5:00 p.m.	0	0	0	0	0
5:00-5:15 p.m.	0	0	0	0	0
5:15-5:30 p.m.	0	0	0	1	1
5:30-5:45 p.m.	0	2	0	1	3
5:45-6:00 p.m.	0	0	1	0	1
Afternoon Totals	**1**	**2**	**2**	**2**	**7**

City: Arlington Heights
Count Location: Vail Ave. and Northwest Highway
Study Date: – June 1st, 2022 (Pedestrian Crosswalk Counts)

Time	East Crosswalk	West Crosswalk	North Crosswalk	South Crosswalk	Total Pedestrians
7:00-7:15 a.m.	1	8	0	1	10
7:15-7:30 a.m.	8	11	4	1	24
7:30-7:45 a.m.	3	4	2	0	9
7:45-8:00 a.m.	3	2	2	0	7
8:00-8:15 a.m.	3	11	2	0	16
8:15-8:30 a.m.	0	5	0	3	8
8:30-8:45 a.m.	5	4	1	2	12
8:45-9:00 a.m.	0	1	1	0	2
Morning Totals	**23**	**46**	**12**	**7**	**88**
4:00-4:15 p.m.	2	0	2	4	8
4:15-4:30 p.m.	3	15	0	1	19
4:30-4:45 p.m.	1	8	0	0	9
4:45-5:00 p.m.	5	5	0	1	11
5:00-5:15 p.m.	5	5	1	2	13
5:15-5:30 p.m.	9	10	4	4	27
5:30-5:45 p.m.	3	20	3	3	29
5:45-6:00 p.m.	7	15	3	1	26
Afternoon Totals	**35**	**78**	**13**	**16**	**142**

City: Arlington Heights
Count Location: Vail Ave. and St. James St.
Study Date: – May 31st, 2022 (On-Street Biker Counts)

Time	East Approach	West Approach	North Approach	South Approach	Total Bikers
7:00-7:15 a.m.	1	0	0	0	1
7:15-7:30 a.m.	0	0	0	0	0
7:30-7:45 a.m.	0	0	0	0	0
7:45-8:00 a.m.	0	0	0	0	0
8:00-8:15 a.m.	0	0	0	0	0
8:15-8:30 a.m.	0	0	0	0	0
8:30-8:45 a.m.	0	0	0	0	0
8:45-9:00 a.m.	0	0	0	1	1
Morning Totals	**1**	**0**	**0**	**1**	**2**
4:00-4:15 p.m.	0	0	0	0	0
4:15-4:30 p.m.	2	0	0	0	2
4:30-4:45 p.m.	0	0	0	0	0
4:45-5:00 p.m.	0	1	0	0	1
5:00-5:15 p.m.	1	0	0	0	1
5:15-5:30 p.m.	2	1	1	0	4
5:30-5:45 p.m.	6	2	0	0	8
5:45-6:00 p.m.	0	0	0	2	2
Afternoon Totals	**11**	**4**	**1**	**2**	**18**

City: Arlington Heights
Count Location: Vail Ave. and St. James St.
Study Date: – May 31st, 2022 (Pedestrian Crosswalk Counts)

Time	East Crosswalk	West Crosswalk	North Crosswalk	South Crosswalk	Total Pedestrians
7:00-7:15 a.m.	0	3	0	3	6
7:15-7:30 a.m.	4	9	2	2	17
7:30-7:45 a.m.	2	6	1	0	9
7:45-8:00 a.m.	0	5	1	2	8
8:00-8:15 a.m.	0	6	2	0	8
8:15-8:30 a.m.	0	1	0	1	2
8:30-8:45 a.m.	1	3	1	1	6
8:45-9:00 a.m.	0	0	0	0	0
Morning Totals	**7**	**33**	**7**	**9**	**56**
4:00-4:15 p.m.	0	3	2	0	5
4:15-4:30 p.m.	1	0	1	0	2
4:30-4:45 p.m.	4	6	0	0	10
4:45-5:00 p.m.	3	7	4	0	14
5:00-5:15 p.m.	0	2	2	0	4
5:15-5:30 p.m.	1	10	0	0	11
5:30-5:45 p.m.	1	9	7	0	17
5:45-6:00 p.m.	2	6	0	1	9
Afternoon Totals	**12**	**43**	**16**	**1**	**72**

Chicago Metropolitan Agency for Planning

433 West Van Buren Street
Suite 450
Chicago, IL 60607

312-454-0400
cmap.illinois.gov

May 5, 2022

Stephen B. Corcoran, P.E., PTOE
Director of Traffic Engineering
Eriksson Engineering Associates, Ltd.
145 Commerce Drive
Suite A
Grayslake, IL 60030

Subject: ***Northwest Highway @ Vail Avenue***
IDOT

Dear Mr. Corcoran:

In response to a request made on your behalf and dated May 5, 2022, we have developed year 2050 average daily traffic (ADT) projections for the subject location.

ROAD SEGMENT	Current ADT	Year 2050 ADT
NW Highway, @ Vail Avenue	15,800	19,700
Vail Avenue, @ NW Highway	700	800

Traffic projections are developed using existing ADT data provided in the request letter and the results from the December 2021 CMAP Travel Demand Analysis. The regional travel model uses CMAP 2050 socioeconomic projections and assumes the implementation of the ON TO 2050 Comprehensive Regional Plan for the Northeastern Illinois area. The provision of this data in support of your request does not constitute a CMAP endorsement of the proposed development or any subsequent developments.

If you have any questions, please call me at (312) 386-8806.

Sincerely,

Jose Rodriguez, PTP, AICP
Senior Planner, Research & Analysis

cc: Rios (IDOT)
2022_ForecastTraffic\ArlingtonHeights\ck-58-22\ck-58-22.docx

TRAFFIC FORECAST RECORD

Record Number: ck-58-22
Type of Report: Projection
Year Sought: 2050
Analyst: JAR
Organization requesting forecast: Eriksson Engineering Associates
Contact: Stephen B. Corcoran, P.E. , PTOE
Email or Phone scorcoran@eea-ltd.com
Sponsor: IDOT
Date request was received: May 5, 2022
Date that response was emailed: May 5, 2022
Facility Location: Northwest Highway @ Vail Avenue
Municipality: Arlington Heights

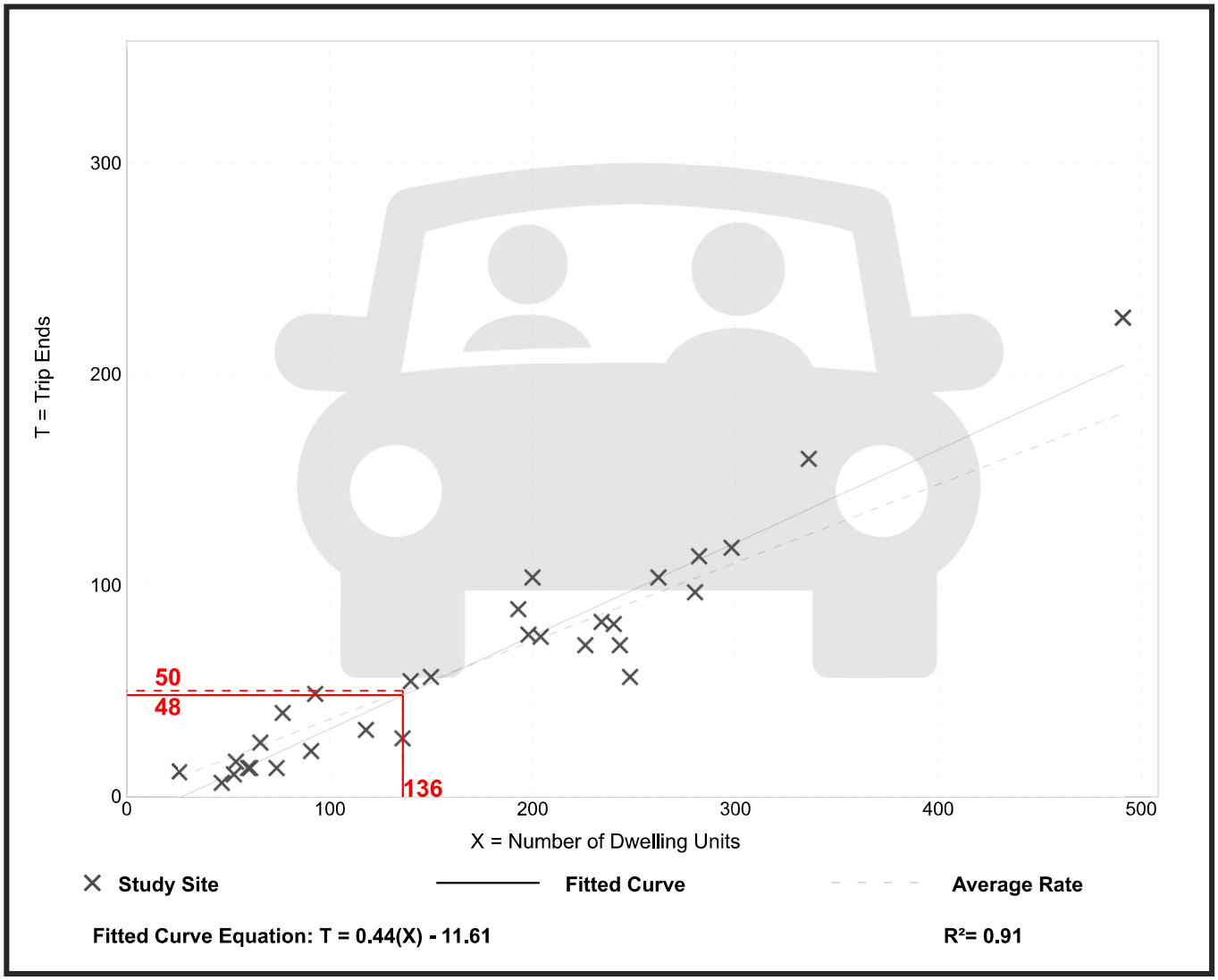
Multifamily Housing (Mid-Rise)
Not Close to Rail Transit (221)

Vehicle Trip Ends vs:	**Dwelling Units**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	30
Avg. Num. of Dwelling Units:	173
Directional Distribution:	23% entering, 77% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.37	0.15 - 0.53	0.09

Data Plot and Equation



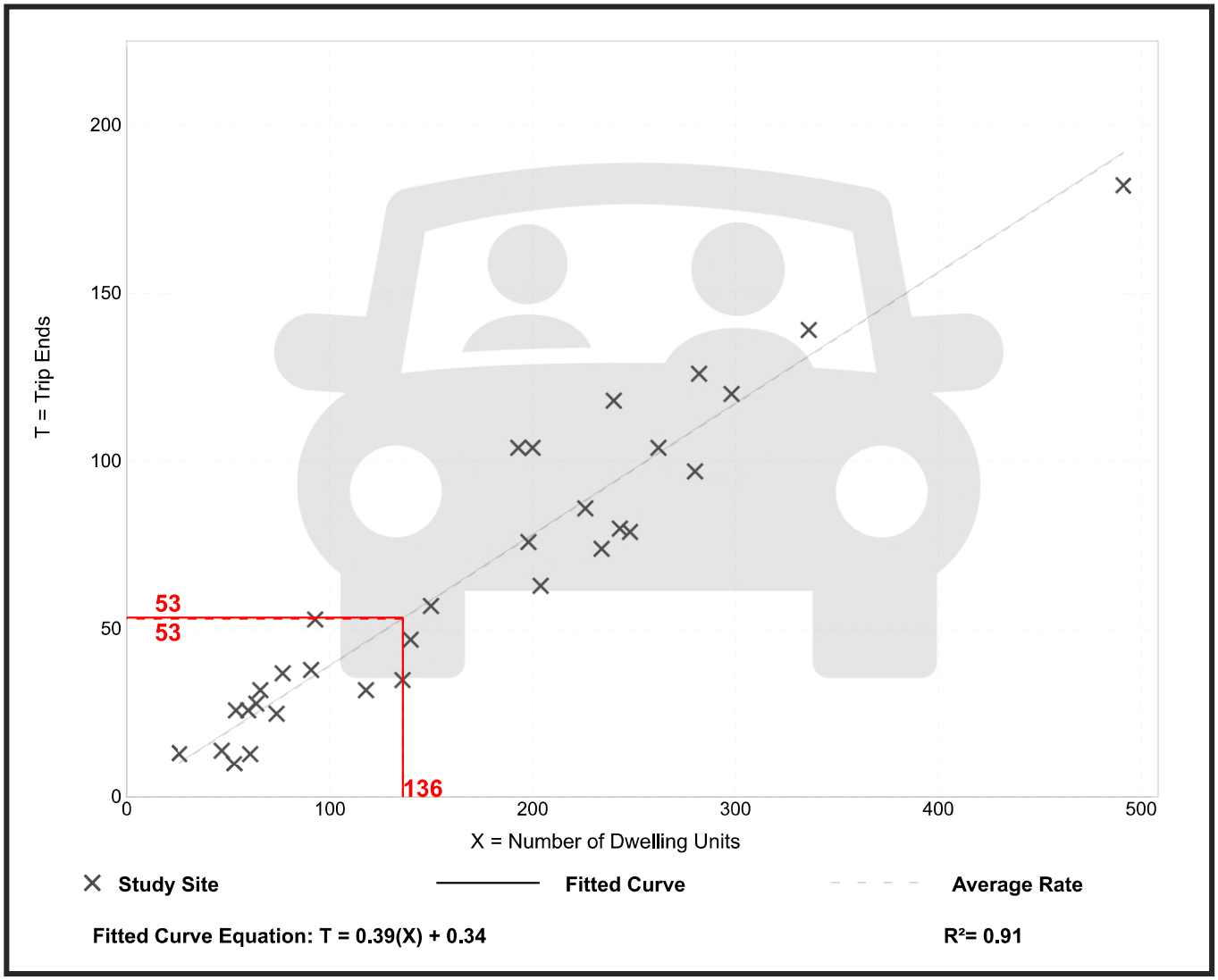
Multifamily Housing (Mid-Rise)
Not Close to Rail Transit (221)

Vehicle Trip Ends vs:	**Dwelling Units**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	31
Avg. Num. of Dwelling Units:	169
Directional Distribution:	61% entering, 39% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.39	0.19 - 0.57	0.08

Data Plot and Equation



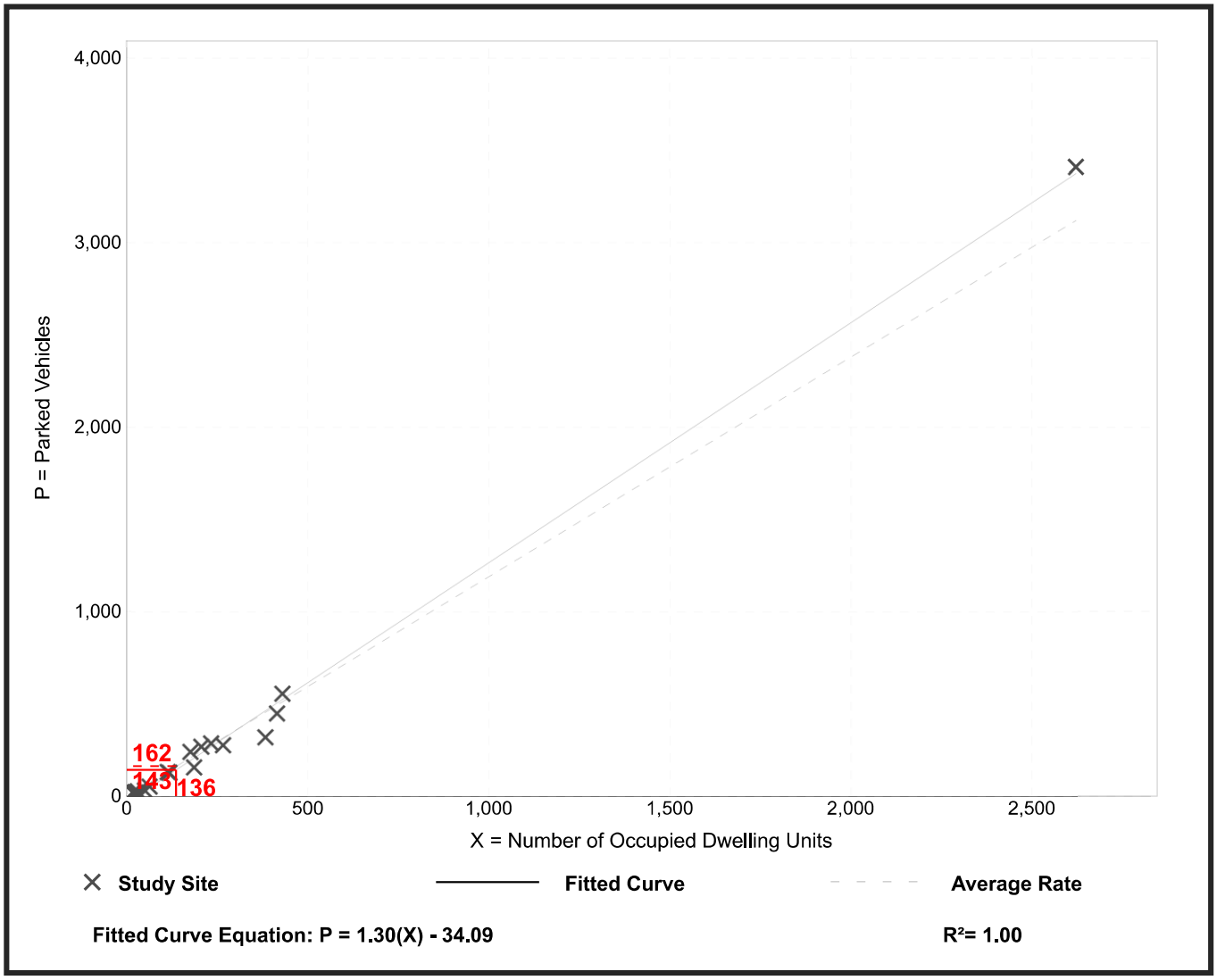
Multifamily Housing (Mid-Rise)
(221)

Peak Period Parking Demand vs: **Occupied Dwelling Units**
On a: **Weekday (Monday - Friday)**
Setting/Location: **General Urban/Suburban (< 1/2 mile to rail transit)**
Peak Period of Parking Demand: **10:00 p.m. - 5:00 a.m.**
Number of Studies: 18
Avg. Num. of Occupied Dwelling Units: 299

Peak Period Parking Demand per Occupied Dwelling Unit

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
1.19	0.55 - 1.37	0.84 / 1.30	***	0.19 (16%)

Data Plot and Equation



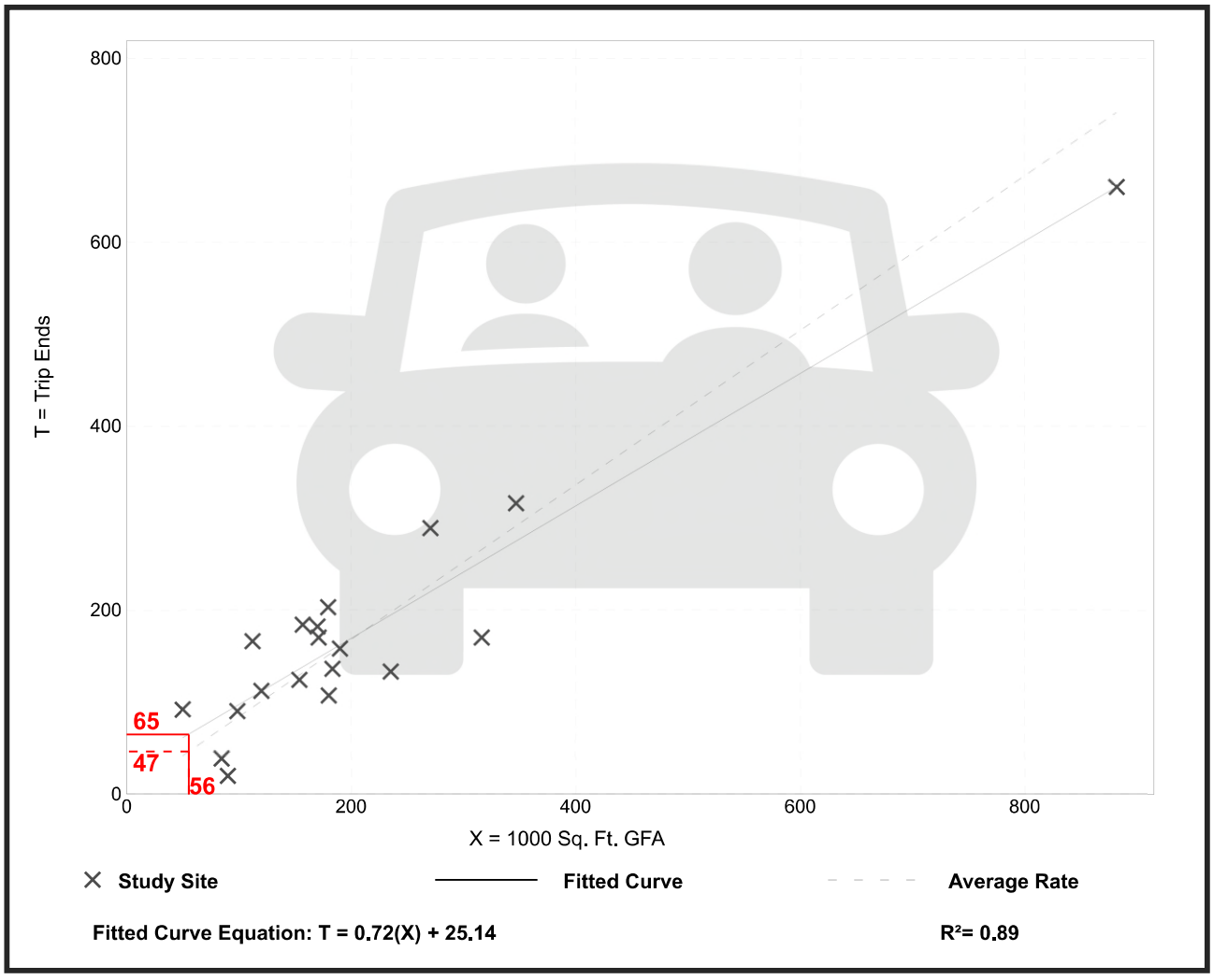
General Office Building
(710)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **Dense Multi-Use Urban**
Number of Studies: 19
Avg. 1000 Sq. Ft. GFA: 210
Directional Distribution: 87% entering, 13% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.84	0.22 - 1.84	0.27

Data Plot and Equation



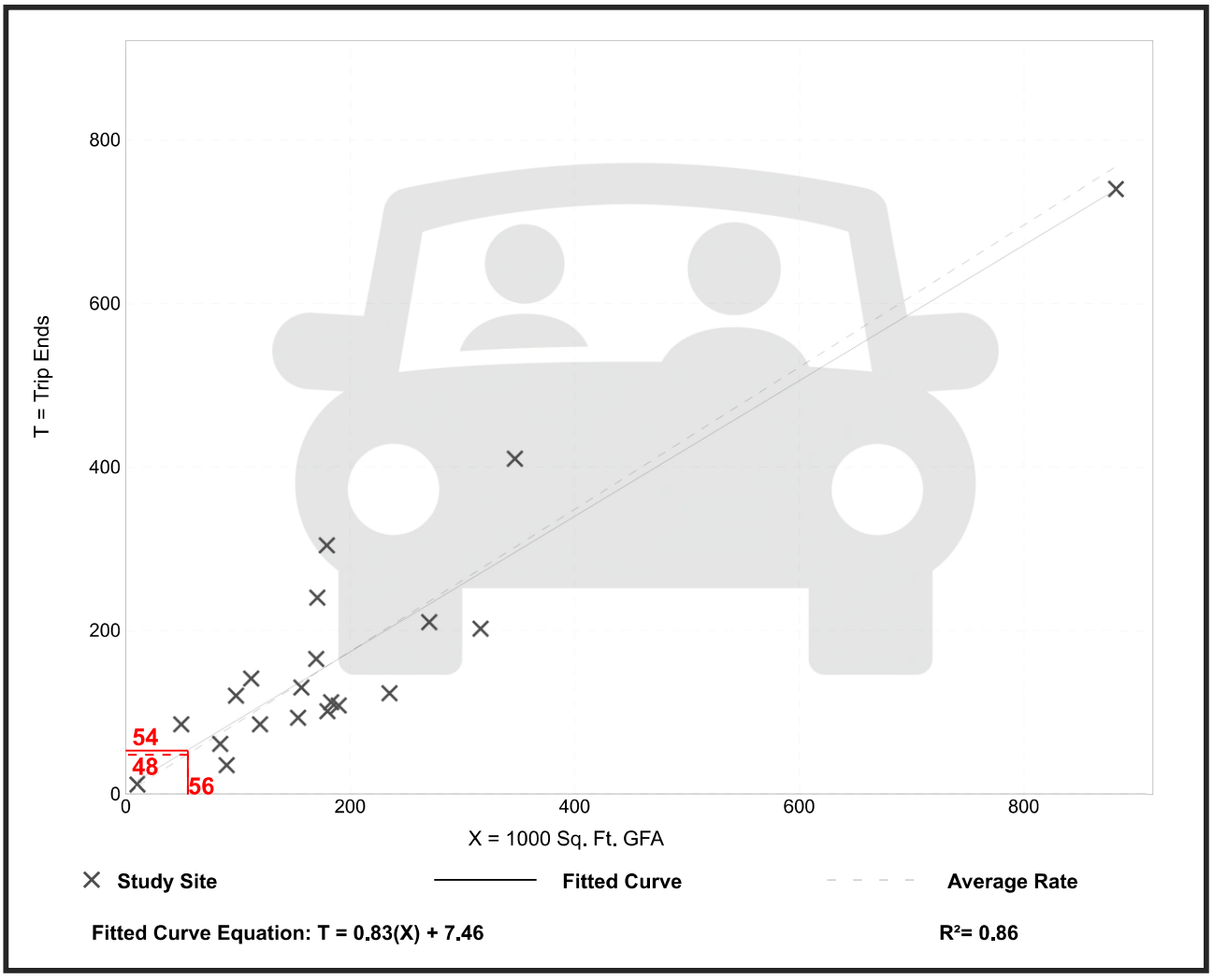
General Office Building
(710)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **Dense Multi-Use Urban**
Number of Studies: 20
Avg. 1000 Sq. Ft. GFA: 200
Directional Distribution: 16% entering, 84% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.87	0.39 - 1.70	0.33

Data Plot and Equation



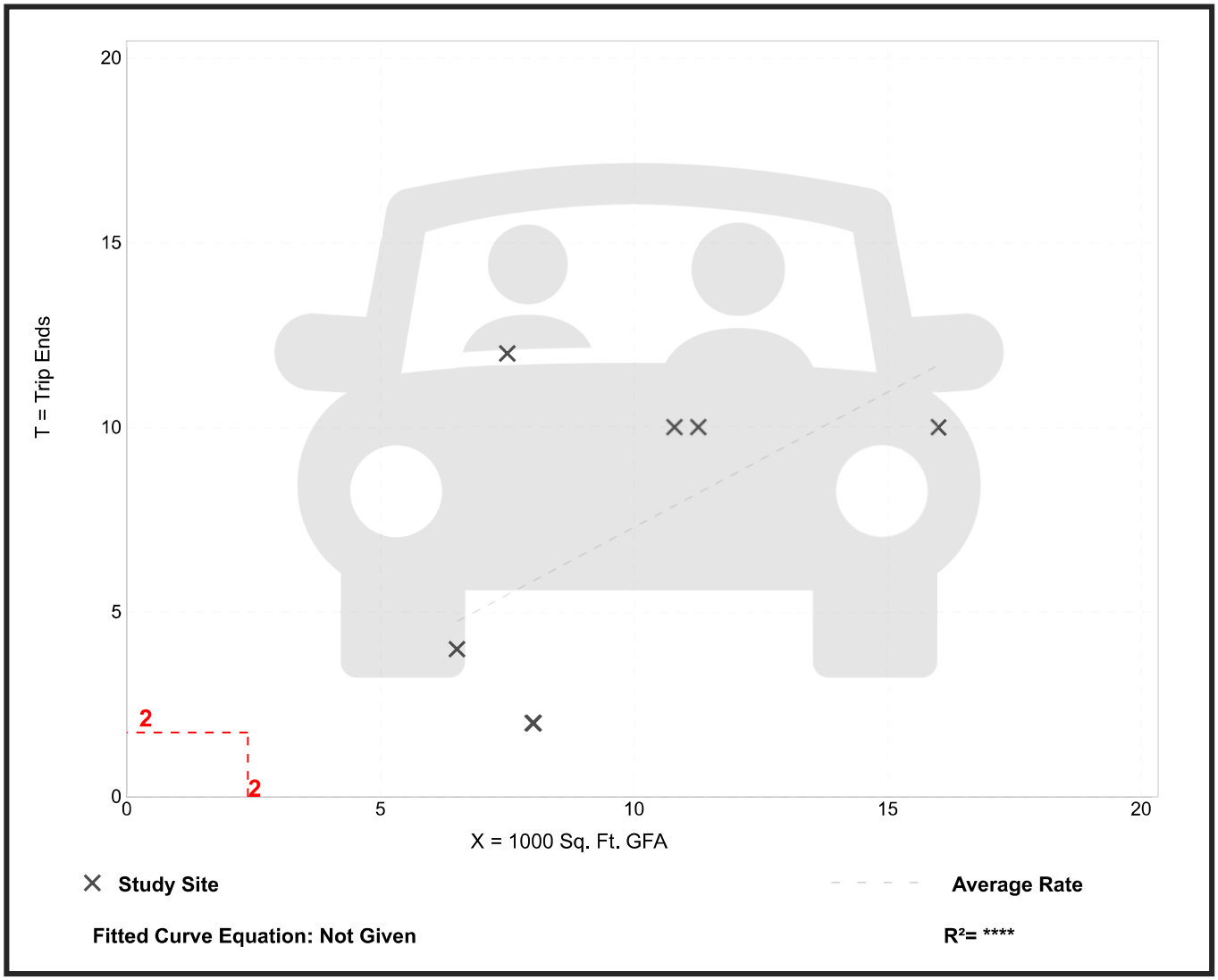
Fine Dining Restaurant
(931)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 7
Avg. 1000 Sq. Ft. GFA: 10
Directional Distribution: Not Available

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.73	0.25 - 1.60	0.42

Data Plot and Equation



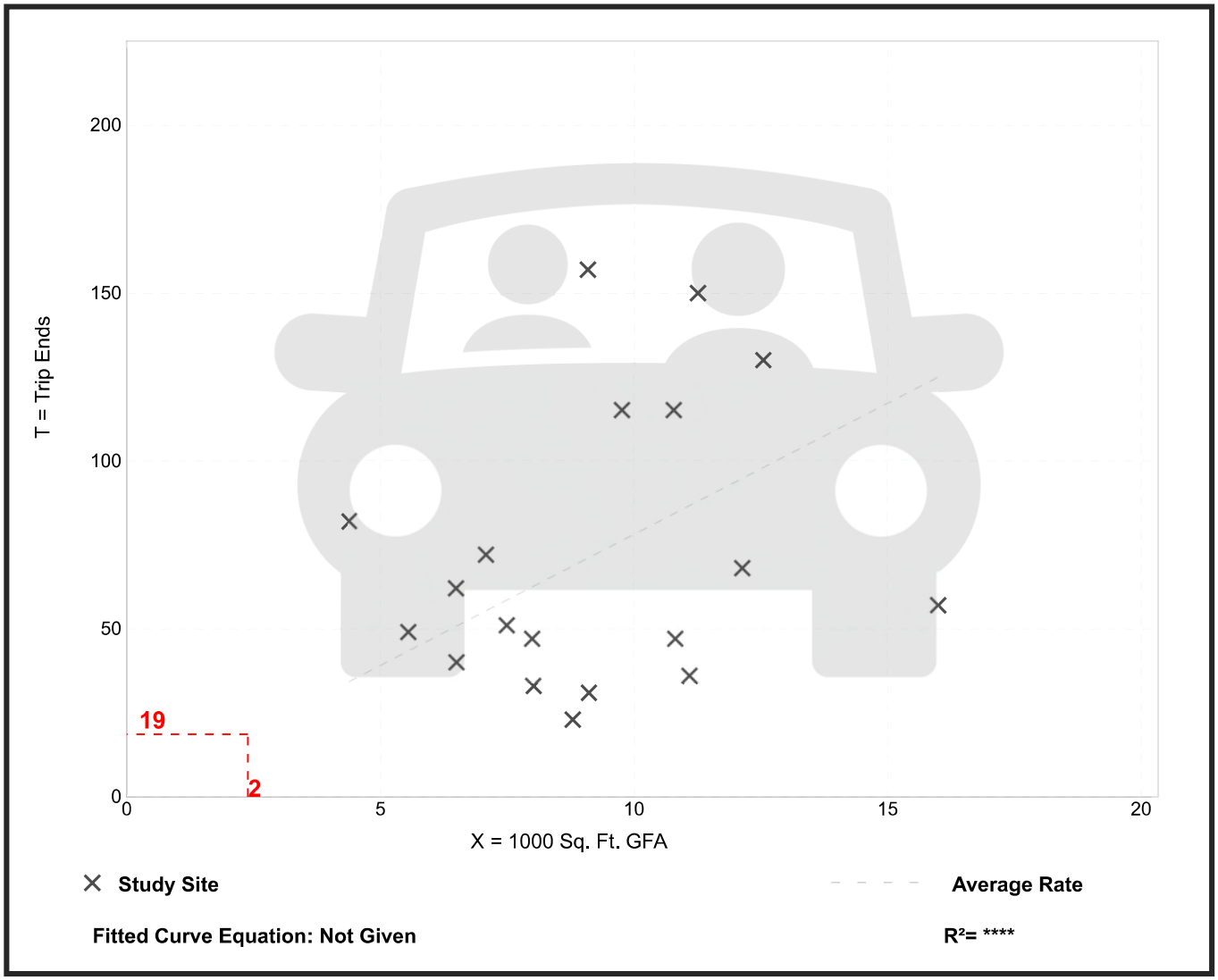
Fine Dining Restaurant
(931)

Vehicle Trip Ends vs:	**1000 Sq. Ft. GFA**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	19
Avg. 1000 Sq. Ft. GFA:	9
Directional Distribution:	67% entering, 33% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
7.80	2.62 - 18.68	4.49

Data Plot and Equation



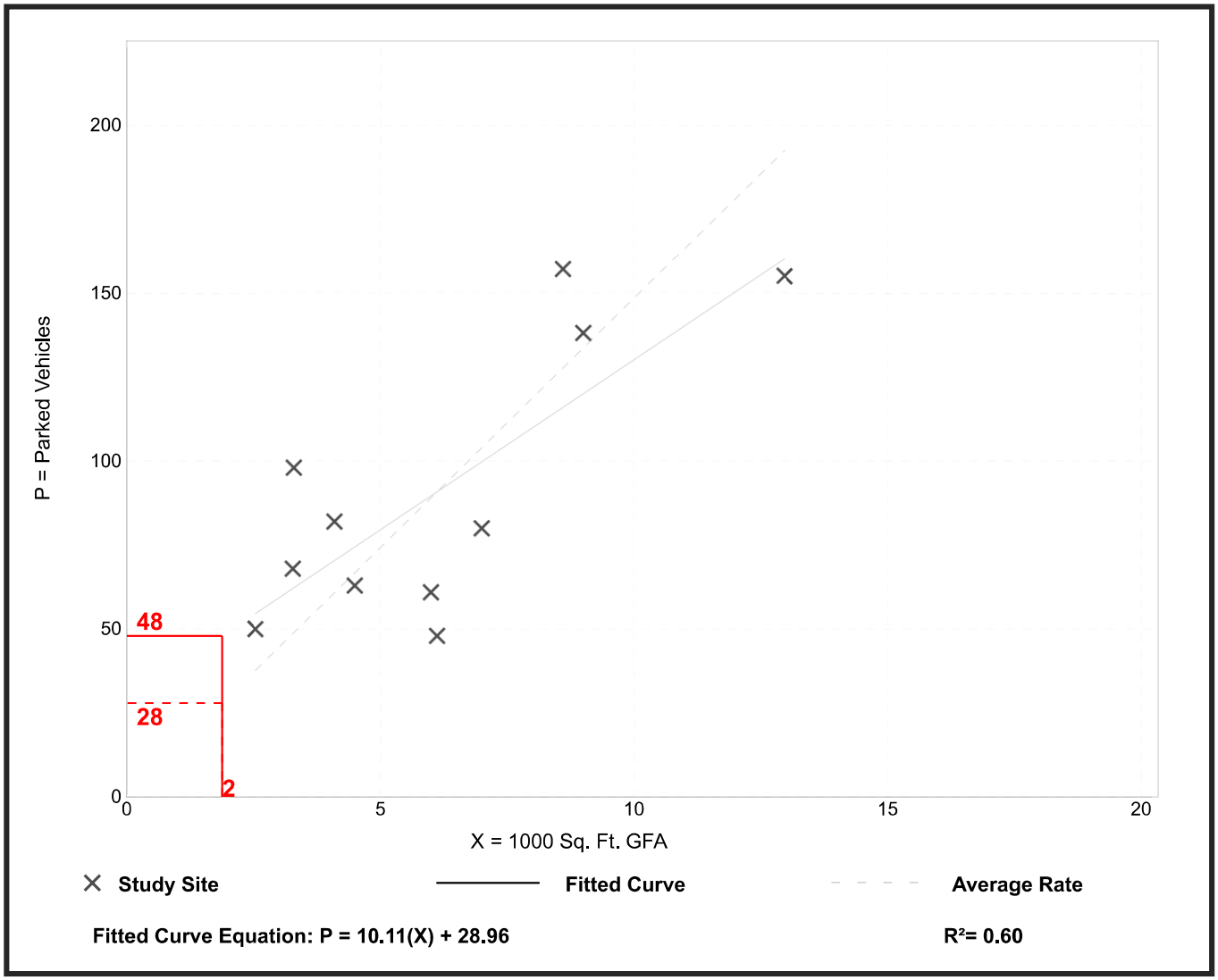
Quality Restaurant
(931)

Peak Period Parking Demand vs:	**1000 Sq. Ft. GFA**
On a:	**Friday**
Setting/Location:	**General Urban/Suburban**
Peak Period of Parking Demand:	**7:00 - 9:00 p.m.**
Number of Studies:	11
Avg. 1000 Sq. Ft. GFA:	6.1

Peak Period Parking Demand per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
14.84	7.84 - 29.70	11.93 / 22.52	***	5.32 (36%)

Data Plot and Equation



Fitted Curve Equation: P = 10.11(X) + 28.96

R^2= 0.60

Quality Restaurant
(931)

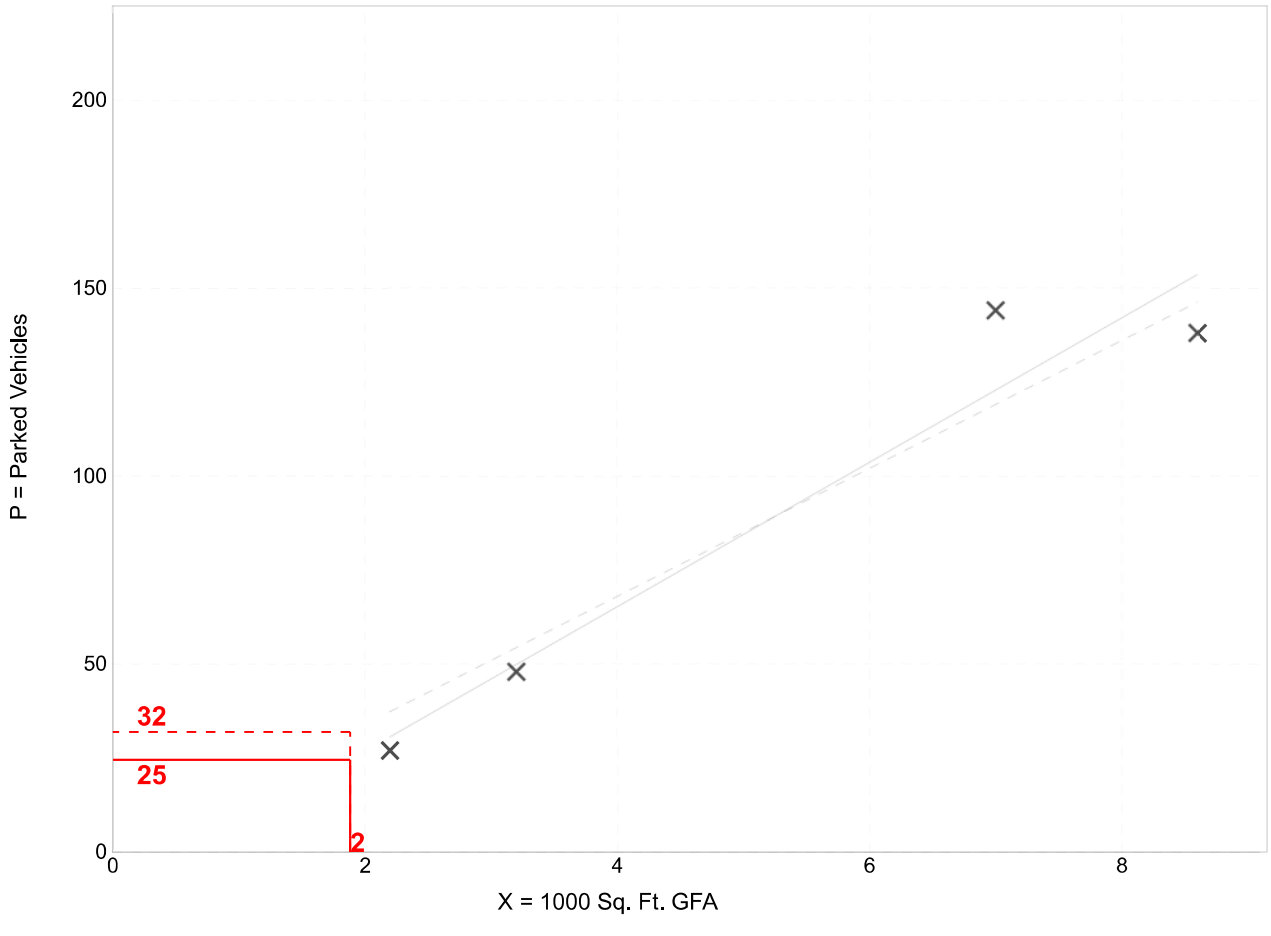
Peak Period Parking Demand vs:	**1000 Sq. Ft. GFA**
On a:	**Saturday**
Setting/Location:	**General Urban/Suburban**
Peak Period of Parking Demand:	**7:00 - 8:00 p.m.**
Number of Studies:	4
Avg. 1000 Sq. Ft. GFA:	5.2

Peak Period Parking Demand per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
17.00	12.30 - 20.57	14.05 / 20.57	***	3.17 (19%)

Data Plot and Equation

Caution – Small Sample Size



Fitted Curve Equation: P = 19.19(X) - 11.51

R^2= 0.94

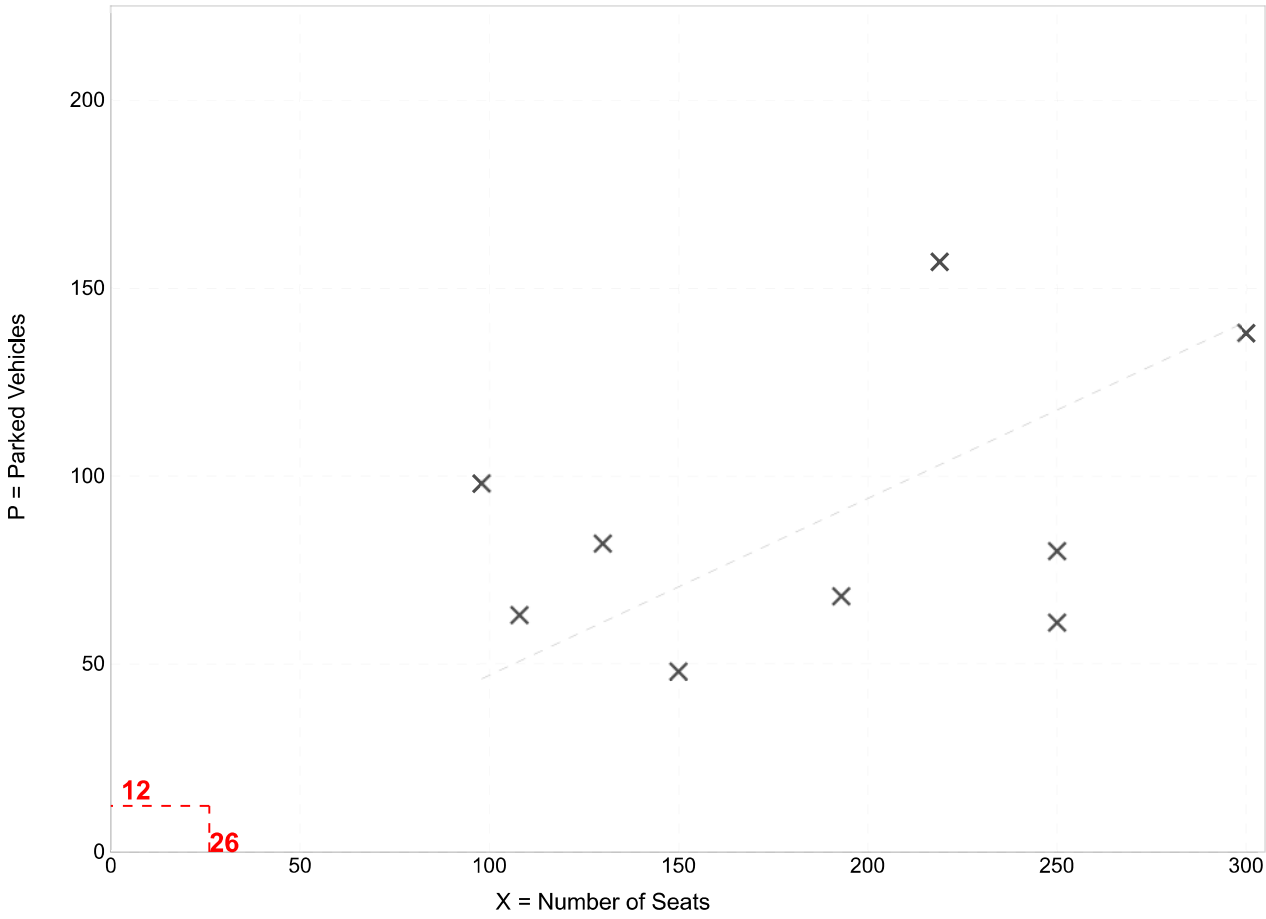
Quality Restaurant
(931)

Peak Period Parking Demand vs:	**Seats**
On a:	**Friday**
Setting/Location:	**General Urban/Suburban**
Peak Period of Parking Demand:	**7:00 - 9:00 p.m.**
Number of Studies:	9
Avg. Num. of Seats:	189

Peak Period Parking Demand per Seat

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
0.47	0.24 - 1.00	0.33 / 0.86	***	0.22 (47%)

Data Plot and Equation



Fitted Curve Equation: ***

R^2= ***

Table 6
PARKING RATIOS OF APARTMENT DEVELOPMENTS (NEAR PUBLIC TRANSIT)

Development	Location	Units	Parking	Parking Ratio
River 595	Des Plaines	60	104	1.73
Kingston Pointe	Des Plaines	144	228	1.58
Walker & Parker	Clarendon Hills	42	42	1.00
Forest & Gilbert	Downers Grove	89	102	1.15
Adriatic Grove	Downers Grove	48	64	1.33
Residences at the Grove	Downers Grove	294	345	1.17
100 North Addison	Elmhurst	165	199	1.21
1717 Ridge	Evanston	175	205	1.17
AMLI Evanston	Evanston	214	312	1.46
Central Station	Evanston	80	80	1.00
E2	Evanston	356	371	1.04
The Reserve at Evanston	Evanston	195	219	1.12
Midtown Square	Glenview	138	160	1.16
The Reserve at Glenview	Glenview	239	333	1.39
Uptown La Grange	La Grange	254	336	1.32
Ninety7Fifty on the Park	Orland Park	295	300	1.02
Wheaton 121	Wheaton	306	400	1.31
The Residences of Wilmette	Wilmette	75	117	1.56
	Average	**185**	**224**	**1.26**

Arlington 425 Development
Table 6 Parking Data Analysis

	Project	Location	Unit Mix				Total		Beds per Unit	Spaces Provided	Spaces per Unit	Spaces per Bedroom
			Studio	1-bed	2-bed	3-bed	Units	Bedrooms				
1	ReNew Five Ninety Five	Des Plaines	Removed because they were developed as condominiums and then converted to rentals									
2	Kingston Pointe	Des Plaines										
3	Walker&Parker	Clarendon Hills	0	17	25	0	42	67	1.60	42	1.00	0.63
4	Forest & Gilbert	Downers Grove	0	58	31	0	89	120	1.35	102	1.15	0.85
5	Adriatic Cove	Downers Grove	Data on this project not found									
6	Residences at the Grove	Downers Grove	21	144	129	0	294	423	1.44	345	1.17	0.82
7	100 North Addison	Elmhurst	0	108	50	6	164	226	1.38	199	1.21	0.88
8	1717 Ridge	Evanston	14	134	42	14	204	274	1.34	205	1.00	0.75
9	AMLI Evanston	Evanston	5	153	44	12	214	282	1.32	312	1.46	1.11
10	Central Station	Evanston	9	43	24	4	80	112	1.40	80	1.00	0.71
11	E2	Evanston	48	204	81	23	356	483	1.36	371	1.04	0.77
12	Reserve at Evanston	Evanston	7	103	77	8	195	288	1.48	219	1.12	0.76
13	Midtown Square	Glenview	0	99	39	0	138	177	1.28	160	1.16	0.90
14	Reserve at Glenview	Glenview	6	121	76	36	239	387	1.62	333	1.39	0.86
15	Uptown La Grange	La Grange	9	151	69	25	254	373	1.47	336	1.32	0.90
16	Ninety7Fifty on the Park	Orland Park	0	177	118	0	295	413	1.40	300	1.02	0.73
17	Wheaton 121	Wheaton	5	217	80	4	306	394	1.29	400	1.31	1.02
18	Residences of Wilmette	Wilmette	4	33	32	6	75	119	1.59	117	1.56	0.98
		Totals	**128**	**1762**	**917**	**138**	**2945**	**4138**	**1.41**	**3521**	**1.20**	**0.85**
		Unit Mix %	**4%**	**60%**	**31%**	**5%**	**100%**					

Arlington Heights Vehicle Ownership

Residential vehicle ownership data was obtained from the US Census - American Community Survey (2017 to 2023) on for rental units within the Village of Arlington Heights. Please note that this data set includes all rental units ranging from senior housing, apartment, and rental condominiums to single-family rental homes, so it is conservatively high. **Table A** summarizes the data and results for the Village as a whole. For the bedroom counts, studio units were considered as one-bedroom units. For all rental units in the village, the average vehicle ownership is 0.76 vehicles per bedroom. Please note that only 44.5% of the units were studio or one-bedroom units. The proposed building has 162 bedrooms which would need 123 parking spaces based on the 0.76 veh/bedroom ratio. The Census data was also reviewed for the three main census tracts that make up Downtown Arlington Heights (8033,8034, and 8035). **Table B** summarizes the data like Table 8.

Table A
Vehicle Ownership at
Rental Units in Arlington Heights (Village Wide)

Vehicles Available	Rental Units	Total Vehicles Available	Bedrooms Per Unit	Rental Units	Unit %	Total Bedrooms
0	845	0	0	415	5.0%	415
1	4,464	4,464	1	3,297	39.5%	3,297
2	2,586	5,172	2	3,316	39.7%	6,632
3	423	1,269	3	1,083	13.0%	3,249
4	10	40	4	187	2.2%	748
5	19	95	5	49	0.6%	245
Totals	**8,347**	**11,040 (1.32 veh/unit)**		**8,347**	**100%**	**14,586 (1.74 beds/unit)**
					Vehicle Ownership	**0.76veh/bedroom**

Table B
Vehicle Ownership at
Rental Units in Arlington Heights (Downtown)[1]

Vehicles Available	Rental Units	Total Vehicles Available	Bedrooms Per Unit	Rental Units	Unit %	Total Bedrooms
0	411	0	0	165	8.0%	165
1	932	932	1	880	42.9%	880
2	632	1,264	2	712	34.7%	1,424
3	77	231	3	223	10.9%	669
4	0	0	4	72	3.5%	288
5	0	0	5	0	0%	0
Totals	**2,052**	**2,427 (1.18 veh/unit)**		**2,052**	**100%**	**3,426 (1.67 beds/unit)**
					Vehicle Ownership	**0.71veh/bedroom**

(1) Census Tracts 8033, 8034, and 8035

Rental units in the Downtown area have a slightly lower vehicle ownership than Village wide (0.76 vs 0.71 vehicles per unit). The proposed building has 162 bedrooms which would need 115 parking spaces based on the 0.71 veh/bedroom ratio.

Downtown Apartment Buildings
Detailed Parking Data

	Project	Location	Distance to Metra Station (miles)	Unit Mix						Beds per Unit	Occupancy Rate	Occupied		Vehicles	Vehicles per Unit	Spaces per Bedroom
				Studio	1-bed	2-bed	3-bed	Units	Bedrooms			Units	Bedrooms			
1	Hancock Square	Arlington Hts.	0.09	30	232	147	0	409	556	1.359	96.1%	393	534	483	1.229	0.904
2	10 North Main	Mount Prospect	0.22	14	51	29	3	97	132	1.361	96.0%			129	1.330	0.977
3	20 West	Mount Prospect	0.10	9	41	20	1	71	93	1.310	90.1%	64	84	67	1.047	0.800
4	Maple Street Lofts	Mount Prospect	0.15	38	124	30	0	192	222	1.156	94.8%	182	210	203	1.115	0.965
5	One Arlington	Arlington Hts.	0.85	51	113	50	0	214	264	1.234	97.2%	208	257	272	1.308	1.060
6	One Wheeling Town Center	Wheeling	0.05	11	129	152	9	301	471	1.565	90.4%	272	426	361	1.327	0.848
7	Residences at Payton Place	Arlington Hts.	0.84	34	115	87	27	263	404	1.536	63.9%			401	1.525	0.993
8	Uptown 500	Wheeling	0.26	83	102	134	0	319	453	1.420	88.7%	283	402	371	1.311	0.923
		Totals		**270**	**907**	**649**	**40**	**1866**	**2595**	**1.391**	**93.1%**	**1402**	**1913**	**2287**	**1.298**	**0.934**
			Unit Mix	**14%**	**49%**	**35%**	**2%**	**100%**								

Note: For sites 2 and 7, occupancy data was not applicable with only parking supply data available

Parking Survey
Spaces Leased
Spaces Provided

HCS Two-Way Stop-Control Report

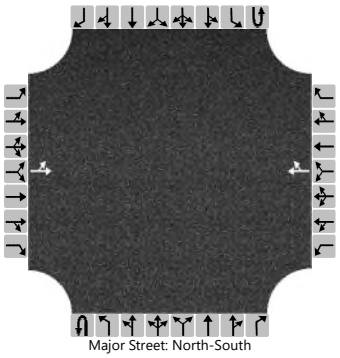
General Information

Analyst	AG
Agency/Co.	Eriksson
Date Performed	7/11/2023
Analysis Year	2028
Time Analyzed	AM Peak
Intersection Orientation	North-South
Project Description	Eastman

Site Information

Intersection	Eastman and Site Entrance
Jurisdiction	Arlington Heights
East/West Street	Eastman Street
North/South Street	Site Entrance
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	0	0	0	0	0	0
Configuration		LT						TR								
Volume (veh/h)		10	34				32	3								
Percent Heavy Vehicles (%)		0	0				0	0								
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		6.4	6.5				6.5	7.1								
Critical Headway (sec)		6.40	6.50				6.50	7.10								
Base Follow-Up Headway (sec)		3.8	4.0				4.0	3.9								
Follow-Up Headway (sec)		3.80	4.00				4.00	3.90								

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		48						38								
Capacity, c (veh/h)		897						902								
v/c Ratio		0.05						0.04								
95% Queue Length, Q_{95} (veh)		0.2						0.1								
Control Delay (s/veh)		9.2						9.2								
Level of Service (LOS)		A						A								
Approach Delay (s/veh)	9.2				9.2											
Approach LOS	A				A											

HCS Two-Way Stop-Control Report

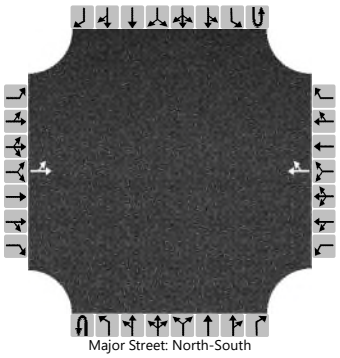
General Information

Analyst	AG
Agency/Co.	Eriksson
Date Performed	7/11/2023
Analysis Year	2028
Time Analyzed	PM Peak
Intersection Orientation	North-South
Project Description	Eastman

Site Information

Intersection	Eastman and Site Entrance
Jurisdiction	Arlington Heights
East/West Street	Eastman Street
North/South Street	Site Entrance
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	0	0	0	0	0	0
Configuration		LT						TR								
Volume (veh/h)		33	36				32	11								
Percent Heavy Vehicles (%)		0	0				0	0								
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		6.4	6.5				6.5	7.1								
Critical Headway (sec)		6.40	6.50				6.50	7.10								
Base Follow-Up Headway (sec)		3.8	4.0				4.0	3.9								
Follow-Up Headway (sec)		3.80	4.00				4.00	3.90								

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		75						47								
Capacity, c (veh/h)		890						906								
v/c Ratio		0.08						0.05								
95% Queue Length, Q_{95} (veh)		0.3						0.2								
Control Delay (s/veh)		9.4						9.2								
Level of Service (LOS)		A						A								
Approach Delay (s/veh)	9.4				9.2											
Approach LOS	A				A											

HCS Two-Way Stop-Control Report

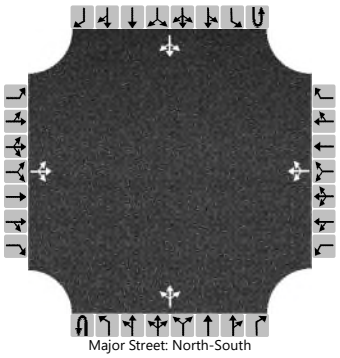
General Information

Analyst	AG
Agency/Co.	Eriksson
Date Performed	7/11/2023
Analysis Year	2022
Time Analyzed	AM Peak
Intersection Orientation	North-South
Project Description	Eastman

Site Information

Intersection	Highland and Eastman
Jurisdiction	Arlington Heights
East/West Street	Eastman Street
North/South Street	Highland Avenue
Peak Hour Factor	0.57
Analysis Time Period (hrs)	0.25

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		1	2	2		25	6	1		6	7	7		0	1	0
Percent Heavy Vehicles (%)		1	1	1		1	1	1		1				1		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.11	6.51	6.21		7.11	6.51	6.21		4.11				4.11		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.51	4.01	3.31		3.51	4.01	3.31		2.21				2.21		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			9				56			11				0		
Capacity, c (veh/h)			945				929			1627				1597		
v/c Ratio			0.01				0.06			0.01				0.00		
95% Queue Length, Q_{95} (veh)			0.0				0.2			0.0				0.0		
Control Delay (s/veh)			8.8				9.1			7.2	0.0	0.0		7.3	0.0	0.0
Level of Service (LOS)			A				A			A	A	A		A	A	A
Approach Delay (s/veh)	8.8				9.1				2.2				0.0			
Approach LOS	A				A				A				A			

HCS Two-Way Stop-Control Report

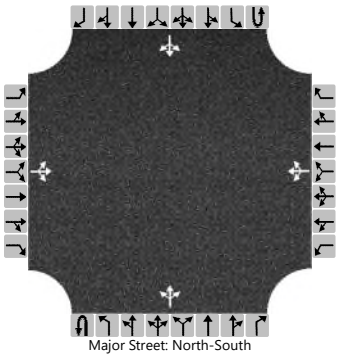
General Information

Analyst	AG
Agency/Co.	Eriksson
Date Performed	7/11/2023
Analysis Year	2028
Time Analyzed	AM Peak
Intersection Orientation	North-South
Project Description	Eastman

Site Information

Intersection	Highland and Eastman
Jurisdiction	Arlington Heights
East/West Street	Eastman Street
North/South Street	Highland Avenue
Peak Hour Factor	0.57
Analysis Time Period (hrs)	0.25

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		0	2	2		25	7	0		6	0	25		17	23	0
Percent Heavy Vehicles (%)		1	1	1		1	1	1		1				1		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.11	6.51	6.21		7.11	6.51	6.21		4.11				4.11		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.51	4.01	3.31		3.51	4.01	3.31		2.21				2.21		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			7				56			11				30		
Capacity, c (veh/h)			842				781			1576				1571		
v/c Ratio			0.01				0.07			0.01				0.02		
95% Queue Length, Q_{95} (veh)			0.0				0.2			0.0				0.1		
Control Delay (s/veh)			9.3				10.0			7.3	0.1	0.1		7.3	0.1	0.1
Level of Service (LOS)			A				A			A	A	A		A	A	A
Approach Delay (s/veh)		9.3				10.0				1.5				3.2		
Approach LOS		A				A				A				A		

HCS Two-Way Stop-Control Report

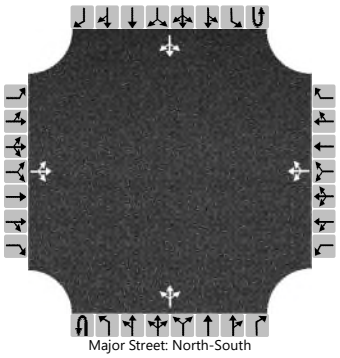
General Information

Analyst	AG
Agency/Co.	Eriksson
Date Performed	7/11/2023
Analysis Year	2022
Time Analyzed	PM Peak
Intersection Orientation	North-South
Project Description	Eastman

Site Information

Intersection	Highland and Eastman
Jurisdiction	Arlington Heights
East/West Street	Eastman Street
North/South Street	Highland Avenue
Peak Hour Factor	0.71
Analysis Time Period (hrs)	0.25

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		0	9	6		24	5	1		6	5	7		1	2	0
Percent Heavy Vehicles (%)		1	1	1		1	1	1		1				1		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.11	6.51	6.21		7.11	6.51	6.21		4.11				4.11		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.51	4.01	3.31		3.51	4.01	3.31		2.21				2.21		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			21				42			8				1		
Capacity, c (veh/h)			930				922			1626				1607		
v/c Ratio			0.02				0.05			0.01				0.00		
95% Queue Length, Q_{95} (veh)			0.1				0.1			0.0				0.0		
Control Delay (s/veh)			9.0				9.1			7.2	0.0	0.0		7.2	0.0	0.0
Level of Service (LOS)			A				A			A	A	A		A	A	A
Approach Delay (s/veh)	9.0				9.1				2.4				2.4			
Approach LOS	A				A				A				A			

HCS Two-Way Stop-Control Report

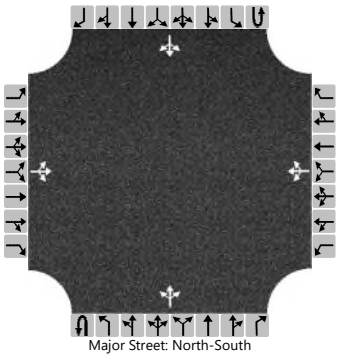
General Information

Analyst	AG
Agency/Co.	Eriksson
Date Performed	7/11/2023
Analysis Year	2028
Time Analyzed	PM Peak
Intersection Orientation	North-South
Project Description	Eastman

Site Information

Intersection	Highland and Eastman
Jurisdiction	Arlington Heights
East/West Street	Eastman Street
North/South Street	Highland Avenue
Peak Hour Factor	0.71
Analysis Time Period (hrs)	0.25

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		0	10	6		26	6	0		6	0	46		13	18	0
Percent Heavy Vehicles (%)		1	1	1		1	1	1		1				1		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.11	6.51	6.21		7.11	6.51	6.21		4.11				4.11		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.51	4.01	3.31		3.51	4.01	3.31		2.21				2.21		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			23				45			8				18		
Capacity, c (veh/h)			830				807			1596				1544		
v/c Ratio			0.03				0.06			0.01				0.01		
95% Queue Length, Q_{95} (veh)			0.1				0.2			0.0				0.0		
Control Delay (s/veh)			9.5				9.7			7.3	0.0	0.0		7.4	0.1	0.1
Level of Service (LOS)			A				A			A	A	A		A	A	A
Approach Delay (s/veh)	9.5				9.7				0.9				3.1			
Approach LOS	A				A				A				A			

HCS Two-Way Stop-Control Report

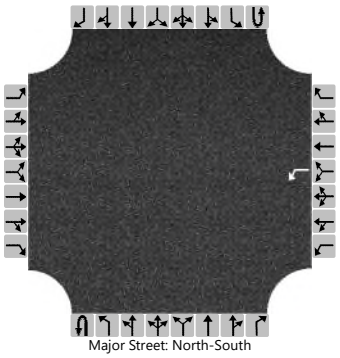
General Information

Analyst	AG
Agency/Co.	Eriksson
Date Performed	7/11/2023
Analysis Year	2028
Time Analyzed	AM Peak
Intersection Orientation	North-South
Project Description	Eastman

Site Information

Intersection	Highland and Site Exit
Jurisdiction	Arlington Heights
East/West Street	Highland Avenue
North/South Street	Site Exit
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		1	0	0	0	0	0	0	0	0	0	0
Configuration						L										
Volume (veh/h)						39										
Percent Heavy Vehicles (%)						1										
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						6.4										
Critical Headway (sec)						5.72										
Base Follow-Up Headway (sec)						3.8										
Follow-Up Headway (sec)						3.81										

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						42										
Capacity, c (veh/h)						945										
v/c Ratio						0.04										
95% Queue Length, Q_{95} (veh)						0.1										
Control Delay (s/veh)						9.0										
Level of Service (LOS)						A										
Approach Delay (s/veh)						9.0										
Approach LOS						A										

HCS Two-Way Stop-Control Report

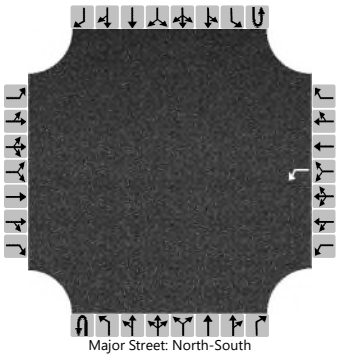
General Information

Analyst	AG
Agency/Co.	Eriksson
Date Performed	7/11/2023
Analysis Year	2028
Time Analyzed	PM Peak
Intersection Orientation	North-South
Project Description	Eastman

Site Information

Intersection	Highland and Site Exit
Jurisdiction	Arlington Heights
East/West Street	Highland Avenue
North/South Street	Site Exit
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		1	0	0	0	0	0	0	0	0	0	0
Configuration						L										
Volume (veh/h)						28										
Percent Heavy Vehicles (%)						1										
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						6.4										
Critical Headway (sec)						5.72										
Base Follow-Up Headway (sec)						3.8										
Follow-Up Headway (sec)						3.81										

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						30										
Capacity, c (veh/h)						945										
v/c Ratio						0.03										
95% Queue Length, Q_{95} (veh)						0.1										
Control Delay (s/veh)						8.9										
Level of Service (LOS)						A										
Approach Delay (s/veh)						8.9										
Approach LOS						A										

HCS Two-Way Stop-Control Report

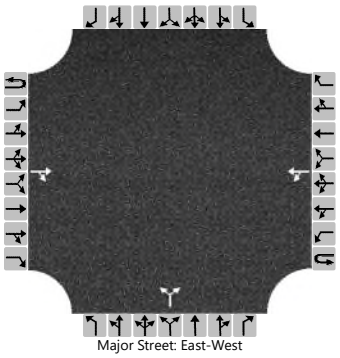
General Information

Analyst	AG
Agency/Co.	Eriksson
Date Performed	7/11/2023
Analysis Year	2022
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	Eastman

Site Information

Intersection	Highland and St James
Jurisdiction	Arlington Heights
East/West Street	Highland Avenue
North/South Street	St James Street
Peak Hour Factor	0.46
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	0	0
Configuration				TR		LT					LR					
Volume (veh/h)			11	1		0	19			2		7				
Percent Heavy Vehicles (%)						0				0		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.10				6.40		6.23				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.20				3.50		3.33				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						0					20					
Capacity, c (veh/h)						1601					1023					
v/c Ratio						0.00					0.02					
95% Queue Length, Q_{95} (veh)						0.0					0.1					
Control Delay (s/veh)						7.2	0.0				8.6					
Level of Service (LOS)						A	A				A					
Approach Delay (s/veh)					0.0				8.6							
Approach LOS					A				A							

HCS Two-Way Stop-Control Report

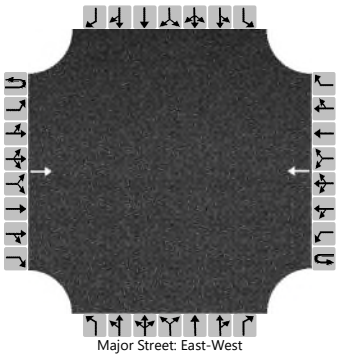
General Information

Analyst	AG
Agency/Co.	Eriksson
Date Performed	7/11/2023
Analysis Year	2028
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	Eastman

Site Information

Intersection	Highland and St James
Jurisdiction	Arlington Heights
East/West Street	Highland Avenue
North/South Street	St James Street
Peak Hour Factor	0.46
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration			T				T									
Volume (veh/h)			12				21									
Percent Heavy Vehicles (%)																
Proportion Time Blocked																
Percent Grade (%)																
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)																
Capacity, c (veh/h)																
v/c Ratio																
95% Queue Length, Q_{95} (veh)																
Control Delay (s/veh)																
Level of Service (LOS)																
Approach Delay (s/veh)																
Approach LOS																

HCS Two-Way Stop-Control Report

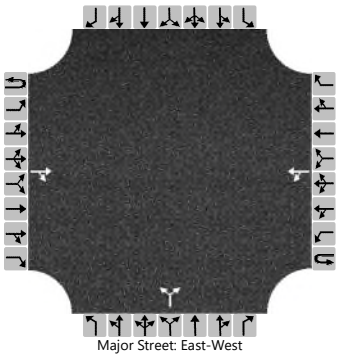
General Information

Analyst	AG
Agency/Co.	Eriksson
Date Performed	7/11/2023
Analysis Year	2022
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Eastman

Site Information

Intersection	Highland and St James
Jurisdiction	Arlington Heights
East/West Street	Highland Avenue
North/South Street	St James Street
Peak Hour Factor	0.70
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	0	0
Configuration				TR		LT					LR					
Volume (veh/h)			16	3		0	25			0		6				
Percent Heavy Vehicles (%)						0				0		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage																

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.10				6.40		6.23				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.20				3.50		3.33				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						0					9					
Capacity, c (veh/h)						1600					1048					
v/c Ratio						0.00					0.01					
95% Queue Length, Q_{95} (veh)						0.0					0.0					
Control Delay (s/veh)						7.3	0.0				8.5					
Level of Service (LOS)						A	A				A					
Approach Delay (s/veh)						0.0				8.5						
Approach LOS						A				A						

HCS Two-Way Stop-Control Report

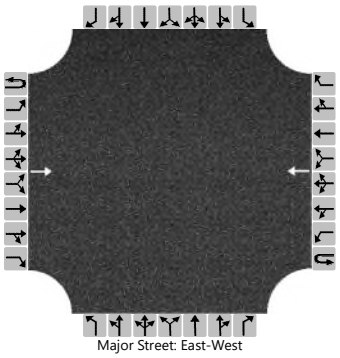
General Information

Analyst	AG
Agency/Co.	Eriksson
Date Performed	7/11/2023
Analysis Year	2028
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Eastman

Site Information

Intersection	Highland and St James
Jurisdiction	Arlington Heights
East/West Street	Highland Avenue
North/South Street	St James Street
Peak Hour Factor	0.70
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration			T				T									
Volume (veh/h)			19				25									
Percent Heavy Vehicles (%)																
Proportion Time Blocked																
Percent Grade (%)																
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)																
Capacity, c (veh/h)																
v/c Ratio																
95% Queue Length, Q_{95} (veh)																
Control Delay (s/veh)																
Level of Service (LOS)																
Approach Delay (s/veh)																
Approach LOS																

HCS Two-Way Stop-Control Report

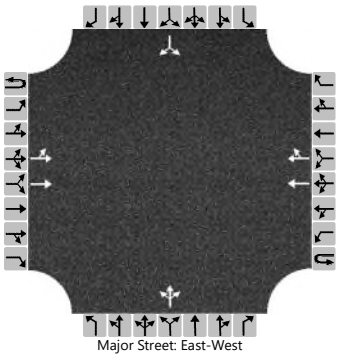
General Information

Analyst	AG
Agency/Co.	Eriksson
Date Performed	7/11/2023
Analysis Year	2022
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	Eastman

Site Information

Intersection	Northwest Hwy and Highland
Jurisdiction	IDOT
East/West Street	Northwest Highway
North/South Street	Highland Avenue
Peak Hour Factor	0.83
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	0	2	0		0	1	0		0	1	0
Configuration		LT	T				T	TR			LTR				LR	
Volume (veh/h)		15	620				594	6		0	0	0		3		25
Percent Heavy Vehicles (%)		3								3	3	3		3		3
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1								7.5	6.5	6.9		7.5		6.9
Critical Headway (sec)		4.16								7.56	6.56	6.96		7.56		6.96
Base Follow-Up Headway (sec)		2.2								3.5	4.0	3.3		3.5		3.3
Follow-Up Headway (sec)		2.23								3.53	4.03	3.33		3.53		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		18									0				34	
Capacity, c (veh/h)		854									0				455	
v/c Ratio		0.02													0.07	
95% Queue Length, Q_{95} (veh)		0.1													0.2	
Control Delay (s/veh)		9.3	0.2												13.6	
Level of Service (LOS)		A	A												B	
Approach Delay (s/veh)	0.5												13.6			
Approach LOS	A												B			

HCS Two-Way Stop-Control Report

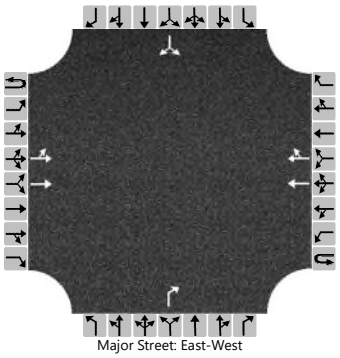
General Information

Analyst	AG
Agency/Co.	Eriksson
Date Performed	7/11/2023
Analysis Year	2028
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	Eastman

Site Information

Intersection	Northwest Hwy and Highland
Jurisdiction	IDOT
East/West Street	Northwest Highway
North/South Street	Highland Avenue
Peak Hour Factor	0.83
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	0	2	0		0	0	1		0	1	0
Configuration		LT	T				T	TR				R			LR	
Volume (veh/h)		20	625				598	11				0		11		39
Percent Heavy Vehicles (%)		3										3		3		3
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized									No							
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1										6.9		7.5		6.9
Critical Headway (sec)		4.16										6.96		7.56		6.96
Base Follow-Up Headway (sec)		2.2										3.3		3.5		3.3
Follow-Up Headway (sec)		2.23										3.33		3.53		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		24										0			60	
Capacity, c (veh/h)		860										618			364	
v/c Ratio		0.03										0.00			0.17	
95% Queue Length, Q_{95} (veh)		0.1										0.0			0.6	
Control Delay (s/veh)		9.3	0.3									10.8			16.8	
Level of Service (LOS)		A	A									B			C	
Approach Delay (s/veh)	0.6												16.8			
Approach LOS	A												C			

HCS Two-Way Stop-Control Report

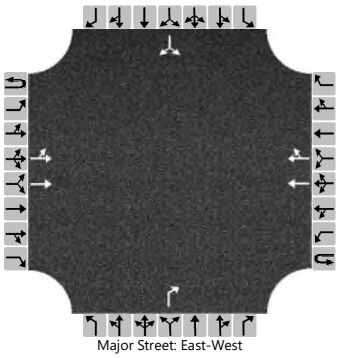
General Information

Analyst	AG
Agency/Co.	Eriksson
Date Performed	7/11/2023
Analysis Year	2022
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Eastman

Site Information

Intersection	Northwest Hwy and Highland
Jurisdiction	IDOT
East/West Street	Northwest Highway
North/South Street	Highland Avenue
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	0	2	0		0	0	1		0	1	0
Configuration		LT	T				T	TR				R			LR	
Volume (veh/h)		6	690				778	13				0		4		28
Percent Heavy Vehicles (%)		3										3		3		3
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized									No							
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1										6.9		7.5		6.9
Critical Headway (sec)		4.16										6.96		7.56		6.96
Base Follow-Up Headway (sec)		2.2										3.3		3.5		3.3
Follow-Up Headway (sec)		2.23										3.33		3.53		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		7										0			35	
Capacity, c (veh/h)		771										620			399	
v/c Ratio		0.01										0.00			0.09	
95% Queue Length, Q_{95} (veh)		0.0										0.0			0.3	
Control Delay (s/veh)		9.7	0.1									10.8			14.9	
Level of Service (LOS)		A	A									B			B	
Approach Delay (s/veh)	0.2												14.9			
Approach LOS	A												B			

HCS Two-Way Stop-Control Report

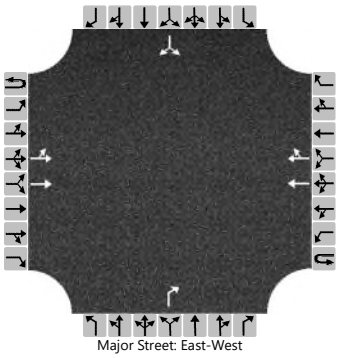
General Information

Analyst	AG
Agency/Co.	Eriksson
Date Performed	7/11/2023
Analysis Year	2028
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Eastman

Site Information

Intersection	Northwest Hwy and Highland
Jurisdiction	IDOT
East/West Street	Northwest Highway
North/South Street	Highland Avenue
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	0	2	0		0	0	1		0	1	0
Configuration		LT	T				T	TR				R			LR	
Volume (veh/h)		22	695				784	30				0		10		40
Percent Heavy Vehicles (%)		3										3		3		3
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized									No							
Median Type | Storage	Undivided															

Critical and Follow-up Headways

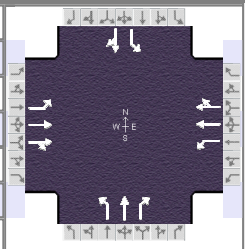
Base Critical Headway (sec)		4.1										6.9		7.5		6.9
Critical Headway (sec)		4.16										6.96		7.56		6.96
Base Follow-Up Headway (sec)		2.2										3.3		3.5		3.3
Follow-Up Headway (sec)		2.23										3.33		3.53		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		24										0			54	
Capacity, c (veh/h)		754										617			314	
v/c Ratio		0.03										0.00			0.17	
95% Queue Length, Q_{95} (veh)		0.1										0.0			0.6	
Control Delay (s/veh)		9.9	0.4									10.8			18.8	
Level of Service (LOS)		A	A									B			C	
Approach Delay (s/veh)	0.7												18.8			
Approach LOS	A												C			

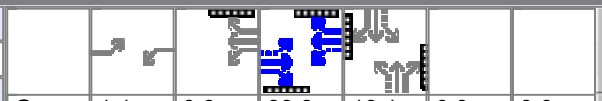
HCS Signalized Intersection Input Data

General Information				Intersection Information	
Agency	Eriksson			Duration, h	0.250
Analyst	AG	Analysis Date	7/22/2022	Area Type	Other
Jurisdiction	IDOT	Time Period	AM Peak	PHF	0.92
Urban Street	Northwest Highway	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	Vail Avenue	File Name	NW and Vail AM 2022.xus		
Project Description	Eastman				

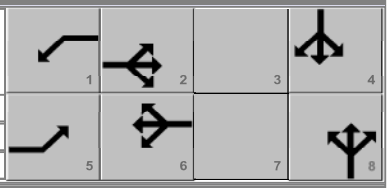


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	13	565	45	32	580	14	18	24	54	18	30	2

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	1.1	0.9	83.3	19.1	0.0	0.0
Yellow	3.5	0.0	4.5	4.5	0.0	0.0
Red	0.0	0.0	1.5	1.5	0.0	0.0



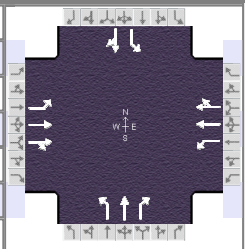
Traffic Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	13	565	45	32	580	14	18	24	54	18	30	2
Initial Queue (Q_b), veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Base Saturation Flow Rate (s_o), veh/h	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Parking (N_m), man/h		None			None			None			None	
Heavy Vehicles (P_{HV}), %	0	0		0	0		0	0	0	0	0	
Ped / Bike / RTOR, /h	5	0	0	5	0	0	11	0	0	22	0	0
Buses (N_b), buses/h	0	0	0	0	0	0	0	0	0	0	0	0
Arrival Type (*AT*)	3	3	3	3	4	4	3	3	3	3	3	3
Upstream Filtering (*I*)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Width (*W*), ft	12.0	12.0		12.0	12.0		12.0	12.0	12.0	12.0	12.0	
Turn Bay Length, ft	170	0		92	0		80	0	75	90	0	
Grade (*Pg*), %		0			0			0			0	
Speed Limit, mi/h	30	30	30	30	30	30	30	30	30	30	30	30

Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green (G_{max}) or Phase Split, s	13.2	64.8	13.2	64.8		42.0		42.0
Yellow Change Interval (*Y*), s	3.5	4.5	3.5	4.5		4.5		4.5
Red Clearance Interval (R_c), s	0.0	1.5	0.0	1.5		1.5		1.5
Minimum Green (G_{min}), s	3	15	3	15		8		8
Start-Up Lost Time (*l*t), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green (*e*), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Passage (*PT*), s	2.0	2.0	2.0	2.0		2.0		2.0
Recall Mode	Off	Max	Off	Max		Off		Off
Dual Entry	No	Yes	No	Yes		Yes		Yes
Walk (*Walk*), s		10.0		10.0		10.0		10.0
Pedestrian Clearance Time (*PC*), s		18.0		18.0		23.0		24.0

Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius	0.0	No	25.0	0.0	No	25.0	0.0	No	25.0	0.0	No	25.0
Walkway / Crosswalk Width / Length, ft	9.0	8.0	58.0	9.0	8.0	58.0	9.0	8.0	70.0	9.0	8.0	78.0
Street Width / Island / Curb, ft	0.0	0	No	0.0	0	No	0.0	0	No	0.0	0	No
Width Outside / Bike Lane / Shoulder, ft	12.0	5.0	2.0	12.0	5.0	2.0	12.0	5.0	2.0	12.0	5.0	2.0
Pedestrian Signal / Occupied Parking	No	0.50		No	0.50		No	0.50		No	0.50	

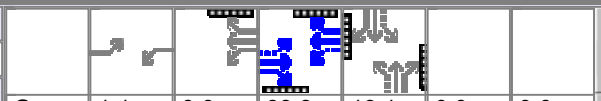
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Eriksson			Duration, h	0.250
Analyst	AG	Analysis Date	7/22/2022	Area Type	Other
Jurisdiction	IDOT	Time Period	AM Peak	PHF	0.92
Urban Street	Northwest Highway	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	Vail Avenue	File Name	NW and Vail AM 2022.xus		
Project Description	Eastman				

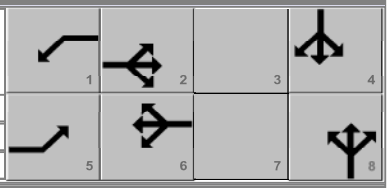


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	13	565	45	32	580	14	18	24	54	18	30	2

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	1.1	0.9	83.3	19.1	0.0	0.0
Yellow	3.5	0.0	4.5	4.5	0.0	0.0
Red	0.0	0.0	1.5	1.5	0.0	0.0



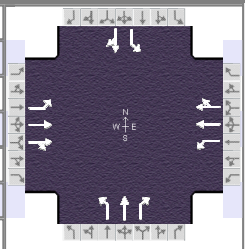
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	4.0		5.0		6.0
Phase Duration, s	4.6	89.3	5.6	90.2		25.1		25.1
Change Period, ($Y+R_c$), s	3.5	6.0	3.5	6.0		6.0		6.0
Max Allow Headway (*MAH*), s	3.2	0.0	3.2	0.0		3.3		3.3
Queue Clearance Time (g_s), s	2.3		2.7			5.9		4.9
Green Extension Time (g_e), s	0.0	0.0	0.0	0.0		0.3		0.3
Phase Call Probability	0.38		0.69			0.99		0.99
Max Out Probability	0.00		0.00			0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	14	336	327	35	324	322	20	26	59	20	35	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1810	1900	1849	1810	1900	1884	1343	1900	1577	1379	1873	
Queue Service Time (g_s), s	0.3	7.9	7.9	0.7	1.7	1.7	1.5	1.4	3.9	1.5	1.9	
Cycle Queue Clearance Time (g_c), s	0.3	7.9	7.9	0.7	1.7	1.7	3.4	1.4	3.9	2.9	1.9	
Green Ratio (*g/C*)	0.70	0.69	0.69	0.71	0.70	0.70	0.16	0.16	0.16	0.16	0.16	
Capacity (*c*), veh/h	612	1319	1284	584	1334	1322	253	303	252	264	299	
Volume-to-Capacity Ratio (*X*)	0.023	0.254	0.255	0.060	0.243	0.243	0.077	0.086	0.233	0.074	0.116	
Back of Queue (*Q*), ft/ln (95 th percentile)	4.5	141.9	138.7	10.8	30.1	30	23.1	30.1	69.4	22.9	40.3	
Back of Queue (*Q*), veh/ln (95 th percentile)	0.2	5.7	5.5	0.4	1.2	1.2	0.9	1.2	2.8	0.9	1.6	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.03	0.00	0.00	0.12	0.00	0.00	0.29	0.00	0.92	0.25	0.00	
Uniform Delay (d_1), s/veh	5.3	6.8	6.8	5.4	1.2	1.2	44.6	43.0	44.0	44.2	43.2	
Incremental Delay (d_2), s/veh	0.0	0.5	0.5	0.0	0.4	0.4	0.0	0.0	0.2	0.0	0.1	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Control Delay (*d*), s/veh	5.4	7.3	7.3	5.4	1.6	1.6	44.7	43.0	44.2	44.2	43.3	
Level of Service (LOS)	A	A	A	A	A	A	D	D	D	D	D	
Approach Delay, s/veh / LOS	7.2	A		1.8	A		44.0	D		43.6	D	
Intersection Delay, s/veh / LOS	8.6						A					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.06	B	1.86	B	2.31	B	2.31	B
Bicycle LOS Score / LOS	1.05	A	1.05	A	0.66	A	0.58	A

HCS Signalized Intersection Intermediate Values

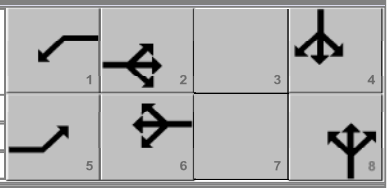
General Information				Intersection Information	
Agency	Eriksson			Duration, h	0.250
Analyst	AG	Analysis Date	7/22/2022	Area Type	Other
Jurisdiction	IDOT	Time Period	AM Peak	PHF	0.92
Urban Street	Northwest Highway	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	Vail Avenue	File Name	NW and Vail AM 2022.xus		
Project Description	Eastman				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	13	565	45	32	580	14	18	24	54	18	30	2

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	1.1	0.9	83.3	19.1	0.0	0.0
Yellow	3.5	0.0	4.5	4.5	0.0	0.0
Red	0.0	0.0	1.5	1.5	0.0	0.0



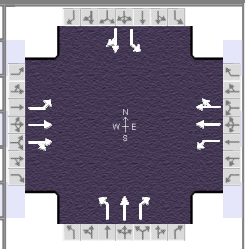
Saturation Flow / Delay	L	T	R	L	T	R	L	T	R	L	T	R
Lane Width Adjustment Factor (f_w)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles and Grade Factor (f_{HVg})	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Parking Activity Adjustment Factor (f_p)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Bus Blockage Adjustment Factor (f_{bb})	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Area Type Adjustment Factor (f_a)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Lane Utilization Adjustment Factor (f_{LU})	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Left-Turn Adjustment Factor (f_{LT})	0.952	0.000		0.952	0.000		0.734	0.000		0.740	0.000	
Right-Turn Adjustment Factor (f_{RT})		0.973	0.973		0.991	0.991		0.000	0.847		0.986	0.986
Left-Turn Pedestrian Adjustment Factor (f_{Lpb})	0.999			0.999			0.963			0.981		
Right-Turn Ped-Bike Adjustment Factor (f_{Rpb})			0.996			0.996			0.979			0.959
Work Zone Adjustment Factor (f_{wz})	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
DDI Factor (f_{DDI})	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Left-Turn Prot. CAV Adj. Factor ($f_{CAV,prot}$)	1.00			1.00								
Left-Turn Perm. CAV Adj. Factor ($f_{CAV,perm}$)							1.00			1.00		
Movement Saturation Flow Rate (s), veh/h	1810	3473	276	1810	3694	89	1343	1900	1577	1379	1756	117
Proportion of Vehicles Arriving on Green (P)	0.01	0.69	0.69	0.02	0.94	0.94	0.16	0.16	0.16	0.16	0.16	0.16
Incremental Delay Factor (k)	0.04	0.50	0.50	0.04	0.50	0.50	0.04	0.04	0.04	0.04	0.04	

Signal Timing / Movement Groups	EBL	EBT/R	WBL	WBT/R	NBL	NBT/R	SBL	SBT/R
Lost Time (t_L)	3.5	6.0	3.5	6.0		6.0		6.0
Green Ratio (g/C)	0.70	0.69	0.71	0.70		0.16		0.16
Permitted Saturation Flow Rate (s_p), veh/h/ln	797	0	784	0		1343		1379
Shared Saturation Flow Rate (s_{sh}), veh/h/ln								
Permitted Effective Green Time (g_p), s	83.3	0.0	83.3	0.0		19.1		19.1
Permitted Service Time (g_u), s	80.5	0.0	75.4	0.0		17.2		17.7
Permitted Queue Service Time (g_{ps}), s	0.1		0.4			1.5		1.5
Time to First Blockage (g_f), s	0.0	0.0	0.0	0.0		0.0		0.0
Queue Service Time Before Blockage (g_{fs}), s								
Protected Right Saturation Flow (s_R), veh/h/ln						0		
Protected Right Effective Green Time (g_R), s						0.0		

Multimodal	EB		WB		NB		SB	
Pedestrian F_w / F_v	1.389	0.000	1.198	0.000	1.557	0.000	1.557	0.000
Pedestrian F_s / F_{delay}	0.000	0.069	0.000	0.067	0.000	0.150	0.000	0.150
Pedestrian M_{corner} / M_{cw}	0.00	Infinity	0.00	Infinity	0.00	Infinity	0.00	Infinity
Bicycle c_b / d_b	1388.33	5.61	1403.87	5.33	319.02	42.39	319.02	42.39
Bicycle F_w / F_v	-3.64	0.56	-3.64	0.56	-3.64	0.17	-3.64	0.09

HCS Signalized Intersection Results Graphical Summary

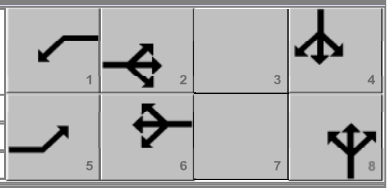
General Information				Intersection Information	
Agency	Eriksson			Duration, h	0.250
Analyst	AG	Analysis Date	7/22/2022	Area Type	Other
Jurisdiction	IDOT	Time Period	AM Peak	PHF	0.92
Urban Street	Northwest Highway	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	Vail Avenue	File Name	NW and Vail AM 2022.xus		
Project Description	Eastman				



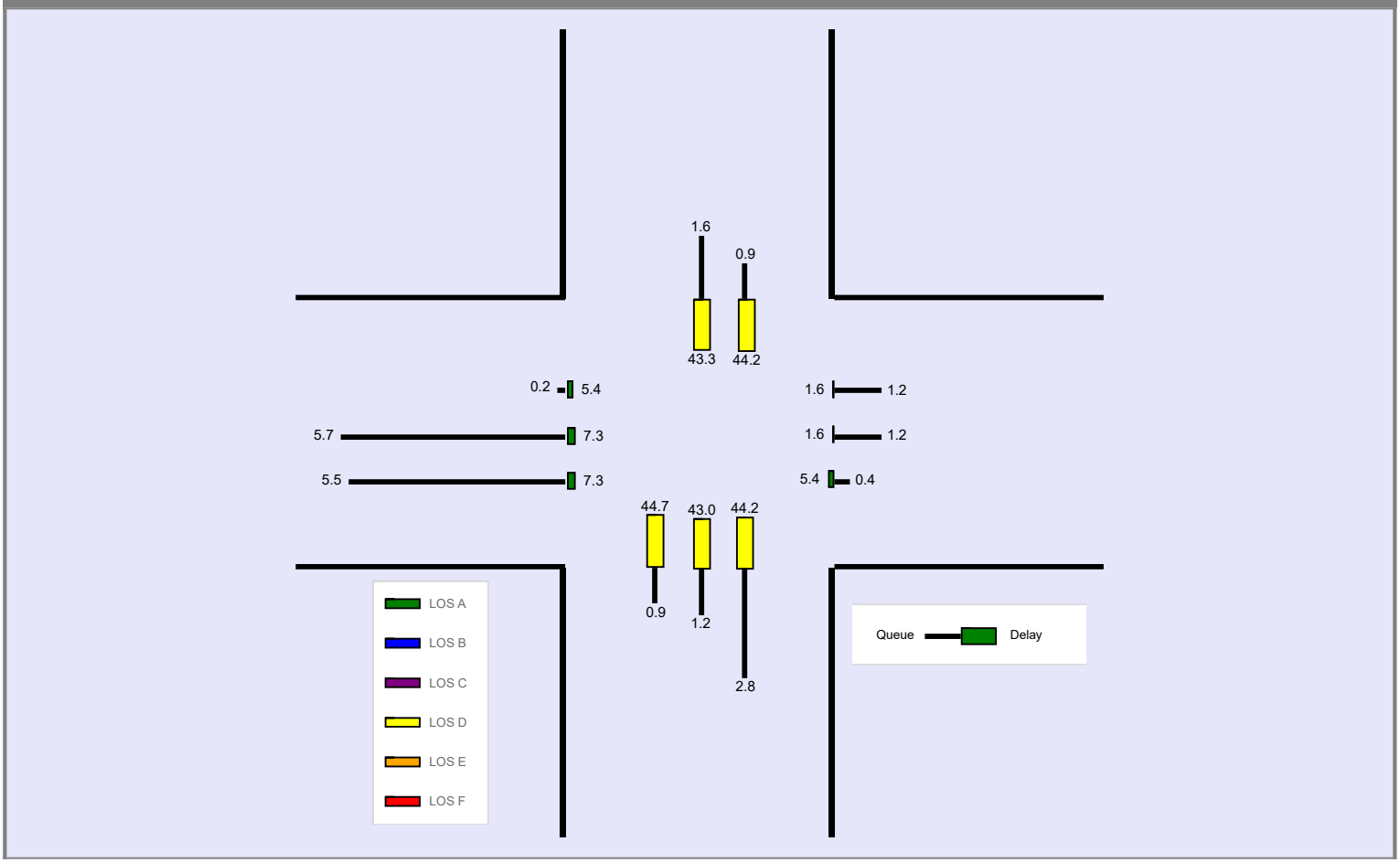
Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	13	565	45	32	580	14	18	24	54	18	30	2

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	1.1	0.9	83.3	19.1	0.0	0.0
Yellow	3.5	0.0	4.5	4.5	0.0	0.0
Red	0.0	0.0	1.5	1.5	0.0	0.0



Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Back of Queue (*Q*), ft/ln (95 th percentile)	4.5	141.9	138.7	10.8	30.1	30	23.1	30.1	69.4	22.9	40.3	
Back of Queue (*Q*), veh/ln (95 th percentile)	0.2	5.7	5.5	0.4	1.2	1.2	0.9	1.2	2.8	0.9	1.6	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.03	0.00	0.00	0.12	0.00	0.00	0.29	0.00	0.92	0.25	0.00	
Control Delay (*d*), s/veh	5.4	7.3	7.3	5.4	1.6	1.6	44.7	43.0	44.2	44.2	43.3	
Level of Service (LOS)	A	A	A	A	A	A	D	D	D	D	D	
Approach Delay, s/veh / LOS	7.2	A		1.8	A		44.0	D		43.6	D	
Intersection Delay, s/veh / LOS	8.6						A					



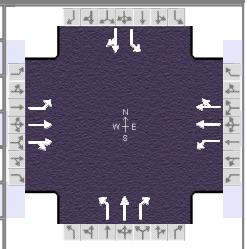
--- Messages ---

No errors or warnings exist.

--- Comments ---

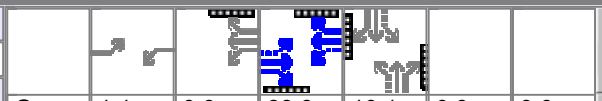
HCS Signalized Intersection Input Data

General Information				Intersection Information	
Agency	Eriksson			Duration, h	0.250
Analyst	AG	Analysis Date	7/22/2022	Area Type	Other
Jurisdiction	IDOT	Time Period	AM Peak	PHF	0.92
Urban Street	Northwest Highway	Analysis Year	2028	Analysis Period	1> 7:00
Intersection	Vail Avenue	File Name	NW and Vail AM 2028.xus		
Project Description	Eastman				

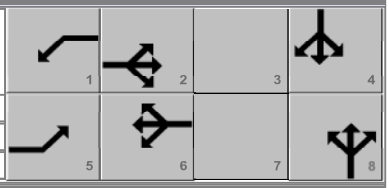


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	13	577	46	32	588	16	19	24	54	24	31	2

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	1.1	0.9	83.3	19.1	0.0	0.0
Yellow	3.5	0.0	4.5	4.5	0.0	0.0
Red	0.0	0.0	1.5	1.5	0.0	0.0



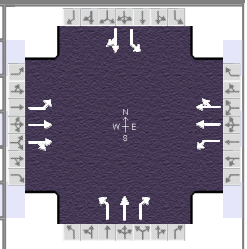
Traffic Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	13	577	46	32	588	16	19	24	54	24	31	2
Initial Queue (Q_b), veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Base Saturation Flow Rate (s_o), veh/h	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Parking (N_m), man/h		None			None			None			None	
Heavy Vehicles (P_{HV}), %	0	0		0	0		0	0	0	0	0	
Ped / Bike / RTOR, /h	5	0	0	5	0	0	11	0	0	22	0	0
Buses (N_b), buses/h	0	0	0	0	0	0	0	0	0	0	0	0
Arrival Type (*AT*)	3	3	3	3	4	4	3	3	3	3	3	3
Upstream Filtering (*I*)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Width (*W*), ft	12.0	12.0		12.0	12.0		12.0	12.0	12.0	12.0	12.0	
Turn Bay Length, ft	170	0		92	0		80	0	75	90	0	
Grade (*Pg*), %		0			0			0			0	
Speed Limit, mi/h	30	30	30	30	30	30	30	30	30	30	30	30

Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green (G_{max}) or Phase Split, s	13.2	64.8	13.2	64.8		42.0		42.0
Yellow Change Interval (*Y*), s	3.5	4.5	3.5	4.5		4.5		4.5
Red Clearance Interval (R_c), s	0.0	1.5	0.0	1.5		1.5		1.5
Minimum Green (G_{min}), s	3	15	3	15		8		8
Start-Up Lost Time (*l1*), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green (*e*), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Passage (*PT*), s	2.0	2.0	2.0	2.0		2.0		2.0
Recall Mode	Off	Max	Off	Max		Off		Off
Dual Entry	No	Yes	No	Yes		Yes		Yes
Walk (*Walk*), s		10.0		10.0		10.0		10.0
Pedestrian Clearance Time (*PC*), s		18.0		18.0		23.0		24.0

Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius	0.0	No	25.0	0.0	No	25.0	0.0	No	25.0	0.0	No	25.0
Walkway / Crosswalk Width / Length, ft	9.0	8.0	58.0	9.0	8.0	58.0	9.0	8.0	70.0	9.0	8.0	78.0
Street Width / Island / Curb, ft	0.0	0	No	0.0	0	No	0.0	0	No	0.0	0	No
Width Outside / Bike Lane / Shoulder, ft	12.0	5.0	2.0	12.0	5.0	2.0	12.0	5.0	2.0	12.0	5.0	2.0
Pedestrian Signal / Occupied Parking	No	0.50		No	0.50		No	0.50		No	0.50	

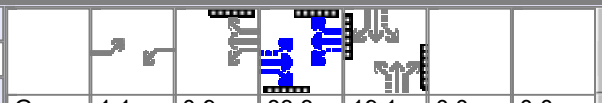
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Eriksson			Duration, h	0.250
Analyst	AG	Analysis Date	7/22/2022	Area Type	Other
Jurisdiction	IDOT	Time Period	AM Peak	PHF	0.92
Urban Street	Northwest Highway	Analysis Year	2028	Analysis Period	1> 7:00
Intersection	Vail Avenue	File Name	NW and Vail AM 2028.xus		
Project Description	Eastman				

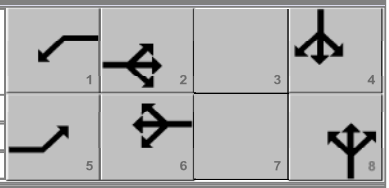


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	13	577	46	32	588	16	19	24	54	24	31	2

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	1.1	0.9	83.3	19.1	0.0	0.0
Yellow	3.5	0.0	4.5	4.5	0.0	0.0
Red	0.0	0.0	1.5	1.5	0.0	0.0



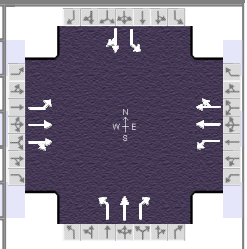
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	4.0		5.0		6.0
Phase Duration, s	4.6	89.3	5.6	90.2		25.1		25.1
Change Period, ($Y+R_c$), s	3.5	6.0	3.5	6.0		6.0		6.0
Max Allow Headway (*MAH*), s	3.2	0.0	3.2	0.0		3.3		3.3
Queue Clearance Time (g_s), s	2.3		2.7			5.9		5.4
Green Extension Time (g_e), s	0.0	0.0	0.0	0.0		0.3		0.3
Phase Call Probability	0.38		0.69			1.00		1.00
Max Out Probability	0.00		0.00			0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	14	343	334	35	330	327	21	26	59	26	36	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1810	1900	1849	1810	1900	1882	1342	1900	1577	1379	1874	
Queue Service Time (g_s), s	0.3	8.1	8.1	0.7	1.7	1.7	1.6	1.4	3.9	2.0	2.0	
Cycle Queue Clearance Time (g_c), s	0.3	8.1	8.1	0.7	1.7	1.7	3.6	1.4	3.9	3.4	2.0	
Green Ratio (*g/C*)	0.70	0.69	0.69	0.71	0.70	0.70	0.16	0.16	0.16	0.16	0.16	
Capacity (*c*), veh/h	606	1319	1283	576	1334	1321	252	303	252	264	299	
Volume-to-Capacity Ratio (*X*)	0.023	0.260	0.261	0.060	0.247	0.247	0.082	0.086	0.233	0.099	0.120	
Back of Queue (*Q*), ft/ln (95 th percentile)	4.5	145.9	142.5	10.8	30.7	30.5	24.4	30.1	69.4	30.7	41.6	
Back of Queue (*Q*), veh/ln (95 th percentile)	0.2	5.8	5.7	0.4	1.2	1.2	1.0	1.2	2.8	1.2	1.7	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.03	0.00	0.00	0.12	0.00	0.00	0.31	0.00	0.92	0.34	0.00	
Uniform Delay (d_1), s/veh	5.3	6.8	6.9	5.4	1.2	1.2	44.7	43.0	44.0	44.4	43.2	
Incremental Delay (d_2), s/veh	0.0	0.5	0.5	0.0	0.4	0.4	0.1	0.0	0.2	0.1	0.1	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Control Delay (*d*), s/veh	5.4	7.3	7.3	5.4	1.6	1.7	44.8	43.0	44.2	44.5	43.3	
Level of Service (LOS)	A	A	A	A	A	A	D	D	D	D	D	
Approach Delay, s/veh / LOS	7.3	A		1.8	A		44.0	D		43.8	D	
Intersection Delay, s/veh / LOS	8.8						A					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.06	B	1.86	B	2.31	B	2.31	B
Bicycle LOS Score / LOS	1.06	A	1.06	A	0.66	A	0.59	A

HCS Signalized Intersection Intermediate Values

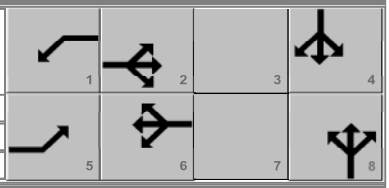
General Information				Intersection Information	
Agency	Eriksson			Duration, h	0.250
Analyst	AG	Analysis Date	7/22/2022	Area Type	Other
Jurisdiction	IDOT	Time Period	AM Peak	PHF	0.92
Urban Street	Northwest Highway	Analysis Year	2028	Analysis Period	1> 7:00
Intersection	Vail Avenue	File Name	NW and Vail AM 2028.xus		
Project Description	Eastman				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	13	577	46	32	588	16	19	24	54	24	31	2

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	1.1	0.9	83.3	19.1	0.0	0.0
Yellow	3.5	0.0	4.5	4.5	0.0	0.0
Red	0.0	0.0	1.5	1.5	0.0	0.0



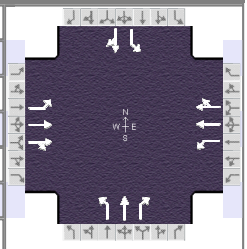
Saturation Flow / Delay	L	T	R	L	T	R	L	T	R	L	T	R
Lane Width Adjustment Factor (f_w)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles and Grade Factor (f_{HVg})	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Parking Activity Adjustment Factor (f_p)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Bus Blockage Adjustment Factor (f_{bb})	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Area Type Adjustment Factor (f_a)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Lane Utilization Adjustment Factor (f_{LU})	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Left-Turn Adjustment Factor (f_{LT})	0.952	0.000		0.952	0.000		0.734	0.000		0.740	0.000	
Right-Turn Adjustment Factor (f_{RT})		0.973	0.973		0.990	0.990		0.000	0.847		0.986	0.986
Left-Turn Pedestrian Adjustment Factor (f_{Lpb})	0.999			0.999			0.963			0.981		
Right-Turn Ped-Bike Adjustment Factor (f_{Rpb})			0.996			0.996			0.979			0.959
Work Zone Adjustment Factor (f_{wz})	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
DDI Factor (f_{DDI})	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Left-Turn Prot. CAV Adj. Factor ($f_{CAV,prot}$)	1.00			1.00								
Left-Turn Perm. CAV Adj. Factor ($f_{CAV,perm}$)							1.00			1.00		
Movement Saturation Flow Rate (s), veh/h	1810	3473	276	1810	3681	100	1342	1900	1577	1379	1760	114
Proportion of Vehicles Arriving on Green (P)	0.01	0.69	0.69	0.02	0.94	0.94	0.16	0.16	0.16	0.16	0.16	0.16
Incremental Delay Factor (k)	0.04	0.50	0.50	0.04	0.50	0.50	0.04	0.04	0.04	0.04	0.04	

Signal Timing / Movement Groups	EBL	EBT/R	WBL	WBT/R	NBL	NBT/R	SBL	SBT/R
Lost Time (t_L)	3.5	6.0	3.5	6.0		6.0		6.0
Green Ratio (g/C)	0.70	0.69	0.71	0.70		0.16		0.16
Permitted Saturation Flow Rate (s_p), veh/h/ln	789	0	774	0		1342		1379
Shared Saturation Flow Rate (s_{sh}), veh/h/ln								
Permitted Effective Green Time (g_p), s	83.3	0.0	83.3	0.0		19.1		19.1
Permitted Service Time (g_u), s	80.5	0.0	75.2	0.0		17.2		17.8
Permitted Queue Service Time (g_{ps}), s	0.1		0.4			1.6		2.0
Time to First Blockage (g_f), s	0.0	0.0	0.0	0.0		0.0		0.0
Queue Service Time Before Blockage (g_{fs}), s								
Protected Right Saturation Flow (s_R), veh/h/ln						0		
Protected Right Effective Green Time (g_R), s						0.0		

Multimodal	EB		WB		NB		SB	
Pedestrian F_w / F_v	1.389	0.000	1.198	0.000	1.557	0.000	1.557	0.000
Pedestrian F_s / F_{delay}	0.000	0.069	0.000	0.067	0.000	0.150	0.000	0.150
Pedestrian M_{corner} / M_{cw}	0.00	Infinity	0.00	Infinity	0.00	Infinity	0.00	Infinity
Bicycle c_b / d_b	1388.23	5.61	1403.77	5.33	319.11	42.38	319.11	42.38
Bicycle F_w / F_v	-3.64	0.57	-3.64	0.57	-3.64	0.17	-3.64	0.10

HCS Signalized Intersection Results Graphical Summary

General Information				Intersection Information	
Agency	Eriksson			Duration, h	0.250
Analyst	AG	Analysis Date	7/22/2022	Area Type	Other
Jurisdiction	IDOT	Time Period	AM Peak	PHF	0.92
Urban Street	Northwest Highway	Analysis Year	2028	Analysis Period	1> 7:00
Intersection	Vail Avenue	File Name	NW and Vail AM 2028.xus		
Project Description	Eastman				

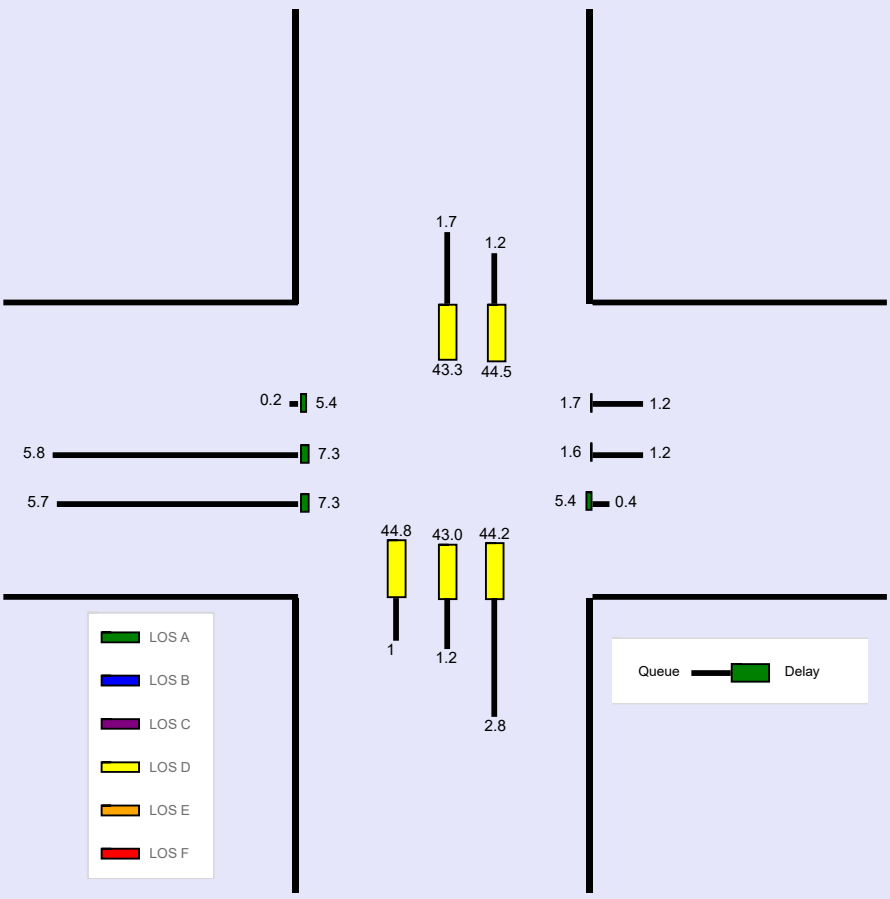


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	13	577	46	32	588	16	19	24	54	24	31	2

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	1.1	0.9	83.3	19.1	0.0	0.0	1	2	3	4		
Yellow	3.5	0.0	4.5	4.5	0.0	0.0	5	6	7	8		
Red	0.0	0.0	1.5	1.5	0.0	0.0						

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Back of Queue (*Q*), ft/ln (95 th percentile)	4.5	145.9	142.5	10.8	30.7	30.5	24.4	30.1	69.4	30.7	41.6	
Back of Queue (*Q*), veh/ln (95 th percentile)	0.2	5.8	5.7	0.4	1.2	1.2	1.0	1.2	2.8	1.2	1.7	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.03	0.00	0.00	0.12	0.00	0.00	0.31	0.00	0.92	0.34	0.00	
Control Delay (*d*), s/veh	5.4	7.3	7.3	5.4	1.6	1.7	44.8	43.0	44.2	44.5	43.3	
Level of Service (LOS)	A	A	A	A	A	A	D	D	D	D	D	
Approach Delay, s/veh / LOS	7.3	A		1.8	A		44.0	D		43.8	D	
Intersection Delay, s/veh / LOS	8.8						A					



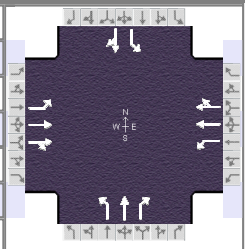
--- Messages ---

No errors or warnings exist.

--- Comments ---

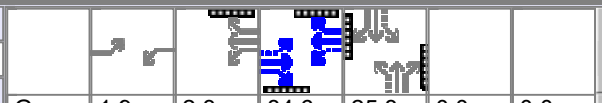
HCS Signalized Intersection Input Data

General Information				Intersection Information	
Agency	Eriksson			Duration, h	0.250
Analyst	AG	Analysis Date	7/22/2022	Area Type	Other
Jurisdiction	IDOT	Time Period	PM Peak	PHF	0.94
Urban Street	Northwest Highway	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	Vail Avenue	File Name	NW and Vail PM 2022.xus		
Project Description	Eastman				

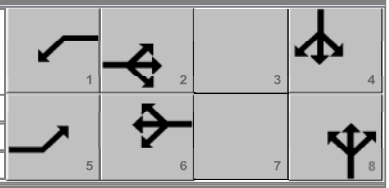


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	25	591	78	86	748	22	38	47	101	15	39	5

Signal Information			
Cycle, s	130.0	Reference Phase	2
Offset, s	0	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	1.9	2.3	84.6	25.8	0.0	0.0
Yellow	3.5	0.0	4.5	4.5	0.0	0.0
Red	0.0	0.0	1.5	1.5	0.0	0.0



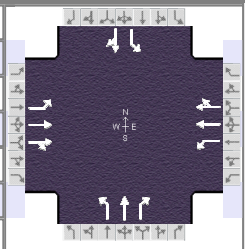
Traffic Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	25	591	78	86	748	22	38	47	101	15	39	5
Initial Queue (Q_b), veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Base Saturation Flow Rate (s_o), veh/h	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Parking (N_m), man/h		None			None			None			None	
Heavy Vehicles (P_{HV}), %	0	0		0	0		0	0	0	0	0	
Ped / Bike / RTOR, /h	8	0	0	10	2	0	22	2	0	40	0	0
Buses (N_b), buses/h	0	0	0	0	0	0	0	0	0	0	0	0
Arrival Type (*AT*)	3	3	3	3	3	3	3	3	3	3	3	3
Upstream Filtering (*I*)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Width (*W*), ft	12.0	12.0		12.0	12.0		12.0	12.0	12.0	12.0	12.0	
Turn Bay Length, ft	170	0		92	0		80	0	75	90	0	
Grade (*Pg*), %		0			0			0			0	
Speed Limit, mi/h	30	30	30	30	30	30	30	30	30	30	30	30

Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green (G_{max}) or Phase Split, s	13.0	78.0	13.0	78.0		39.0		39.0
Yellow Change Interval (*Y*), s	3.5	4.5	3.5	4.5		4.5		4.5
Red Clearance Interval (R_c), s	0.0	1.5	0.0	1.5		1.5		1.5
Minimum Green (G_{min}), s	3	15	3	15		8		8
Start-Up Lost Time (*l*t), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green (*e*), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Passage (*PT*), s	2.0	2.0	2.0	2.0		2.0		2.0
Recall Mode	Off	Max	Off	Max		Off		Off
Dual Entry	No	Yes	No	Yes		Yes		Yes
Walk (*Walk*), s		10.0		10.0		10.0		10.0
Pedestrian Clearance Time (*PC*), s		18.0		18.0		23.0		24.0

Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius	0.0	No	25.0	0.0	No	25.0	0.0	No	25.0	0.0	No	25.0
Walkway / Crosswalk Width / Length, ft	9.0	8.0	58.0	9.0	8.0	58.0	9.0	8.0	70.0	9.0	8.0	78.0
Street Width / Island / Curb, ft	0.0	0	No	0.0	0	No	0.0	0	No	0.0	0	No
Width Outside / Bike Lane / Shoulder, ft	12.0	5.0	2.0	12.0	5.0	2.0	12.0	5.0	2.0	12.0	5.0	2.0
Pedestrian Signal / Occupied Parking	No	0.50		No	0.50		No	0.50		No	0.50	

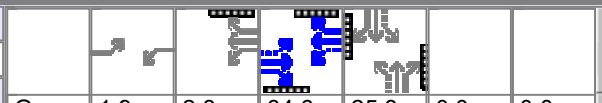
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Eriksson			Duration, h	0.250
Analyst	AG	Analysis Date	7/22/2022	Area Type	Other
Jurisdiction	IDOT	Time Period	PM Peak	PHF	0.94
Urban Street	Northwest Highway	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	Vail Avenue	File Name	NW and Vail PM 2022.xus		
Project Description	Eastman				

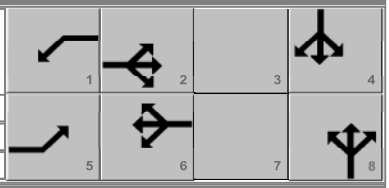


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	25	591	78	86	748	22	38	47	101	15	39	5

Signal Information			
Cycle, s	130.0	Reference Phase	2
Offset, s	0	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	1.9	2.3	84.6	25.8	0.0	0.0
Yellow	3.5	0.0	4.5	4.5	0.0	0.0
Red	0.0	0.0	1.5	1.5	0.0	0.0



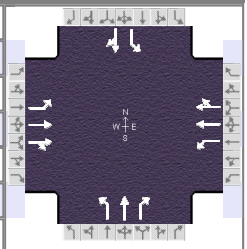
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	4.0		5.0		6.0
Phase Duration, s	5.4	90.6	7.6	92.9		31.8		31.8
Change Period, ($Y+R_c$), s	3.5	6.0	3.5	6.0		6.0		6.0
Max Allow Headway (*MAH*), s	3.2	0.0	3.2	0.0		3.3		3.3
Queue Clearance Time (g_s), s	2.6		4.2			9.8		6.1
Green Extension Time (g_e), s	0.0	0.0	0.1	0.0		0.5		0.5
Phase Call Probability	0.62		0.96			1.00		1.00
Max Out Probability	0.00		0.00			0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	27	363	349	91	412	407	40	50	107	16	47	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1810	1900	1819	1810	1900	1877	1306	1900	1535	1336	1846	
Queue Service Time (g_s), s	0.6	10.7	10.8	2.2	11.9	11.9	3.4	2.8	7.8	1.3	2.7	
Cycle Queue Clearance Time (g_c), s	0.6	10.7	10.8	2.2	11.9	11.9	6.1	2.8	7.8	4.1	2.7	
Green Ratio (*g/C*)	0.67	0.65	0.65	0.69	0.67	0.67	0.20	0.20	0.20	0.20	0.20	
Capacity (*c*), veh/h	462	1237	1184	538	1270	1254	287	377	304	291	366	
Volume-to-Capacity Ratio (*X*)	0.058	0.294	0.294	0.170	0.325	0.325	0.141	0.133	0.353	0.055	0.128	
Back of Queue (*Q*), ft/ln (95 th percentile)	11.2	201.7	195.7	36.4	217.5	215.5	50.6	60.5	136.4	19.6	56.6	
Back of Queue (*Q*), veh/ln (95 th percentile)	0.4	8.1	7.8	1.5	8.7	8.6	2.0	2.4	5.5	0.8	2.3	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.07	0.00	0.00	0.40	0.00	0.00	0.63	0.00	1.82	0.22	0.00	
Uniform Delay (d_1), s/veh	7.9	9.8	9.8	7.2	9.1	9.1	45.4	42.9	44.9	44.6	42.9	
Incremental Delay (d_2), s/veh	0.0	0.6	0.6	0.1	0.7	0.7	0.1	0.1	0.3	0.0	0.1	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Control Delay (*d*), s/veh	8.0	10.4	10.4	7.3	9.8	9.8	45.5	43.0	45.2	44.6	42.9	
Level of Service (LOS)	A	B	B	A	A	A	D	D	D	D	D	
Approach Delay, s/veh / LOS	10.3	B		9.6	A		44.7	D		43.4	D	
Intersection Delay, s/veh / LOS	14.6						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.07	B	1.88	B	2.31	B	2.31	B
Bicycle LOS Score / LOS	1.10	A	1.24	A	0.81	A	0.59	A

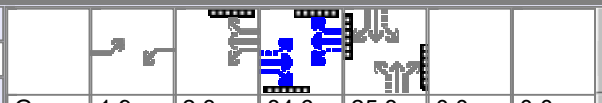
HCS Signalized Intersection Intermediate Values

General Information				Intersection Information	
Agency	Eriksson			Duration, h	0.250
Analyst	AG	Analysis Date	7/22/2022	Area Type	Other
Jurisdiction	IDOT	Time Period	PM Peak	PHF	0.94
Urban Street	Northwest Highway	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	Vail Avenue	File Name	NW and Vail PM 2022.xus		
Project Description	Eastman				

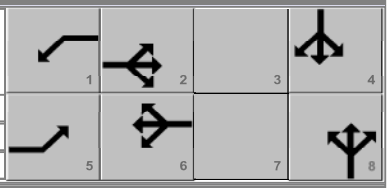


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	25	591	78	86	748	22	38	47	101	15	39	5

Signal Information			
Cycle, s	130.0	Reference Phase	2
Offset, s	0	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	1.9	2.3	84.6	25.8	0.0	0.0
Yellow	3.5	0.0	4.5	4.5	0.0	0.0
Red	0.0	0.0	1.5	1.5	0.0	0.0



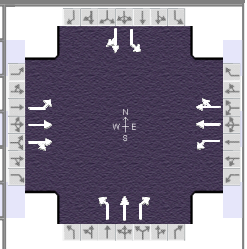
Saturation Flow / Delay	L	T	R	L	T	R	L	T	R	L	T	R
Lane Width Adjustment Factor (f_w)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles and Grade Factor (f_{HVg})	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Parking Activity Adjustment Factor (f_p)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Bus Blockage Adjustment Factor (f_{bb})	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Area Type Adjustment Factor (f_a)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Lane Utilization Adjustment Factor (f_{LU})	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Left-Turn Adjustment Factor (f_{LT})	0.952	0.000		0.952	0.000		0.727	0.000		0.724	0.000	
Right-Turn Adjustment Factor (f_{RT})		0.957	0.957		0.988	0.988		0.000	0.847		0.972	0.972
Left-Turn Pedestrian Adjustment Factor (f_{Lpb})	0.999			0.999			0.946			0.971		
Right-Turn Ped-Bike Adjustment Factor (f_{Rpb})			0.994			0.972			0.953			0.939
Work Zone Adjustment Factor (f_{wz})	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
DDI Factor (f_{DDI})	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Left-Turn Prot. CAV Adj. Factor ($f_{CAV,prot}$)	1.00			1.00								
Left-Turn Perm. CAV Adj. Factor ($f_{CAV,perm}$)							1.00			1.00		
Movement Saturation Flow Rate (s), veh/h	1810	3286	433	1810	3669	108	1306	1900	1535	1336	1636	210
Proportion of Vehicles Arriving on Green (P)	0.01	0.65	0.65	0.03	0.67	0.67	0.20	0.20	0.20	0.20	0.20	0.20
Incremental Delay Factor (k)	0.04	0.50	0.50	0.04	0.50	0.50	0.04	0.04	0.04	0.04	0.04	

Signal Timing / Movement Groups	EBL	EBT/R	WBL	WBT/R	NBL	NBT/R	SBL	SBT/R
Lost Time (t_L)	3.5	6.0	3.5	6.0		6.0		6.0
Green Ratio (g/C)	0.67	0.65	0.69	0.67		0.20		0.20
Permitted Saturation Flow Rate (s_p), veh/h/ln	678	0	750	0		1306		1336
Shared Saturation Flow Rate (s_{sh}), veh/h/ln								
Permitted Effective Green Time (g_p), s	84.6	0.0	85.4	0.0		25.8		25.8
Permitted Service Time (g_u), s	72.9	0.0	73.9	0.0		23.1		23.0
Permitted Queue Service Time (g_{ps}), s	0.5		1.6			3.4		1.3
Time to First Blockage (g_f), s	0.0	0.0	0.0	0.0		0.0		0.0
Queue Service Time Before Blockage (g_{fs}), s								
Protected Right Saturation Flow (s_R), veh/h/ln						0		
Protected Right Effective Green Time (g_R), s						0.0		

Multimodal	EB		WB		NB		SB	
Pedestrian F_w / F_v	1.389	0.000	1.198	0.000	1.557	0.000	1.557	0.000
Pedestrian F_s / F_{delay}	0.000	0.083	0.000	0.079	0.000	0.150	0.000	0.150
Pedestrian M_{corner} / M_{cw}	0.00	Infinity	0.00	Infinity	0.00	Infinity	0.00	Infinity
Bicycle c_b / d_b	1301.89	7.92	1336.52	7.16	396.53	41.82	396.53	41.78
Bicycle F_w / F_v	-3.64	0.61	-3.64	0.75	-3.64	0.33	-3.64	0.10

HCS Signalized Intersection Results Graphical Summary

General Information				Intersection Information	
Agency	Eriksson			Duration, h	0.250
Analyst	AG	Analysis Date	7/22/2022	Area Type	Other
Jurisdiction	IDOT	Time Period	PM Peak	PHF	0.94
Urban Street	Northwest Highway	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	Vail Avenue	File Name	NW and Vail PM 2022.xus		
Project Description	Eastman				

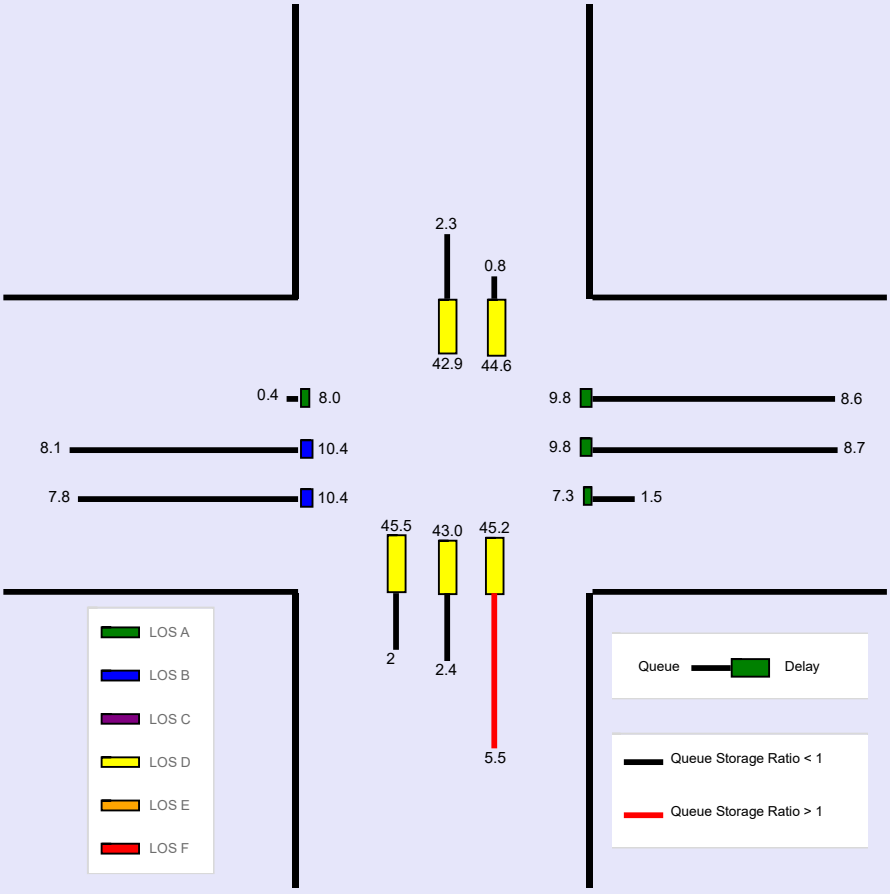


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	25	591	78	86	748	22	38	47	101	15	39	5

Signal Information			
Cycle, s	130.0	Reference Phase	2
Offset, s	0	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	1.9	2.3	84.6	25.8	0.0	0.0	1	2	3	4		
Yellow	3.5	0.0	4.5	4.5	0.0	0.0	5	6	7	8		
Red	0.0	0.0	1.5	1.5	0.0	0.0						

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Back of Queue (*Q*), ft/ln (95 th percentile)	11.2	201.7	195.7	36.4	217.5	215.5	50.6	60.5	136.4	19.6	56.6	
Back of Queue (*Q*), veh/ln (95 th percentile)	0.4	8.1	7.8	1.5	8.7	8.6	2.0	2.4	5.5	0.8	2.3	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.07	0.00	0.00	0.40	0.00	0.00	0.63	0.00	1.82	0.22	0.00	
Control Delay (*d*), s/veh	8.0	10.4	10.4	7.3	9.8	9.8	45.5	43.0	45.2	44.6	42.9	
Level of Service (LOS)	A	B	B	A	A	A	D	D	D	D	D	
Approach Delay, s/veh / LOS	10.3	B		9.6	A		44.7	D		43.4	D	
Intersection Delay, s/veh / LOS	14.6						B					



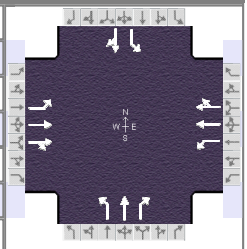
--- Messages ---

WARNING: Since queue spillover from turn lanes and spillback into upstream intersections is not accounted for in the HCM procedures, use of a simulation tool may be advised in situations where the Queue Storage Ratio exceeds 1.0.

--- Comments ---

HCS Signalized Intersection Input Data

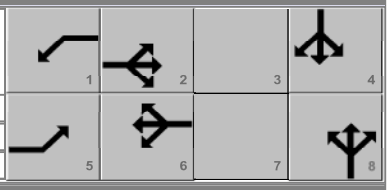
General Information				Intersection Information	
Agency	Eriksson			Duration, h	0.250
Analyst	AG	Analysis Date	7/22/2022	Area Type	Other
Jurisdiction	IDOT	Time Period	PM Peak	PHF	0.94
Urban Street	Northwest Highway	Analysis Year	2028	Analysis Period	1> 7:00
Intersection	Vail Avenue	File Name	NW and Vail PM 2028.xus		
Project Description	Eastman				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	25	600	80	87	769	27	40	48	101	19	40	5

Signal Information			
Cycle, s	130.0	Reference Phase	2
Offset, s	0	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	1.9	2.3	84.6	25.8	0.0	0.0						
Yellow	3.5	0.0	4.5	4.5	0.0	0.0						
Red	0.0	0.0	1.5	1.5	0.0	0.0						



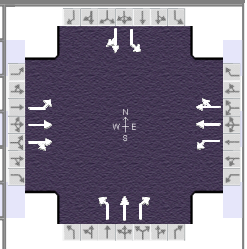
Traffic Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	25	600	80	87	769	27	40	48	101	19	40	5
Initial Queue (Q_b), veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Base Saturation Flow Rate (s_o), veh/h	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Parking (N_m), man/h		None			None			None			None	
Heavy Vehicles (P_{HV}), %	0	0		0	0		0	0	0	0	0	
Ped / Bike / RTOR, /h	8	0	0	10	2	0	22	2	0	40	0	0
Buses (N_b), buses/h	0	0	0	0	0	0	0	0	0	0	0	0
Arrival Type (*AT*)	3	3	3	3	4	4	3	3	3	3	3	3
Upstream Filtering (*I*)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Width (*W*), ft	12.0	12.0		12.0	12.0		12.0	12.0	12.0	12.0	12.0	
Turn Bay Length, ft	170	0		92	0		80	0	75	90	0	
Grade (*Pg*), %		0			0			0			0	
Speed Limit, mi/h	30	30	30	30	30	30	30	30	30	30	30	30

Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green (G_{max}) or Phase Split, s	13.0	78.0	13.0	78.0		39.0		39.0
Yellow Change Interval (*Y*), s	3.5	4.5	3.5	4.5		4.5		4.5
Red Clearance Interval (R_c), s	0.0	1.5	0.0	1.5		1.5		1.5
Minimum Green (G_{min}), s	3	15	3	15		8		8
Start-Up Lost Time (*l*t), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green (*e*), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Passage (*PT*), s	2.0	2.0	2.0	2.0		2.0		2.0
Recall Mode	Off	Max	Off	Max		Off		Off
Dual Entry	No	Yes	No	Yes		Yes		Yes
Walk (*Walk*), s		10.0		10.0		10.0		10.0
Pedestrian Clearance Time (*PC*), s		18.0		18.0		23.0		24.0

Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius	0.0	No	25.0	0.0	No	25.0	0.0	No	25.0	0.0	No	25.0
Walkway / Crosswalk Width / Length, ft	9.0	8.0	58.0	9.0	8.0	58.0	9.0	8.0	70.0	9.0	8.0	78.0
Street Width / Island / Curb, ft	0.0	0	No	0.0	0	No	0.0	0	No	0.0	0	No
Width Outside / Bike Lane / Shoulder, ft	12.0	5.0	2.0	12.0	5.0	2.0	12.0	5.0	2.0	12.0	5.0	2.0
Pedestrian Signal / Occupied Parking	No		0.50	No		0.50	No		0.50	No		0.50

HCS Signalized Intersection Results Summary

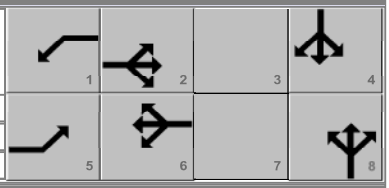
General Information				Intersection Information	
Agency	Eriksson			Duration, h	0.250
Analyst	AG	Analysis Date	7/22/2022	Area Type	Other
Jurisdiction	IDOT	Time Period	PM Peak	PHF	0.94
Urban Street	Northwest Highway	Analysis Year	2028	Analysis Period	1> 7:00
Intersection	Vail Avenue	File Name	NW and Vail PM 2028.xus		
Project Description	Eastman				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	25	600	80	87	769	27	40	48	101	19	40	5

Signal Information			
Cycle, s	130.0	Reference Phase	2
Offset, s	0	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	1.9	2.3	84.6	25.8	0.0	0.0
Yellow	3.5	0.0	4.5	4.5	0.0	0.0
Red	0.0	0.0	1.5	1.5	0.0	0.0



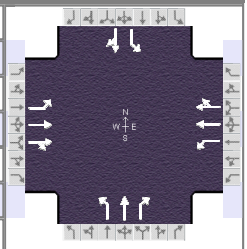
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	4.0		5.0		6.0
Phase Duration, s	5.4	90.6	7.6	92.9		31.8		31.8
Change Period, ($Y+R_c$), s	3.5	6.0	3.5	6.0		6.0		6.0
Max Allow Headway (*MAH*), s	3.2	0.0	3.2	0.0		3.3		3.3
Queue Clearance Time (g_s), s	2.6		4.2			9.8		6.5
Green Extension Time (g_e), s	0.0	0.0	0.1	0.0		0.5		0.5
Phase Call Probability	0.62		0.96			1.00		1.00
Max Out Probability	0.00		0.00			0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	27	369	354	93	426	420	43	51	107	20	48	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1810	1900	1818	1810	1900	1873	1305	1900	1535	1335	1847	
Queue Service Time (g_s), s	0.6	11.0	11.0	2.2	4.5	4.5	3.6	2.9	7.8	1.6	2.8	
Cycle Queue Clearance Time (g_c), s	0.6	11.0	11.0	2.2	4.5	4.5	6.4	2.9	7.8	4.5	2.8	
Green Ratio (*g/C*)	0.66	0.65	0.65	0.69	0.67	0.67	0.20	0.20	0.20	0.20	0.20	
Capacity (*c*), veh/h	489	1236	1183	533	1270	1251	286	377	304	291	366	
Volume-to-Capacity Ratio (*X*)	0.054	0.299	0.299	0.174	0.336	0.336	0.149	0.136	0.353	0.070	0.131	
Back of Queue (*Q*), ft/ln (95 th percentile)	11.2	205.5	199.3	36.9	73.4	72.5	53.4	61.8	136.4	24.9	57.9	
Back of Queue (*Q*), veh/ln (95 th percentile)	0.4	8.2	8.0	1.5	2.9	2.9	2.1	2.5	5.5	1.0	2.3	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.07	0.00	0.00	0.40	0.00	0.00	0.67	0.00	1.82	0.28	0.00	
Uniform Delay (d_1), s/veh	7.5	9.8	9.9	7.3	2.6	2.6	45.5	42.9	44.9	44.8	42.9	
Incremental Delay (d_2), s/veh	0.0	0.6	0.6	0.1	0.7	0.7	0.1	0.1	0.3	0.0	0.1	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Control Delay (*d*), s/veh	7.5	10.5	10.5	7.3	3.3	3.3	45.6	43.0	45.2	44.8	42.9	
Level of Service (LOS)	A	B	B	A	A	A	D	D	D	D	D	
Approach Delay, s/veh / LOS	10.4	B		3.7	A		44.7	D		43.5	D	
Intersection Delay, s/veh / LOS	11.9						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.07	B	1.88	B	2.31	B	2.31	B
Bicycle LOS Score / LOS	1.11	A	1.26	A	0.82	A	0.60	A

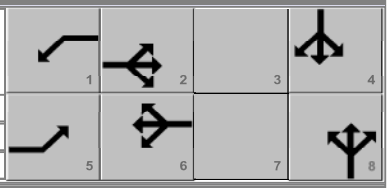
HCS Signalized Intersection Intermediate Values

General Information				Intersection Information	
Agency	Eriksson			Duration, h	0.250
Analyst	AG	Analysis Date	7/22/2022	Area Type	Other
Jurisdiction	IDOT	Time Period	PM Peak	PHF	0.94
Urban Street	Northwest Highway	Analysis Year	2028	Analysis Period	1> 7:00
Intersection	Vail Avenue	File Name	NW and Vail PM 2028.xus		
Project Description	Eastman				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	25	600	80	87	769	27	40	48	101	19	40	5

Signal Information												
Cycle, s	130.0	Reference Phase	2									
Offset, s	0	Reference Point	Begin									
Uncoordinated	No	Simult. Gap E/W	On									
Force Mode	Fixed	Simult. Gap N/S	On									
				Green	1.9	2.3	84.6	25.8	0.0	0.0		
				Yellow	3.5	0.0	4.5	4.5	0.0	0.0		
				Red	0.0	0.0	1.5	1.5	0.0	0.0		



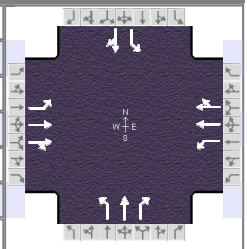
Saturation Flow / Delay	L	T	R	L	T	R	L	T	R	L	T	R
Lane Width Adjustment Factor (f_w)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles and Grade Factor (f_{HVg})	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Parking Activity Adjustment Factor (f_p)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Bus Blockage Adjustment Factor (f_{bb})	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Area Type Adjustment Factor (f_a)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Lane Utilization Adjustment Factor (f_{LU})	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Left-Turn Adjustment Factor (f_{LT})	0.952	0.000		0.952	0.000		0.726	0.000		0.724	0.000	
Right-Turn Adjustment Factor (f_{RT})		0.957	0.957		0.986	0.986		0.000	0.847		0.972	0.972
Left-Turn Pedestrian Adjustment Factor (f_{Lpb})	0.998			0.999			0.946			0.971		
Right-Turn Ped-Bike Adjustment Factor (f_{Rpb})			0.994			0.972			0.953			0.939
Work Zone Adjustment Factor (f_{wz})	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
DDI Factor (f_{DDI})	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Left-Turn Prot. CAV Adj. Factor ($f_{CAV,prot}$)	1.00			1.00								
Left-Turn Perm. CAV Adj. Factor ($f_{CAV,perm}$)							1.00			1.00		
Movement Saturation Flow Rate (s), veh/h	1810	3281	437	1810	3645	128	1305	1900	1535	1335	1642	205
Proportion of Vehicles Arriving on Green (P)	0.01	0.65	0.65	0.03	0.89	0.89	0.20	0.20	0.20	0.20	0.20	0.20
Incremental Delay Factor (k)	0.04	0.50	0.50	0.04	0.50	0.50	0.04	0.04	0.04	0.04	0.04	

Signal Timing / Movement Groups	EBL	EBT/R	WBL	WBT/R	NBL	NBT/R	SBL	SBT/R
Lost Time (t_L)	3.5	6.0	3.5	6.0		6.0		6.0
Green Ratio (g/C)	0.66	0.65	0.69	0.67		0.20		0.20
Permitted Saturation Flow Rate (s_p), veh/h/ln	661	0	742	0		1305		1335
Shared Saturation Flow Rate (s_{sh}), veh/h/ln								
Permitted Effective Green Time (g_p), s	84.6	0.0	85.4	0.0		25.8		25.8
Permitted Service Time (g_u), s	80.3	0.0	73.6	0.0		23.0		22.9
Permitted Queue Service Time (g_{ps}), s	0.2		1.7			3.6		1.6
Time to First Blockage (g_f), s	0.0	0.0	0.0	0.0		0.0		0.0
Queue Service Time Before Blockage (g_{fs}), s								
Protected Right Saturation Flow (s_R), veh/h/ln						0		
Protected Right Effective Green Time (g_R), s						0.0		

Multimodal	EB		WB		NB		SB	
Pedestrian F_w / F_v	1.389	0.000	1.198	0.000	1.557	0.000	1.557	0.000
Pedestrian F_s / F_{delay}	0.000	0.083	0.000	0.079	0.000	0.150	0.000	0.150
Pedestrian M_{corner} / M_{cw}	0.00	Infinity	0.00	Infinity	0.00	Infinity	0.00	Infinity
Bicycle c_b / d_b	1301.32	7.93	1336.43	7.16	396.62	41.82	396.62	41.78
Bicycle F_w / F_v	-3.64	0.62	-3.64	0.77	-3.64	0.33	-3.64	0.11

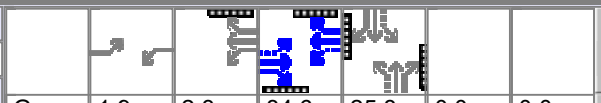
HCS Signalized Intersection Results Graphical Summary

General Information				Intersection Information	
Agency	Eriksson			Duration, h	0.250
Analyst	AG	Analysis Date	7/22/2022	Area Type	Other
Jurisdiction	IDOT	Time Period	PM Peak	PHF	0.94
Urban Street	Northwest Highway	Analysis Year	2028	Analysis Period	1> 7:00
Intersection	Vail Avenue	File Name	NW and Vail PM 2028.xus		
Project Description	Eastman				

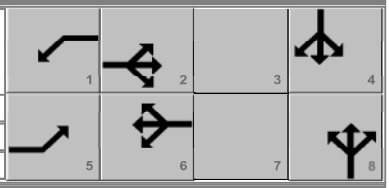


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	25	600	80	87	769	27	40	48	101	19	40	5

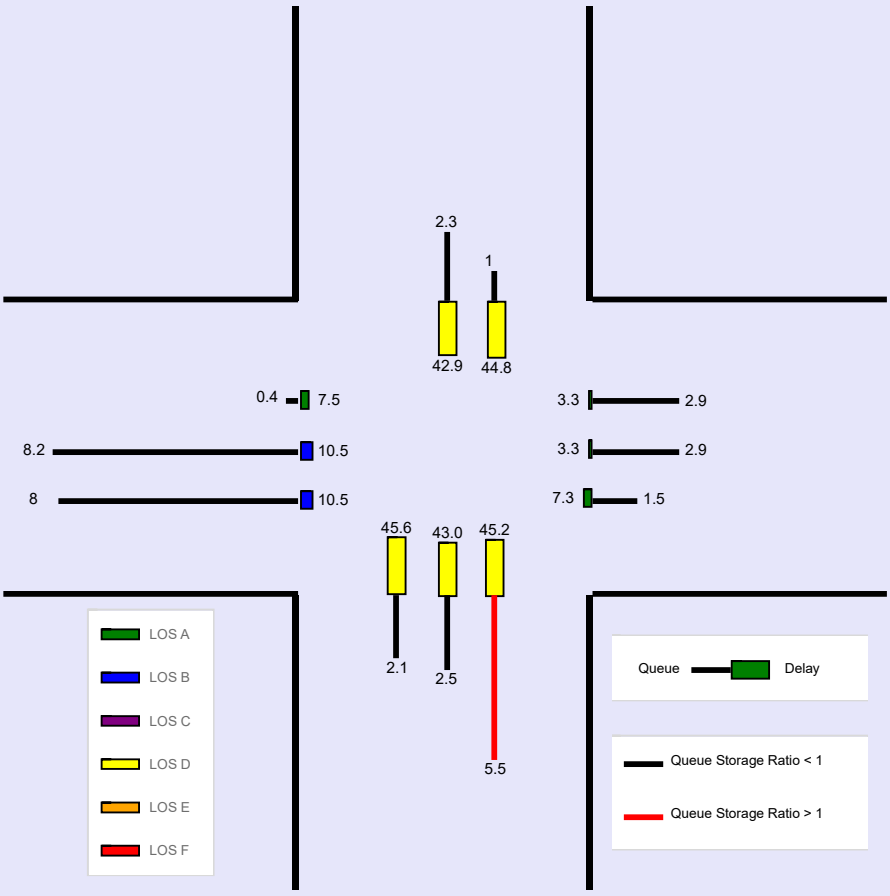
Signal Information			
Cycle, s	130.0	Reference Phase	2
Offset, s	0	Reference Point	Begin
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	1.9	2.3	84.6	25.8	0.0	0.0
Yellow	3.5	0.0	4.5	4.5	0.0	0.0
Red	0.0	0.0	1.5	1.5	0.0	0.0



Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Back of Queue (*Q*), ft/ln (95 th percentile)	11.2	205.5	199.3	36.9	73.4	72.5	53.4	61.8	136.4	24.9	57.9	
Back of Queue (*Q*), veh/ln (95 th percentile)	0.4	8.2	8.0	1.5	2.9	2.9	2.1	2.5	5.5	1.0	2.3	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.07	0.00	0.00	0.40	0.00	0.00	0.67	0.00	1.82	0.28	0.00	
Control Delay (*d*), s/veh	7.5	10.5	10.5	7.3	3.3	3.3	45.6	43.0	45.2	44.8	42.9	
Level of Service (LOS)	A	B	B	A	A	A	D	D	D	D	D	
Approach Delay, s/veh / LOS	10.4	B		3.7	A		44.7	D		43.5	D	
Intersection Delay, s/veh / LOS	11.9						B					



--- Messages ---

WARNING: Since queue spillover from turn lanes and spillback into upstream intersections is not accounted for in the HCM procedures, use of a simulation tool may be advised in situations where the Queue Storage Ratio exceeds 1.0.

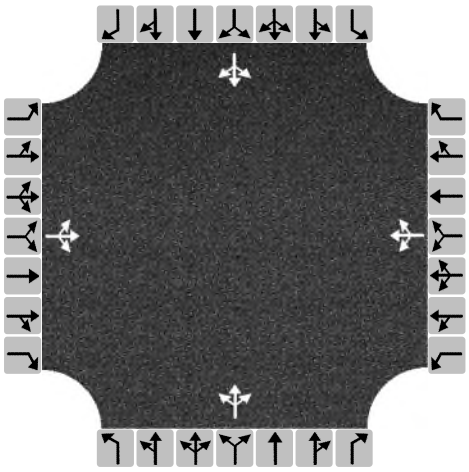
--- Comments ---

HCS All-Way Stop Control Report

General and Site Information

Analyst	AG
Agency/Co.	Eriksson
Date Performed	7/11/2023
Analysis Year	2022
Analysis Time Period (hrs)	0.25
Time Analyzed	AM Peak
Project Description	Eastman
Intersection	Vail and Eastman
Jurisdiction	Arlington Heights
East/West Street	Eastman Street
North/South Street	Vail Avenue
Peak Hour Factor	0.86

Lanes



Turning Movement Demand Volumes

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume (veh/h)	4	3	2	4	28	13	2	37	12	8	44	2
% Thrus in Shared Lane												

Lane Flow Rate and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			LTR			LTR			LTR		
Flow Rate, v (veh/h)	10			52			59			63		
Percent Heavy Vehicles	2			2			2			2		
Initial Departure Headway, h_d (s)	3.20			3.20			3.20			3.20		
Initial Degree of Utilization, x	0.009			0.047			0.053			0.056		
Final Departure Headway, h_d (s)	4.20			4.05			4.00			4.13		
Final Degree of Utilization, x	0.012			0.059			0.066			0.072		
Move-Up Time, m (s)	2.0			2.0			2.0			2.0		
Service Time, t_s (s)	2.20			2.05			2.00			2.13		

Capacity, Delay and Level of Service

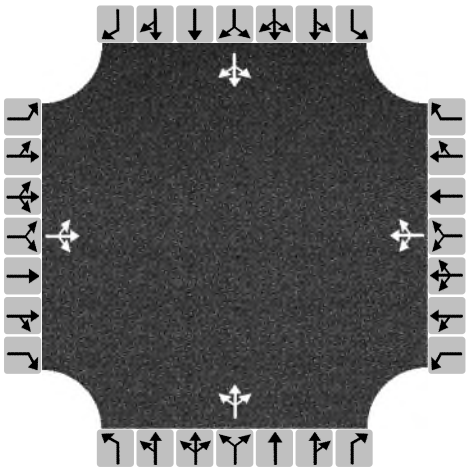
Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			LTR			LTR			LTR		
Flow Rate, v (veh/h)	10			52			59			63		
Capacity (veh/h)	857			889			901			871		
95% Queue Length, Q_{95} (veh)	0.0			0.2			0.2			0.2		
Control Delay (s/veh)	7.3			7.3			7.3			7.5		
Level of Service, LOS	A			A			A			A		
Approach Delay (s/veh) | LOS	7.3	A		7.3	A		7.3	A		7.5	A	
Intersection Delay (s/veh) | LOS	7.3						A					

HCS All-Way Stop Control Report

General and Site Information

Analyst	AG
Agency/Co.	Eriksson
Date Performed	7/11/2023
Analysis Year	2028
Analysis Time Period (hrs)	0.25
Time Analyzed	AM Peak
Project Description	Eastman
Intersection	Vail and Eastman
Jurisdiction	Arlington Heights
East/West Street	Eastman Street
North/South Street	Vail Avenue
Peak Hour Factor	0.86

Lanes



Turning Movement Demand Volumes

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume (veh/h)	17	8	9	4	28	13	3	38	12	8	44	4
% Thrus in Shared Lane												

Lane Flow Rate and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			LTR			LTR			LTR		
Flow Rate, v (veh/h)	40			52			62			65		
Percent Heavy Vehicles	2			2			2			2		
Initial Departure Headway, h_d (s)	3.20			3.20			3.20			3.20		
Initial Degree of Utilization, x	0.035			0.047			0.055			0.058		
Final Departure Headway, h_d (s)	4.20			4.09			4.07			4.18		
Final Degree of Utilization, x	0.046			0.059			0.070			0.076		
Move-Up Time, m (s)	2.0			2.0			2.0			2.0		
Service Time, t_s (s)	2.20			2.09			2.07			2.18		

Capacity, Delay and Level of Service

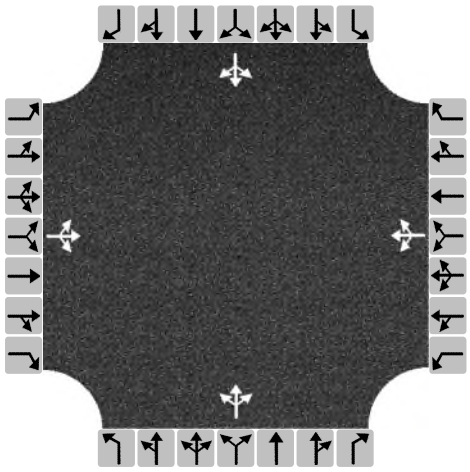
Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			LTR			LTR			LTR		
Flow Rate, v (veh/h)	40			52			62			65		
Capacity (veh/h)	857			880			884			861		
95% Queue Length, Q_{95} (veh)	0.1			0.2			0.2			0.2		
Control Delay (s/veh)	7.4			7.4			7.4			7.5		
Level of Service, LOS	A			A			A			A		
Approach Delay (s/veh) | LOS	7.4	A		7.4	A		7.4	A		7.5	A	
Intersection Delay (s/veh) | LOS	7.4						A					

HCS All-Way Stop Control Report

General and Site Information

Analyst	AG
Agency/Co.	Eriksson
Date Performed	7/11/2023
Analysis Year	2023
Analysis Time Period (hrs)	0.25
Time Analyzed	PM Peak
Project Description	Eastman
Intersection	Vail and Eastman
Jurisdiction	Arlington Heights
East/West Street	Eastman Street
North/South Street	Vail Avenue
Peak Hour Factor	0.86

Lanes



Turning Movement Demand Volumes

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume (veh/h)	5	12	1	18	25	2	1	67	26	18	40	4
% Thrus in Shared Lane												

Lane Flow Rate and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			LTR			LTR			LTR		
Flow Rate, v (veh/h)	21			52			109			72		
Percent Heavy Vehicles	2			2			2			2		
Initial Departure Headway, h_d (s)	3.20			3.20			3.20			3.20		
Initial Degree of Utilization, x	0.019			0.047			0.097			0.064		
Final Departure Headway, h_d (s)	4.40			4.40			4.01			4.23		
Final Degree of Utilization, x	0.026			0.064			0.122			0.085		
Move-Up Time, m (s)	2.0			2.0			2.0			2.0		
Service Time, t_s (s)	2.40			2.40			2.01			2.23		

Capacity, Delay and Level of Service

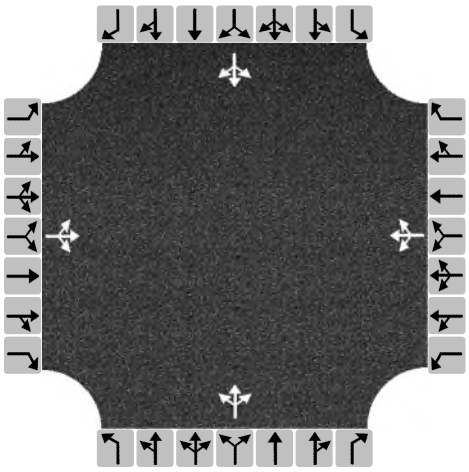
Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			LTR			LTR			LTR		
Flow Rate, v (veh/h)	21			52			109			72		
Capacity (veh/h)	818			819			898			852		
95% Queue Length, Q_{95} (veh)	0.1			0.2			0.4			0.3		
Control Delay (s/veh)	7.5			7.7			7.6			7.6		
Level of Service, LOS	A			A			A			A		
Approach Delay (s/veh) | LOS	7.5	A		7.7	A		7.6	A		7.6	A	
Intersection Delay (s/veh) | LOS	7.6						A					

HCS All-Way Stop Control Report

General and Site Information

Analyst	AG
Agency/Co.	Eriksson
Date Performed	7/11/2023
Analysis Year	2028
Analysis Time Period (hrs)	0.25
Time Analyzed	PM Peak
Project Description	Eastman
Intersection	Vail and Eastman
Jurisdiction	Arlington Heights
East/West Street	Eastman Street
North/South Street	Vail Avenue
Peak Hour Factor	0.86

Lanes



Turning Movement Demand Volumes

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume (veh/h)	13	17	6	18	26	3	7	67	26	21	40	10
% Thrus in Shared Lane												

Lane Flow Rate and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			LTR			LTR			LTR		
Flow Rate, v (veh/h)	42			55			116			83		
Percent Heavy Vehicles	2			2			2			2		
Initial Departure Headway, h_d (s)	3.20			3.20			3.20			3.20		
Initial Degree of Utilization, x	0.037			0.049			0.103			0.073		
Final Departure Headway, h_d (s)	4.40			4.45			4.10			4.24		
Final Degree of Utilization, x	0.051			0.068			0.132			0.097		
Move-Up Time, m (s)	2.0			2.0			2.0			2.0		
Service Time, t_s (s)	2.40			2.45			2.10			2.24		

Capacity, Delay and Level of Service

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			LTR			LTR			LTR		
Flow Rate, v (veh/h)	42			55			116			83		
Capacity (veh/h)	819			809			879			848		
95% Queue Length, Q_{95} (veh)	0.2			0.2			0.5			0.3		
Control Delay (s/veh)	7.6			7.8			7.7			7.7		
Level of Service, LOS	A			A			A			A		
Approach Delay (s/veh) | LOS	7.6	A		7.8	A		7.7	A		7.7	A	
Intersection Delay (s/veh) | LOS	7.7						A					

HCS Two-Way Stop-Control Report

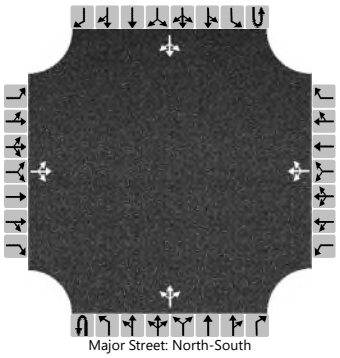
General Information

Analyst	AG
Agency/Co.	Eriksson
Date Performed	7/11/2023
Analysis Year	2022
Time Analyzed	AM Peak
Intersection Orientation	North-South
Project Description	Eastman

Site Information

Intersection	Vail and St James
Jurisdiction	Arlington Heights
East/West Street	St James Street
North/South Street	Vail Avenue
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		0	14	4		3	8	1		7	43	3		6	47	4
Percent Heavy Vehicles (%)		0	0	0		0	0	0		0				0		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.10	6.50	6.20		7.10	6.50	6.20		4.10				4.10		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.50	4.00	3.30		3.50	4.00	3.30		2.20				2.20		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			20				13			8				7		
Capacity, c (veh/h)			799				782			1561				1568		
v/c Ratio			0.03				0.02			0.00				0.00		
95% Queue Length, Q_{95} (veh)			0.1				0.1			0.0				0.0		
Control Delay (s/veh)			9.6				9.7			7.3	0.0	0.0		7.3	0.0	0.0
Level of Service (LOS)			A				A			A	A	A		A	A	A
Approach Delay (s/veh)	9.6				9.7				1.0				0.8			
Approach LOS	A				A				A				A			

HCS Two-Way Stop-Control Report

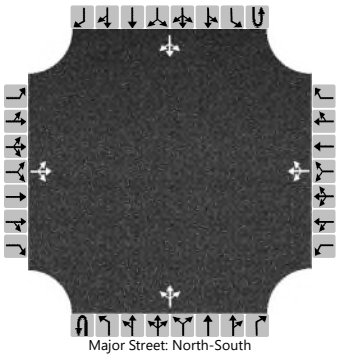
General Information

Analyst	AG
Agency/Co.	Eriksson
Date Performed	7/11/2023
Analysis Year	2028
Time Analyzed	AM Peak
Intersection Orientation	North-South
Project Description	Eastman

Site Information

Intersection	Vail Avenue and St James Street
Jurisdiction	Arlington Heights
East/West Street	St James Street
North/South Street	Vail Avenue
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		0	7	5		3	8	1		9	48	11		4	48	6
Percent Heavy Vehicles (%)		0	0	0		0	0	0		0				0		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.10	6.50	6.20		7.10	6.50	6.20		4.10				4.10		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.50	4.00	3.30		3.50	4.00	3.30		2.20				2.20		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			13				13			10				4		
Capacity, c (veh/h)			832				771			1556				1549		
v/c Ratio			0.02				0.02			0.01				0.00		
95% Queue Length, Q_{95} (veh)			0.0				0.1			0.0				0.0		
Control Delay (s/veh)			9.4				9.7			7.3	0.0	0.0		7.3	0.0	0.0
Level of Service (LOS)			A				A			A	A	A		A	A	A
Approach Delay (s/veh)	9.4				9.7				1.0				0.5			
Approach LOS	A				A				A				A			

HCS Two-Way Stop-Control Report

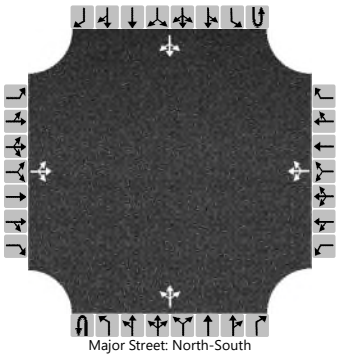
General Information

Analyst	AG
Agency/Co.	Eriksson
Date Performed	7/1/2023
Analysis Year	2022
Time Analyzed	PM Peak
Intersection Orientation	North-South
Project Description	Eastman

Site Information

Intersection	Vail and St James
Jurisdiction	Arlington Heights
East/West Street	St James Street
North/South Street	Vail Avenue
Peak Hour Factor	0.91
Analysis Time Period (hrs)	0.25

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		9	6	7		15	17	2		3	68	3		6	40	5
Percent Heavy Vehicles (%)		0	0	0		0	0	0		0				0		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.10	6.50	6.20		7.10	6.50	6.20		4.10				4.10		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.50	4.00	3.30		3.50	4.00	3.30		2.20				2.20		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			24				37			3				7		
Capacity, c (veh/h)			839				781			1570				1533		
v/c Ratio			0.03				0.05			0.00				0.00		
95% Queue Length, Q_{95} (veh)			0.1				0.2			0.0				0.0		
Control Delay (s/veh)			9.4				9.8			7.3	0.0	0.0		7.4	0.0	0.0
Level of Service (LOS)			A				A			A	A	A		A	A	A
Approach Delay (s/veh)	9.4				9.8				0.3				0.9			
Approach LOS	A				A				A				A			

HCS Two-Way Stop-Control Report

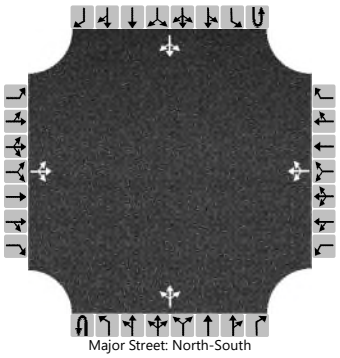
General Information

Analyst	AG
Agency/Co.	Eriksson
Date Performed	7/11/2023
Analysis Year	2028
Time Analyzed	PM Peak
Intersection Orientation	North-South
Project Description	Eastman

Site Information

Intersection	Vail and St James
Jurisdiction	Arlington Heights
East/West Street	St James Street
North/South Street	Vail Avenue
Peak Hour Factor	0.91
Analysis Time Period (hrs)	0.25

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		13	2	4		15	17	2		3	71	9		6	43	5
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			21				37			3				7		
Capacity, c (veh/h)			808				770			1547				1502		
v/c Ratio			0.03				0.05			0.00				0.00		
95% Queue Length, Q_{95} (veh)			0.1				0.2			0.0				0.0		
Control Delay (s/veh)			9.6				9.9			7.3	0.0	0.0		7.4	0.0	0.0
Level of Service (LOS)			A				A			A	A	A		A	A	A
Approach Delay (s/veh)	9.6				9.9				0.3				0.9			
Approach LOS	A				A				A				A			