



**AMES ENGINEERING, INC.**  
Consulting Engineers

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**Traffic Impact Study  
For the Proposed Spaulding Elementary School  
Glen Ellyn School District 41**

**October 27, 2022**

**Prepared by: AMES Engineering, Inc.  
Project Number 2022-08**



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# **Traffic Impact Study For the Proposed Spaulding School (K-5) Glen Ellyn School District**

## **1. Overview**

### **1.1 Summary**

To provide traffic engineering services to the Glen Ellyn School District (District) for a Traffic Impact Study (TIS) for the proposed Spaulding K-5 Elementary School (School) in Milton Township, DuPage County, IL. The proposed site is bound by First Street on the South, 2nd Street on the North, Forest Avenue on the West, and North Park Boulevard on the East. The existing traffic data for the existing traffic condition was acquired by traffic count for peak school hours traffic and the anticipated new school traffic was calculated based on ITE estimates. The suitability of the existing roadway network for the proposed Spaulding School in Milton Township was determined based on the Highway Capacity Software (HCS) level of service (LOC) for 2022 anticipated school traffic and 2027 anticipated school traffic.

### **1.2 Study Purpose and Scope**

The purpose of this traffic impact study (TIS) is to determine the operational impacts of the proposed Spaulding Elementary School on the surrounding roadway network in Milton Township, DuPage County, IL. This study identifies the effects of the proposed development and provides necessary recommendations for roadway improvements.

### **1.3 Background Information**

The proposed development is located between Forest Avenue and between 1st and 2nd Street and will consist of 400 students in a K-5 Elementary School when it opens and 450 students within five years. Access to the proposed development will be provided via 1st or/and 2nd Street from Glen Ellyn Road. **See Figure 1.2.**

### **1.4 Existing Traffic/Traffic Forecast/New School Traffic**

Existing 2022 traffic is based on data collected in October 2022 for this study. Traffic from 2022 is forecast to grow at 2% and school traffic is anticipated to grow from 400 to 450 students until 2027. New school traffic based on ITE Trip Generation 11<sup>th</sup> Edition for Land Use 520 based on 400 students for 2022 and 450 students for 2027.

### **1.5 Capacity Analysis**

Capacity analyses have been performed for both study intersections which are 1<sup>st</sup> Street and Glen Ellyn Road and 2<sup>nd</sup> Street and Glen Ellyn Road. The capacity analysis of two-way-stop-controlled intersections was performed using *Highway Capacity Software* (Version 7). All analyses were reported using the methodology outlined in the *Highway Capacity Manual*. The operating conditions of intersections are acceptable if found to operate at LOS D or better for the overall intersection, with no approach operating worse than LOS E. Capacity improvements are identified for the locations not meeting the criteria.

### **1.6 Findings and Recommendations**

The following intersection improvements are recommended to achieve an acceptable level of service and to facilitate safe ingress and egress to/from the proposed development:

#### Existing Traffic 2022

No improvements are required at any of the study intersections.

# Traffic Impact Study For the Proposed Spaulding School (K-5) Glen Ellyn School District

## Existing/New School Traffic: 2022

No improvements are required at any of the study intersections.

## Proposed/New School Traffic: 2027

2nd Street and Glen Ellyn Road (all proposed school traffic utilizing 2nd Street)

Separate WB left turn lane added

## 2. Study Purpose and Scope

### 2.1 Purpose:

The purpose of this traffic impact study (TIS) is to determine the operational impacts of the proposed Spaulding Elementary School on the surrounding roadway network in Milton Township, DuPage County, IL. The proposed development will consist of an Elementary School. This study identifies the effects of the proposed development and provides necessary recommendations for roadway improvements. The study area is shown in **Figure 1.1** and **Figure 1.2**.

### 2.2 Scope of Work:

The study area as shown in **Figure 1.2** is bound by Glen Ellyn Road and 2nd Street, Glen Ellyn Road and 1st Street. The study intersections are listed below in **Table 1.2**.

**Table 1.1 – Study Intersections**

No.	Intersection Name
1	Glen Ellyn Road and 2nd Street
2	Glen Ellyn Road and 1st Street

The capacity analysis is performed for the scenarios listed in **Table 1.2**. The study scenarios focus on traffic volumes for the existing year 2022, existing/new proposed school traffic for the year 2022, and proposed school traffic for the year 2027.

**Table 1.2 – Study Scenarios**

Scenario	Lane Configuration	Year
1	AM-School Peak-Hour Existing Traffic	2022
2	PM-School Peak-Hour Existing Traffic	2022
3	AM-School Hour Peak-Existing Plus New School Traffic	2022
4	PM-School Hour Peak-Existing Traffic Plus New School Traffic	2022
5	AM-School Peak Hour Traffic Plus New Anticipated School Traffic Plus Background Growth Traffic	2027
6	PM-School Peak Hour Traffic Plus New Anticipated School Traffic Plus Background Growth Traffic	2027

Traffic Impact Study For the Proposed Spaulding School (K-5) Glen Ellyn School District

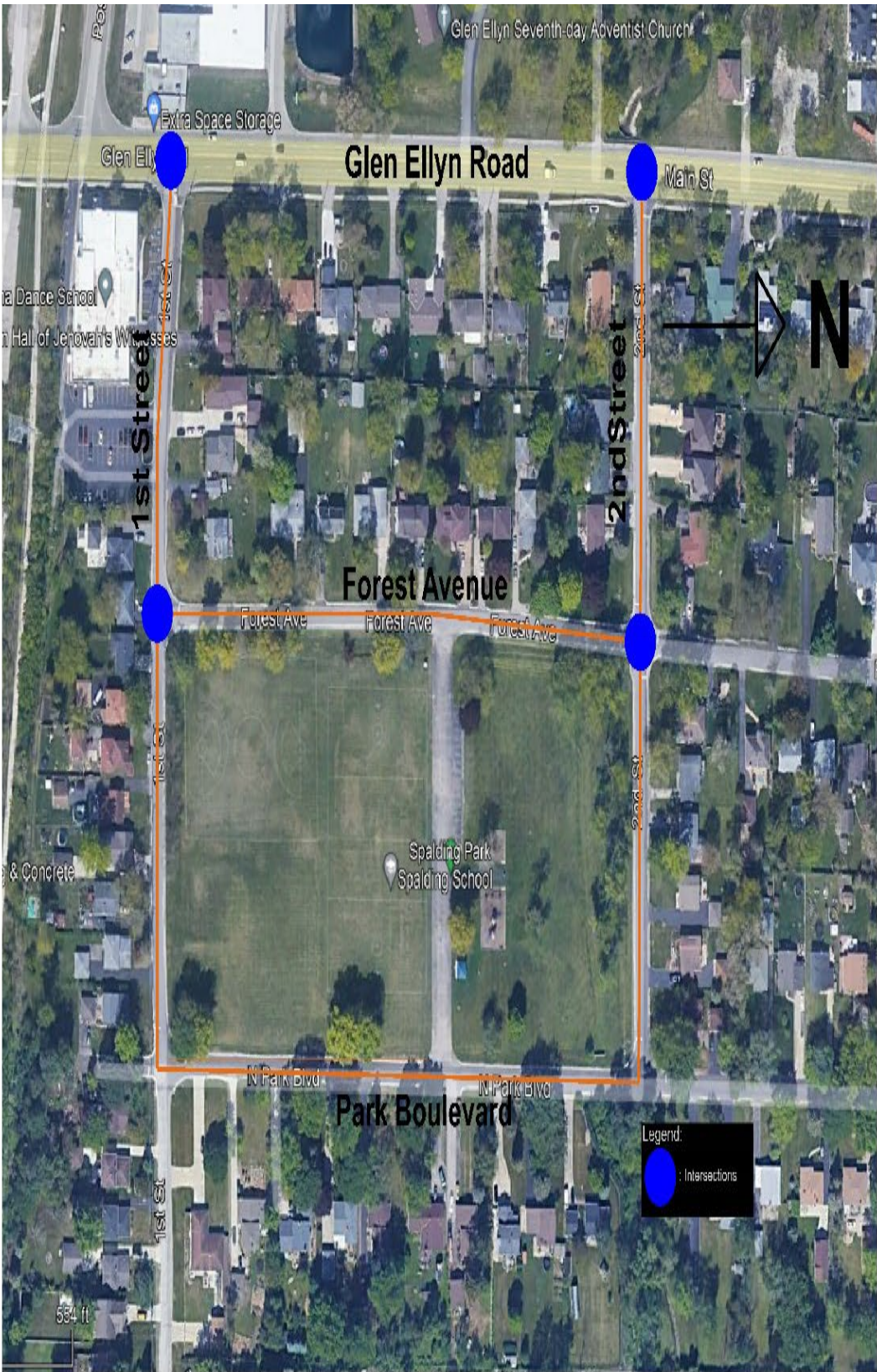


Figure 1.1 – Study Area Before Development



**Traffic Impact Study For the Proposed Spaulding School (K-5) Glen Ellyn School District**



**Figure 1.2 – Study Area for Development**

## **Traffic Impact Study For the Proposed Spaulding School (K-5) Glen Ellyn School District**

### **3. Background Information**

#### **3.1 Surrounding Roadway Network:**

The sections below document the current roadway conditions of the streets within the study area. The existing lane configuration and proposed school entrances are shown in **Figure 2.1** and **Figure 2.2** respectively.

##### **a. Glen Ellyn Road and 2nd Street:**

2nd Street is a two-way two-lane local road in 24' width that has a posted speed limit of 25 mph. 2nd Street intersects Forest Avenue at the northwest corner of the school site which is a four-way-stop-controlled intersection. 2nd Street intersects Glen Ellyn Road one block west of Forest Avenue. Glen Ellyn Road is a Minor Arterial two-way four-lane road with a striped median and a posted speed limit of 40 mph. 2<sup>nd</sup> Street is under the jurisdiction of the Milton Township Highway Department (MTHD). Glen Ellyn Road is under the jurisdiction of the DuPage County Department of Transportation (DuDOT).

##### **b. Glen Ellyn Road and 1st Street:**

1st Street is a two-way two-lane local road in 24' width that has a posted speed limit of 25 mph. 1st Street intersects Forest Avenue at the southwest corner of the school site which is a four-way-stop-controlled intersection. 1st Street intersects Glen Ellyn Road one block west of Forest Avenue. Glen Ellyn Road is a Minor Arterial two-way four-lane road with a striped median and a posted speed limit of 40 mph. 1st Street is under the jurisdiction of the Milton Township Highway Department (MTHD).

##### **c. Glen Ellyn Road**

Glen Ellyn Road intersects with the Great Western Trail south of its intersection with 1st Street. No signalized intersections on Glen Ellyn Road exist close enough to the study area to have an operational effect or queueing that would affect this study. Glen Ellyn Road intersects with IL 64/North Avenue and Saint Charles Road to the north and south, respectively. Both of these are signalized intersections and are arterials roadways.

#### **3.2 Proposed Development**

The proposed development is located between Forest Avenue and between 1st and 2nd Street and will consist of 400 students in 2022 and anticipated growth to 450 students by 2027 for a K-5 Elementary School. Access to the proposed development will be provided via 1st or 2nd Street from Glen Ellyn Road.

### **4. Traffic Forecast**

Traffic has been forecast utilizing existing 2022 traffic volumes based on data collected in October 2022 and adding ITE trip generation 11<sup>th</sup> Edition to calculate new school traffic for 2022. 2027 traffic volume includes anticipated school traffic growth from 400 to 450 students annual linear background traffic growth of (2.0%) from the existing 2022 traffic volume.

## **Traffic Impact Study For the Proposed Spaulding School (K-5) Glen Ellyn School District**

### **4.1 Existing Traffic Data**

The existing traffic data for the existing traffic condition was acquired by a traffic count for peak school hours traffic and the anticipated new school traffic was calculated based on ITE estimates. Turning movement counts were collected at each of the existing study intersections (those listed in **Table 1.2**) for Glen Ellyn Road and 2nd Street (GER/2nd) and Glen Ellyn Road and 1st Street (GER/1st). These volumes are graphically illustrated in **Appendix C**. The raw data from the traffic counts are provided in **Appendix B**.

### **4.2 Background Traffic Growth**

Traffic has been forecast utilizing existing 2022 traffic data with an annual linear background traffic growth rate of 2.0.

### **4.3 Trip Generation**

The Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11<sup>th</sup> Edition* was used to calculate the generated trips for the proposed elementary school. The size of each land use is based on the latest site plan (as shown in **Appendix B**) and input from the School District. A summary of the AM and PM peak hour generator per student is provided in **Appendix A**.

### **4.4 Trip Distribution and Assignment**

Trip distribution percentages were calculated based on AM and PM peak hour generator for school traffic entering and exiting GER/1st and GER/2nd Streets including existing traffic. These percentages take into account the proposed school boundaries. The trip distribution percentages are provided in **Appendix A** and are graphically illustrated in **Appendix C**.

### **4.5 Total Traffic Growth**

After applying trip distribution for the elementary school to the existing traffic volume data from October 2022 the traffic volume for school traffic including existing traffic was calculated for GER/1st and GER/2nd Street for the year 2022. Traffic has been forecast utilizing existing 2022 traffic data with an annual linear background traffic growth rate of (2.0%) and an increase in students from 400 to 450 to the 2022 Existing traffic to obtain 2027 traffic volumes. The 2022 Existing/New School Traffic volumes for this scenario and for the horizon year 2027 total traffic volumes are shown in **Appendix B**.



## Traffic Impact Study For the Proposed Spaulding School (K-5) Glen Ellyn School District

### 5. Capacity Analysis

A capacity analysis has been performed for each intersection. The capacity analysis of stop-controlled intersections was performed **Highway Capacity Software (Version 7)**. All analyses were reported using the methodology outlined in the *Highway Capacity Manual* (TRB 2010). The standard parameter used to evaluate traffic operating conditions is referred to as the level of service (LOS). There are six LOS (A through F) that relate to driving conditions from best to worst, respectively. LOS for signalized and unsignalized (stop-control and roundabout) intersections is defined in terms of control delay per vehicle, which is a direct correlation to driver discomfort, frustration, fuel consumption, and lost travel time. **Table 5.1** provides the LOS criteria as defined in the *Highway Capacity Manual* (HCS).

LOS	Signalized Intersection Control Delay per Vehicle (seconds)	Unsignalized Intersection Control Delay per Vehicle (seconds)
A	≤ 10	≤ 10
B	> 10 and ≤ 20	> 10 and ≤ 15
C	> 20 and ≤ 35	> 15 and ≤ 25
D	> 35 and ≤ 55	> 25 and ≤ 35
E	> 55 and ≤ 80	> 35 and ≤ 50
F	> 80	> 50

**Table 5.1**

The operating conditions of intersections were considered to be acceptable if found to operate at LOS D or better for the overall intersection, with no approach operating worse than LOS E. Capacity improvements are identified for the locations not meeting the criteria.

With existing roadway conditions for GER/1st and GER/2nd Streets and no deficiencies were identified for the capacity analysis for existing traffic for 2022, for Existing Traffic and New School Traffic for 2022, but for the horizon year 2027 for Proposed Traffic and anticipated School Traffic had an unacceptable LOS at 2nd Street. The results of the capacity analysis are shown in **Appendix D**.

#### 5.1 Capacity Analysis for Glen Ellyn Road and 2nd Street:

The intersection of Glen Ellyn Road and 2nd Street is currently unsignalized with one through and one through/shared left turn lane on the southbound approach, one through and one through/shared right turn lane on the northbound approach, and one shared turn lane on the westbound approach with stop control on the westbound approach. Based on the capacity analysis results, the intersection is anticipated to operate with the addition of New School Traffic overall at LOS C or better under all traffic volume scenarios, except for the horizon year 2027 for Proposed Traffic volume and anticipated school traffic growth from 400 to 450 students. Capacity analysis has a LOS E under existing intersection geometrics. Adding a separate left turn lane improves the LOS to D.

## **Traffic Impact Study For the Proposed Spaulding School (K-5) Glen Ellyn School District**

### **5.2 Capacity Analysis for Glen Ellyn Road and 1st Street:**

The intersection of Glen Ellyn Road and 1st Street is currently unsignalized with one through and one through/shared left turn lane on the southbound approach, one through and one through/shared right turn lane on the northbound approach, and one shared turn lane on the westbound approach with stop control on the westbound approach. Based on the capacity analysis results, the intersection is anticipated to operate with the addition of New School Traffic overall at LOS C or better under all traffic volume scenarios, under existing intersection geometrics.

### **6. Findings and Recommendation**

No recommendations are required for Glen Ellyn Road and 1st Street to achieve an acceptable level of service during AM and PM peak hour to facilitate safe ingress and egress to/from the proposed K-5 Elementary School development as the intersection operates at LOS D or better. A separate WB left turn and right turn lane is recommended for Glen Ellyn Road and 2nd Street based on the annual linear background traffic growth rate of (2.0%) and an increase in students from 400 to 450 for the horizon year 2027 for this intersection to operate at LOS D or better.

## **Appendix A: Trip Generation**

# Elementary School (520)

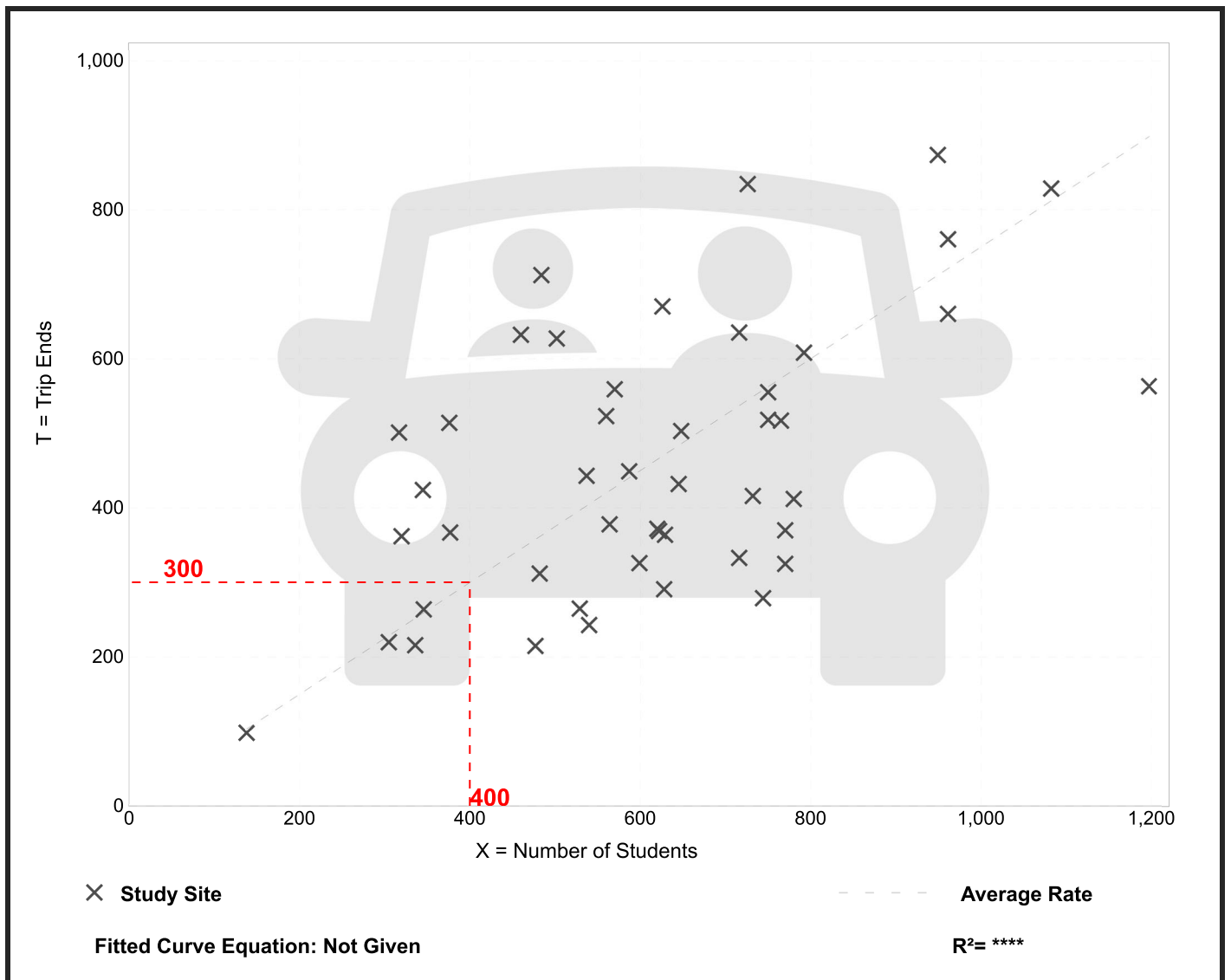
**Vehicle Trip Ends vs: Students**  
**On a: Weekday,**  
**AM Peak Hour of Generator**

**Setting/Location: General Urban/Suburban**  
 Number of Studies: 46  
 Avg. Num. of Students: 616  
 Directional Distribution: 54% entering, 46% exiting

## Vehicle Trip Generation per Student

Average Rate	Range of Rates	Standard Deviation
0.75	0.38 - 1.58	0.27

## Data Plot and Equation





# Elementary School (520)

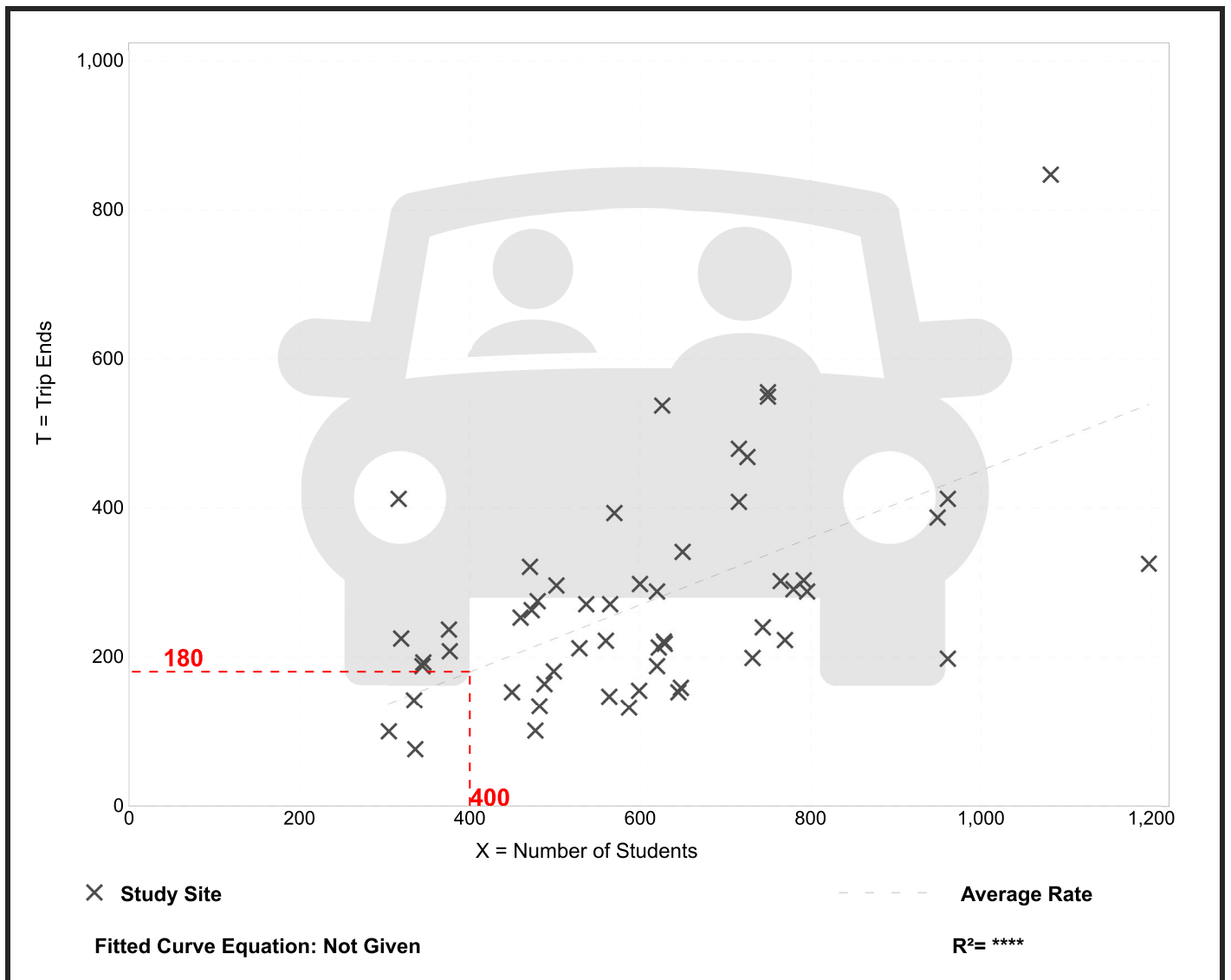
Vehicle Trip Ends vs: Students  
On a: Weekday,  
PM Peak Hour of Generator

Setting/Location: General Urban/Suburban  
Number of Studies: 54  
Avg. Num. of Students: 608  
Directional Distribution: 46% entering, 54% exiting

## Vehicle Trip Generation per Student

Average Rate	Range of Rates	Standard Deviation
0.45	0.21 - 1.30	0.19

## Data Plot and Equation



# Elementary School (520)

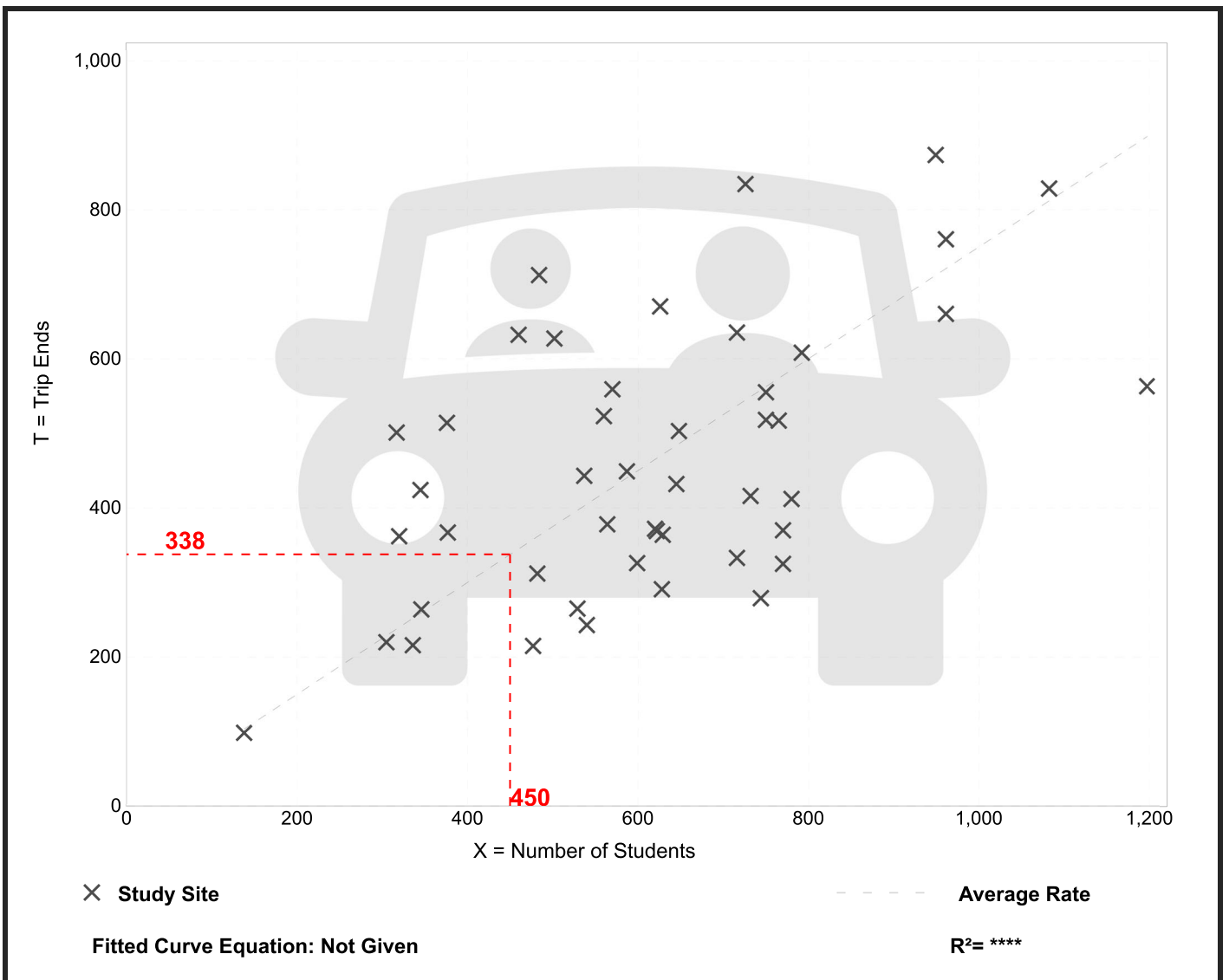
**Vehicle Trip Ends vs: Students**  
**On a: Weekday,**  
**AM Peak Hour of Generator**

**Setting/Location: General Urban/Suburban**  
 Number of Studies: 46  
 Avg. Num. of Students: 616  
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0.75	0.38 - 1.58	0.27

## Data Plot and Equation



# Elementary School (520)

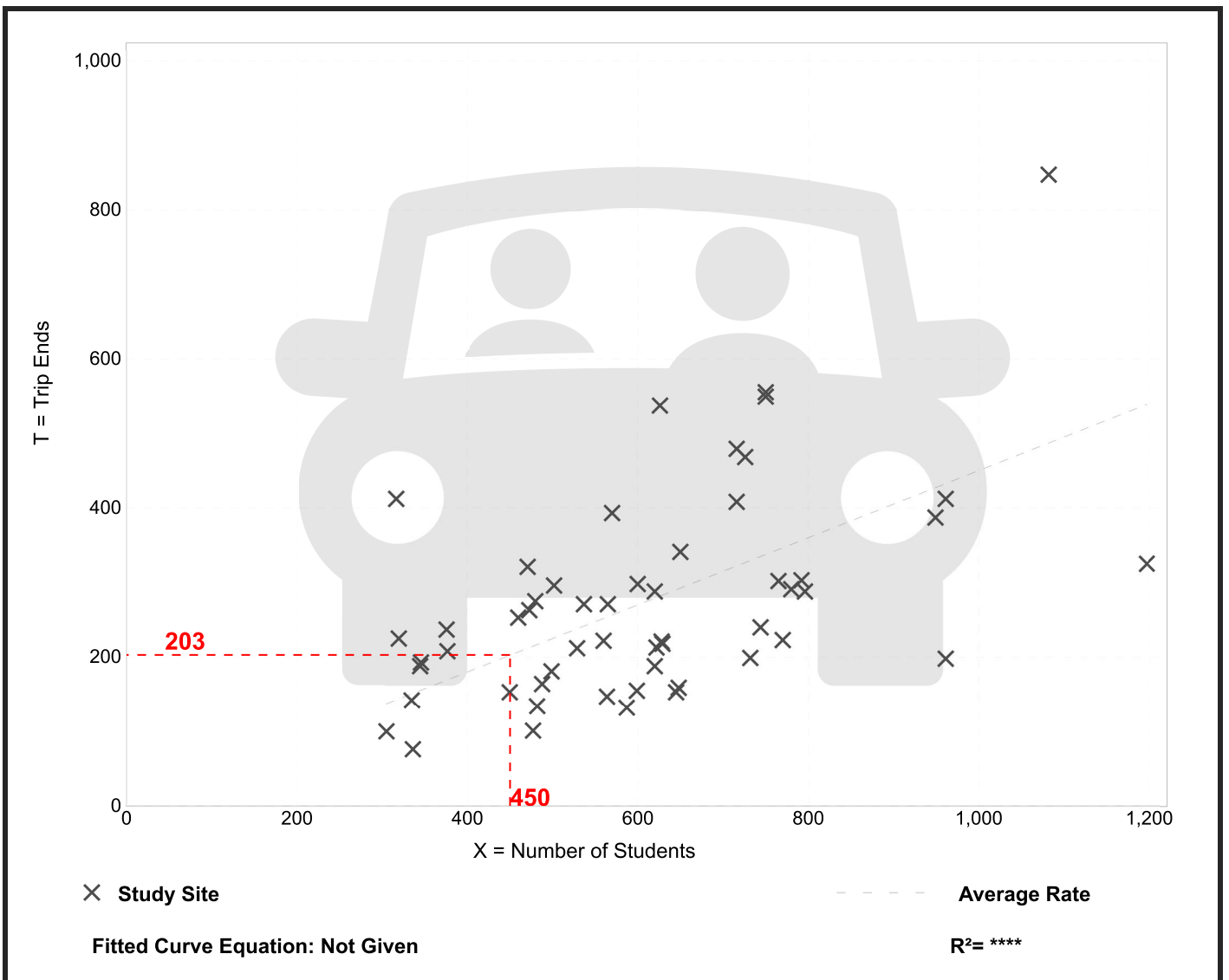
Vehicle Trip Ends vs: Students  
On a: Weekday,  
PM Peak Hour of Generator

Setting/Location: General Urban/Suburban  
Number of Studies: 54  
Avg. Num. of Students: 608  
Directional Distribution: 46% entering, 54% exiting

## Vehicle Trip Generation per Student

Average Rate	Range of Rates	Standard Deviation
0.45	0.21 - 1.30	0.19

## Data Plot and Equation



# Traffic Impact Study For the Proposed Spaulding School (K-5) Glen Ellyn School District

## Appendix B: Traffic Data

INTERSECTION: Glen Ellyn Road and 2nd street

DATA DATE: 10/5/2022 DURATION: 7:30:00 AM TO 8:30 AM

VEHICLES - TOTAL

AM Peak

	Existing Traffic Volume 2022					
	2nd street		Glen Ellyn Road			
	WB		NB		SB	
	LEFT	RIGHT	THRU	RIGHT	LEFT	THRU
TIME BEGIN	←	→	↑	→	←	↑
7:30 AM	14	1	127	2	1	151
7:45 AM	10	4	99	3	2	169
8:00 AM	29	2	87	5	2	131
8:15 AM	20	3	103	12	0	126

2022 PEAK HOUR VOLUMES						
Total Traffic Growth	73	10	416	22	5	577

Based on 400

Students

Trip Distribution and Assignment

Entering Intersection 300 0.5 0.54 81

Exiting Intersection 300 0.5 0.46 69

2022 PEAK HOUR VOLUMES INCLUDING SCHOOL TRAFFIC						
Total Traffic Growth	142	79	416	103	86	577

Based on 450 Students

Trip Distribution and Assignment

Entering Intersection 337.5 0.5 0.54 91

Exiting Intersection 337.5 0.5 0.46 78

Annual Linear Background Traffic Growth Rate of (2.0%)

2027 PEAK HOUR VOLUMES INCLUDING ANTICIPATED SCHOOL TRAFFIC						
Total	158	89	458	115	97	635



# Traffic Impact Study For the Proposed Spaulding School (K-5) Glen Ellyn School District

INTERSECTION:

Glen Ellyn Road and 2nd street

DATA DATE:

10/5/2022

DURATION:

3:30:00 PM TO 4:30 PM

VEHICLES - TOTAL

PM Peak

	Existing Traffic Volume 2022					
	2nd street		Glen Ellyn Road			
	WB		NB		SB	
	LEFT	RIGHT	THRU	RIGHT	LEFT	THRU
TIME BEGIN	←	→	↑	→	←	↑
3:30 PM	13	3	122	10	0	141
3:45 PM	5	6	171	11	2	111
4:00 PM	7	8	140	8	1	158
4:15 PM	15	8	134	14	3	163

2022 PEAK HOUR VOLUMES						
Total Traffic Growth	40	25	567	43	6	573

Based on 400

Students

Trip Distribution and Assignment

Entering Intersection 180 0.5 0.54 48.6

Exiting Intersection 180 0.5 0.46 41.4

2022 PEAK HOUR VOLUMES INCLUDING SCHOOL TRAFFIC						
Total Traffic Growth	81	66	567	92	55	573

Based on 450 Students

Trip Distribution and Assignment

Entering Intersection 202.5 0.5 0.54 55

Exiting Intersection 202.5 0.5 0.46 47

Annual Linear Background Traffic Growth Rate of (2.0%)

2027 PEAK HOUR VOLUMES INCLUDING ANTICIPATED SCHOOL TRAFFIC						
Total	91	75	624	102	62	630

# Traffic Impact Study For the Proposed Spaulding School (K-5) Glen Ellyn School District

INTERSECTION: Glen Ellyn Road and 1st street

DATA DATE: 10/6/2022 DURATION: 7:30:00 AM TO 8:30 AM

VEHICLES - TOTAL

AM Peak

	Existing Traffic Volume 2022					
	1st street		Glen Ellyn Road			
	WB		NB		SB	
	LEFT	RIGHT	THRU	RIGHT	LEFT	THRU
TIME BEGIN	←	→	↑	→	←	↑
7:30 AM	5	3	121	7	0	184
7:45 AM	7	0	113	7	1	195
8:00 AM	4	1	74	6	1	166
8:15 AM	5	1	96	9	0	162

2022 PEAK HOUR VOLUMES						
Total Traffic Growth	21	5	404	29	2	707

Based on 400

Students

Trip Distribution and Assignment

Entering Intersection 300 0.5 0.54 81

Exiting Intersection 300 0.5 0.46 69

2022 PEAK HOUR VOLUMES INCLUDING SCHOOL TRAFFIC						
Total Traffic Growth	90	74	404	110	83	707

Trip Distribution an

Based on 450 Students

Assignment

Entering Intersection 337.5 0.5 0.54 91

Exiting Intersection 337.5 0.5 0.46 78

Annual Linear Background Traffic Growth Rate of(2.0%)

2027 PEAK HOUR VOLUMES INCLUDING ANTICIPATED SCHOOL TRAFFIC						
Total	101	84	444	123	93	778

# Traffic Impact Study For the Proposed Spaulding School (K-5) Glen Ellyn School District

INTERSECTION:

Glen Ellyn Road and 1st street

DATA DATE:

10/6/2022

DURATION:

3:30:00 PM TO 4:30 PM

VEHICLES - TOTAL

PM Peak

	Existing Traffic Volume 2022					
	1st street		Glen Ellyn Road			
	WB		NB		SB	
	LEFT	RIGHT	THRU	RIGHT	LEFT	THRU
TIME BEGIN	←	→	↑	→	←	↑
3:30 PM	5	3	131	17	1	210
3:45 PM	8	3	160	19	1	182
4:00 PM	7	3	147	14	5	171
4:15 PM	3	6	140	9	2	179

2022 PEAK HOUR VOLUMES						
Total Traffic Growth	23	15	578	59	9	742

Based on 400

Students

Trip Distribution and Assignment

Entering Intersection 180 0.5 0.54 48.6

Exiting Intersection 180 0.5 0.46 41.4

2022 PEAK HOUR VOLUMES INCLUDING SCHOOL TRAFFIC						
Total Traffic Growth	64	56	578	108	58	742

Based on 450 Students

Trip Distribution and Assignment

Entering Intersection 202.5 0.5 0.54 55

Exiting Intersection 202.5 0.5 0.46 47

Annual Linear Background Traffic Growth Rate of (2.0%)

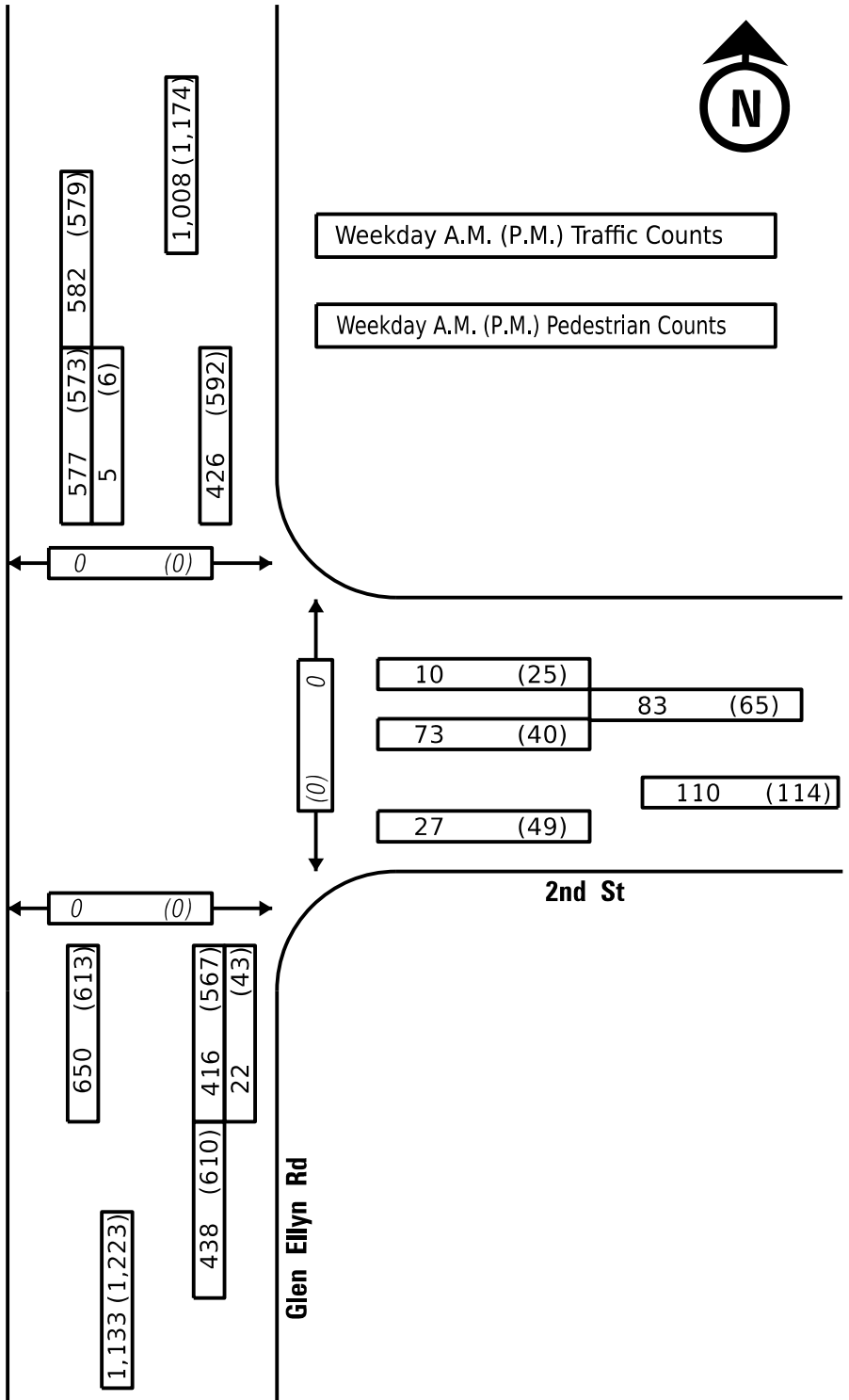
2027 PEAK HOUR VOLUMES INCLUDING ANTICIPATED SCHOOL TRAFFIC						
Total	72	64	636	120	65	816

**Appendix C: Trip Distribution Graphically Illustrated**





Glen Ellyn Rd



**Vehicle Traffic Peak Hours:**

AM 7:30 A.M. to 8:30 A.M.  
PM 3:30 P.M. to 4:30 P.M.

**Count Day/Date:**

Wednesday, October 5, 2022

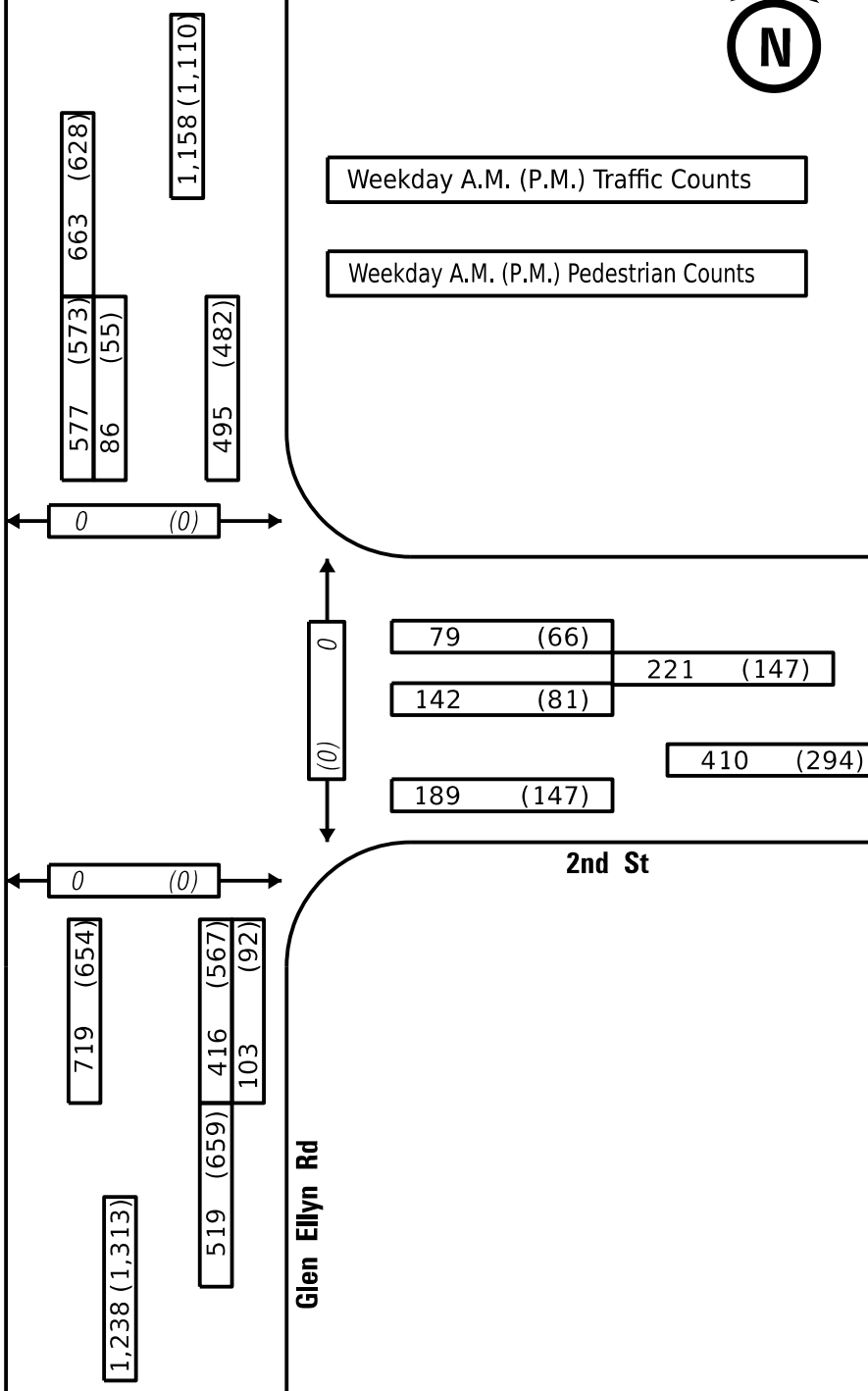
Glen Ellyn Rd and 2nd St

**2022 Existing Peak Hour Traffic**

Glen Ellyn School District  
AMES Project No. 2022-08



Glen Ellyn Rd



**Vehicle Traffic Peak Hours:**

AM 7:30 A.M. to 8:30 A.M.  
PM 3:30 P.M. to 4:30 P.M.

**Count Day/Date:**

Wednesday, October 5, 2022

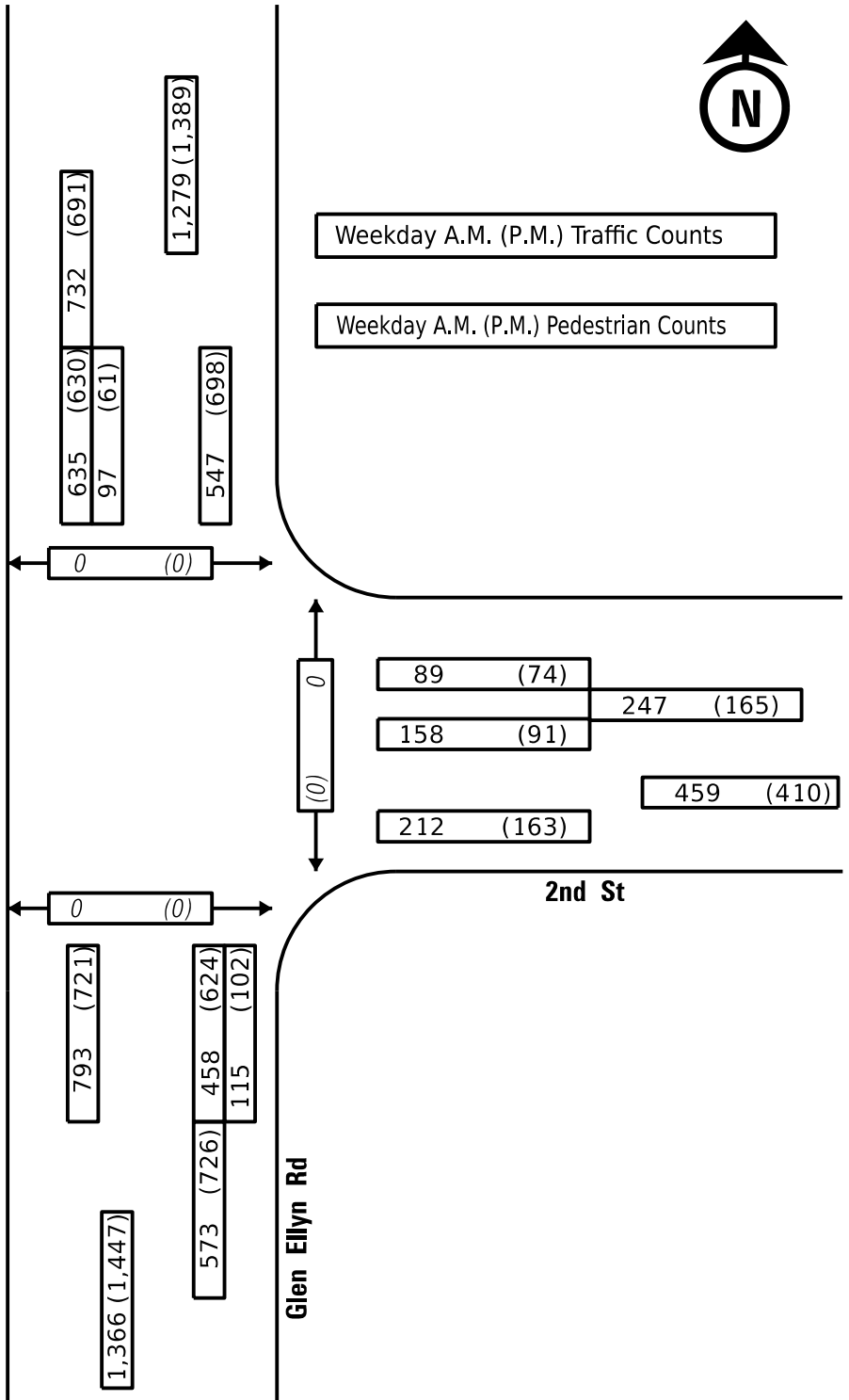
Glen Ellyn Rd and 2nd St

**2022 Estimated Post School Opening  
Peak Hour Traffic**

Glen Ellyn School District  
AMES Project No. 2022-08



Glen Ellyn Rd



**Vehicle Traffic Peak Hours:**

AM 7:30 A.M. to 8:30 A.M.  
PM 3:30 P.M. to 4:30 P.M.

**Count Day/Date:**

Wednesday, October 5, 2022

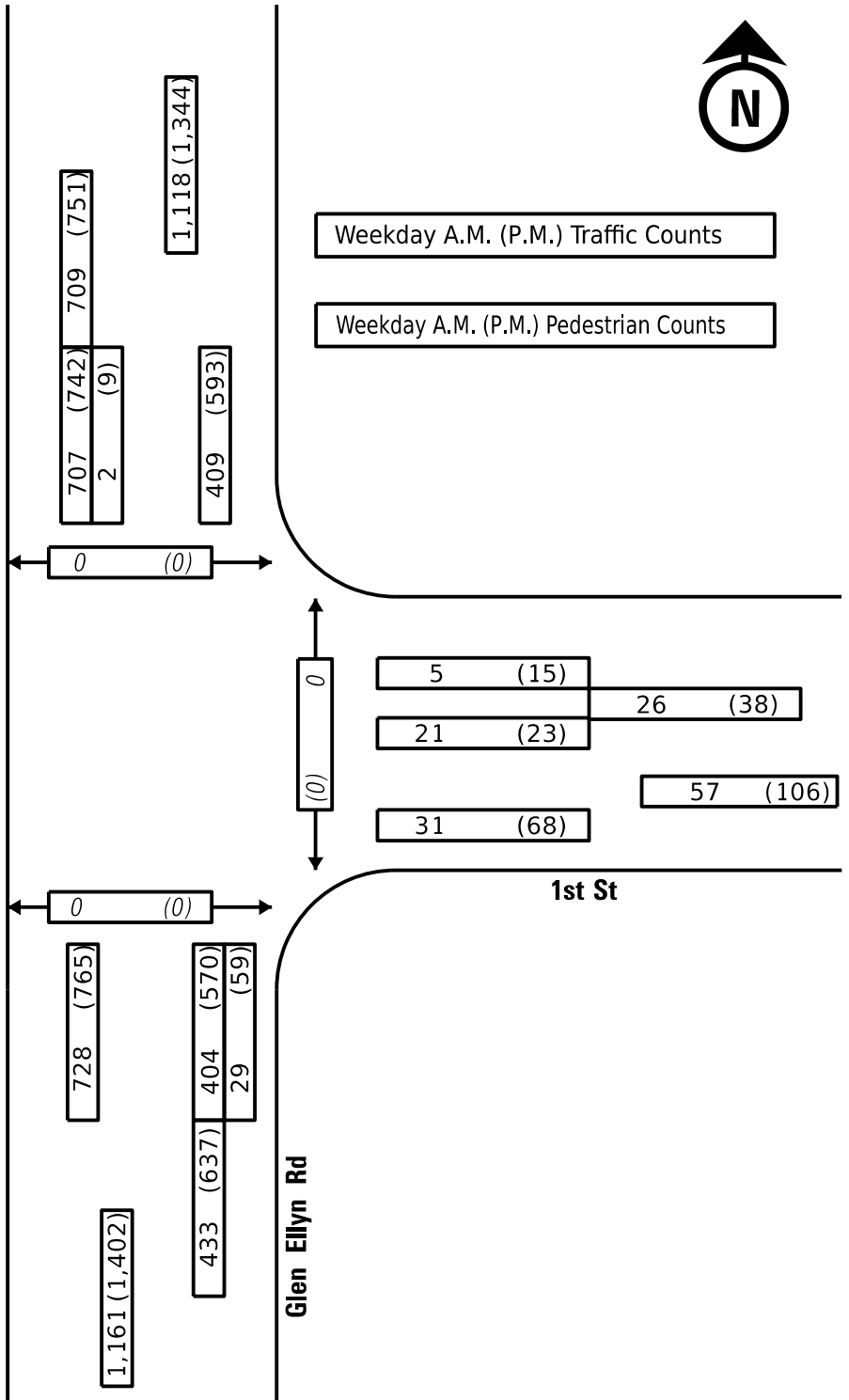
Glen Ellyn Rd and 2nd St

**2027 Estimated Post School Opening  
Peak Hour Traffic**

Glen Ellyn School District  
AMES Project No. 2022-08



Glen Ellyn Rd



**Vehicle Traffic Peak Hours:**

AM 7:30 A.M. to 8:30 A.M.  
PM 3:30 P.M. to 4:30 P.M.

**Count Day/Date:**

Tuesday, October 4, 2022

Glen Ellyn Rd and 1st St

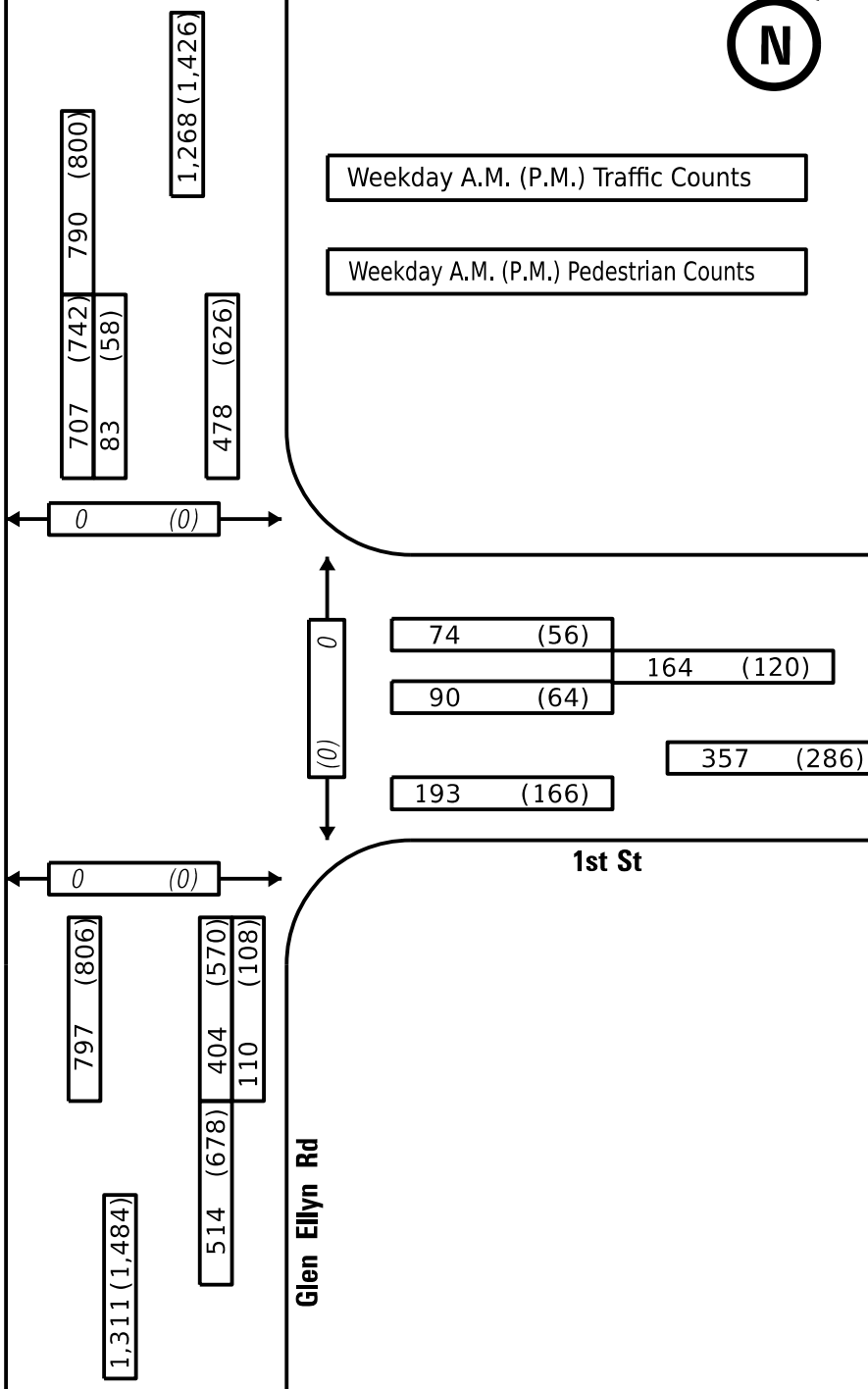
**2022 Existing Peak Hour Traffic**

Glen Ellyn School District  
AMES Project No. 2022-08





Glen Ellyn Rd



**Vehicle Traffic Peak Hours:**

AM 7:30 A.M. to 8:30 A.M.  
PM 3:30 P.M. to 4:30 P.M.

**Count Day/Date:**

Tuesday, October 4, 2022

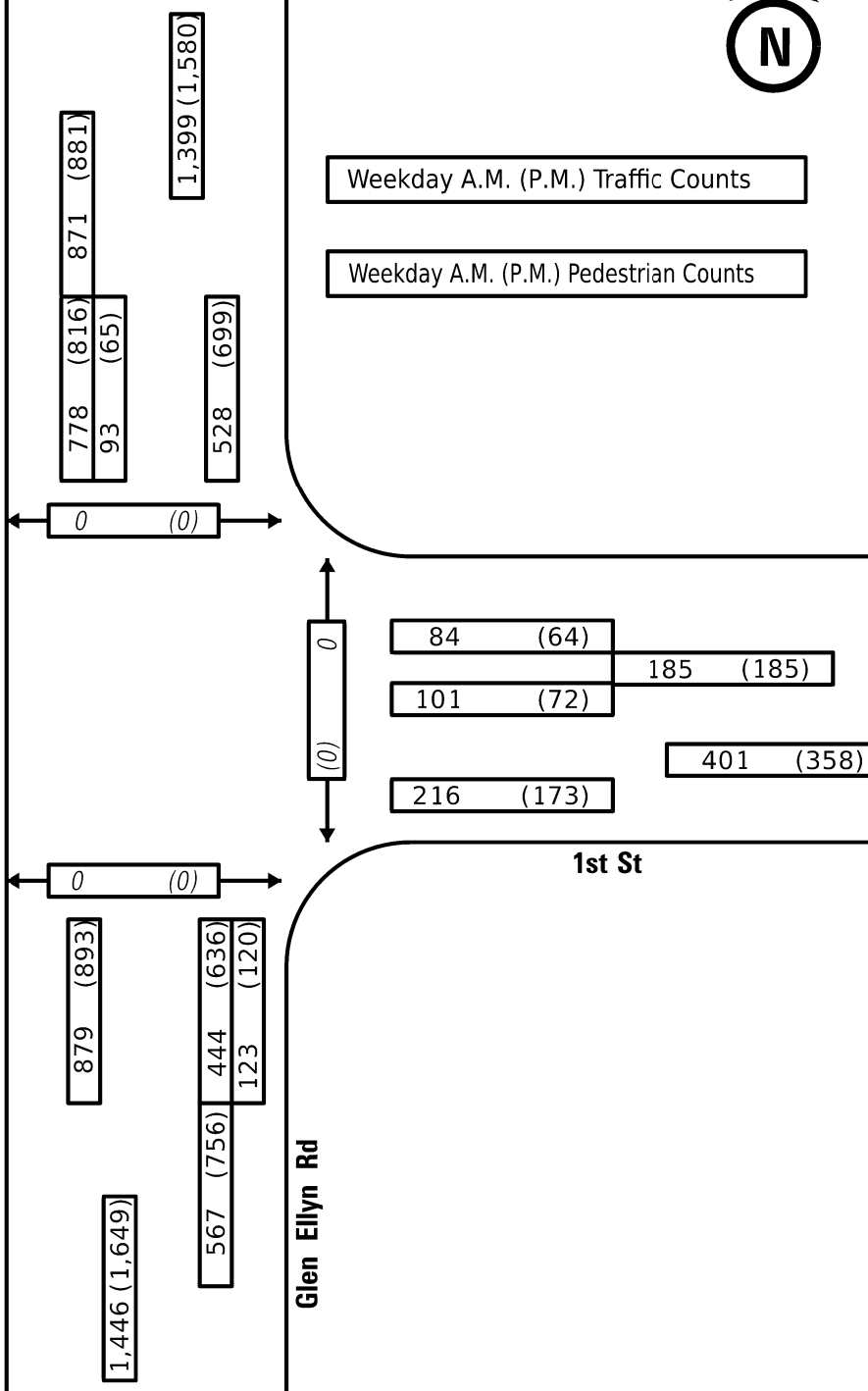
Glen Ellyn Rd and 1st St

**2022 Estimated Post School Opening  
Peak Hour Traffic**

Glen Ellyn School District  
AMES Project No. 2022-08



Glen Ellyn Rd



**Vehicle Traffic Peak Hours:**

AM 7:30 A.M. to 8:30 A.M.  
PM 3:30 P.M. to 4:30 P.M.

**Count Day/Date:**

Tuesday, October 4, 2022

Glen Ellyn Rd and 1st St

**2027 Estimated Post School Opening  
Peak Hour Traffic**

Glen Ellyn School District  
AMES Project No. 2022-08

## **Appendix D: Capacity Analysis**

# HCS7 Two-Way Stop-Control Report

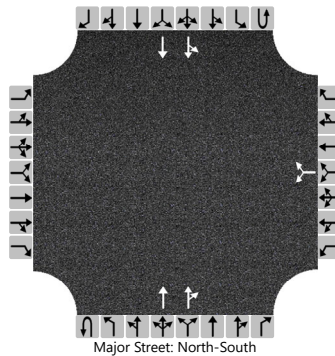
## General Information

Analyst	Moahmmed Abdul Azeem
Agency/Co.	Glen Ellyn SD 41
Date Performed	10/14/2022
Analysis Year	2022
Time Analyzed	7:30 to 8:30 AM
Intersection Orientation	North-South
Project Description	TIS For Spaulding School Existing Traffic 2022

## Site Information

Intersection	Glen Ellyn Road/ 2nd St
Jurisdiction	DuDOT/MTHD
East/West Street	2nd Street
North/South Street	Glen Ellyn Road/Main St
Peak Hour Factor	0.95
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		0	1	0	0	0	2	0	0	0	2	0
Configuration							LR				T	TR		LT	T	
Volume (veh/h)						73		10			416	22		5	577	
Percent Heavy Vehicles (%)						6		4						4		
Proportion Time Blocked																
Percent Grade (%)					2											
Right Turn Channelized																
Median Type   Storage	Left Only								1							

## Critical and Follow-up Headways

Base Critical Headway (sec)						7.5		6.9						4.1		
Critical Headway (sec)						7.31		7.18						4.17		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.56		3.34						2.24		

## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						87								5		
Capacity, c (veh/h)						443								1085		
v/c Ratio						0.20								0.00		
95% Queue Length, Q <sub>95</sub> (veh)						0.7								0.0		
Control Delay (s/veh)						15.1								8.3		
Level of Service (LOS)						C								A		
Approach Delay (s/veh)					15.1								0.1			
Approach LOS					C											

# HCS7 Two-Way Stop-Control Report

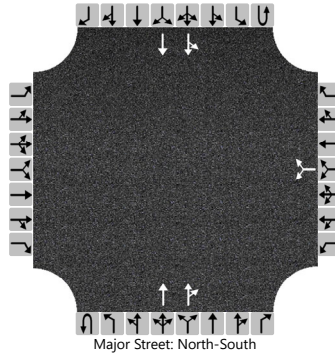
## General Information

Analyst	Moahmmed Abdul Azeem
Agency/Co.	Glen Ellyn SD 41
Date Performed	10/14/2022
Analysis Year	2022
Time Analyzed	3:30 to 4:30 PM
Intersection Orientation	North-South
Project Description	TIS For Spaulding School Existing Traffic 2022

## Site Information

Intersection	Glen Ellyn Road/ 2nd St
Jurisdiction	DuDOT/MTHD
East/West Street	2nd Street
North/South Street	Glen Ellyn Road/Main St
Peak Hour Factor	0.95
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		0	1	0	0	0	2	0	0	0	2	0
Configuration							LR				T	TR		LT	T	
Volume (veh/h)						40		25			567	43		6	573	
Percent Heavy Vehicles (%)						6		4						4		
Proportion Time Blocked																
Percent Grade (%)					2											
Right Turn Channelized																
Median Type   Storage	Left Only								1							

## Critical and Follow-up Headways

Base Critical Headway (sec)						7.5		6.9						4.1		
Critical Headway (sec)						7.31		7.18						4.17		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.56		3.34						2.24		

## Delay, Queue Length, and Level of Service

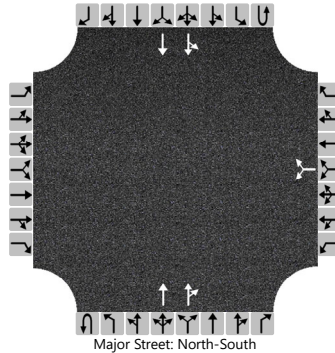
Flow Rate, v (veh/h)						68								6		
Capacity, c (veh/h)						424								928		
v/c Ratio						0.16								0.01		
95% Queue Length, Q <sub>95</sub> (veh)						0.6								0.0		
Control Delay (s/veh)						15.1								8.9		
Level of Service (LOS)						C								A		
Approach Delay (s/veh)					15.1								0.1			
Approach LOS					C											

# HCS7 Two-Way Stop-Control Report

## General Information

Analyst	Moahmmed Abdul Azeem	Intersection	Glen Ellyn Road/ 2nd St
Agency/Co.	Glen Ellyn SD 41	Jurisdiction	DuDOT/MTHD
Date Performed	10/14/2022	East/West Street	2nd Street
Analysis Year	2022	North/South Street	Glen Ellyn Road/Main St
Time Analyzed	7:30 to 8:30 AM	Peak Hour Factor	0.95
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	TIS For Spaulding School Existing/New Traffic 2022		

## 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		0	1	0	0	0	2	0	0	0	2	0
Configuration							LR				T	TR		LT	T	
Volume (veh/h)						142		79			416	103		86	577	
Percent Heavy Vehicles (%)						6		4						4		
Proportion Time Blocked																
Percent Grade (%)					2											
Right Turn Channelized																
Median Type   Storage	Left Only								1							

## Critical and Follow-up Headways

Base Critical Headway (sec)						7.5		6.9						4.1		
Critical Headway (sec)						7.31		7.18						4.17		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.56		3.34						2.24		

## Delay, Queue Length, and Level of Service

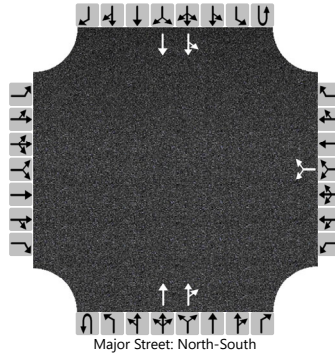
Flow Rate, v (veh/h)						233								91		
Capacity, c (veh/h)						396								1008		
v/c Ratio						0.59								0.09		
95% Queue Length, Q <sub>95</sub> (veh)						3.6								0.3		
Control Delay (s/veh)						26.2								8.9		
Level of Service (LOS)						D								A		
Approach Delay (s/veh)					26.2								1.5			
Approach LOS					D											

# HCS7 Two-Way Stop-Control Report

## General Information

Analyst	Moahmmed Abdul Azeem	Intersection	Glen Ellyn Road/ 2nd St
Agency/Co.	Glen Ellyn SD 41	Jurisdiction	DuDOT/MTHD
Date Performed	10/14/2022	East/West Street	2nd Street
Analysis Year	2022	North/South Street	Glen Ellyn Road/Main St
Time Analyzed	3:30 to 4:30 PM	Peak Hour Factor	0.95
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	TIS For Spaulding School Existing/New Traffic 2022		

## 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		0	1	0	0	0	2	0	0	0	2	0
Configuration							LR				T	TR		LT	T	
Volume (veh/h)						81		66			567	92		55	573	
Percent Heavy Vehicles (%)						6		4						4		
Proportion Time Blocked																
Percent Grade (%)					2											
Right Turn Channelized																
Median Type   Storage	Left Only								1							

## Critical and Follow-up Headways

Base Critical Headway (sec)						7.5		6.9						4.1		
Critical Headway (sec)						7.31		7.18						4.17		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.56		3.34						2.24		

## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						155								58		
Capacity, c (veh/h)						392								887		
v/c Ratio						0.39								0.07		
95% Queue Length, Q <sub>95</sub> (veh)						1.8								0.2		
Control Delay (s/veh)						20.0								9.3		
Level of Service (LOS)						C								A		
Approach Delay (s/veh)					20.0								1.1			
Approach LOS					C											

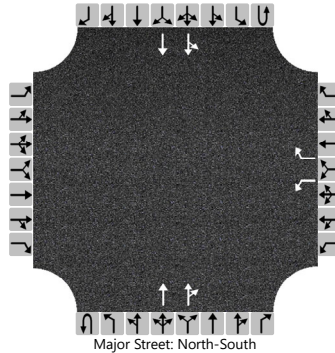


# HCS7 Two-Way Stop-Control Report

## General Information

Analyst	Moahmmed Abdul Azeem	Intersection	Glen Ellyn Road/ 2nd St
Agency/Co.	Glen Ellyn SD 41	Jurisdiction	DuDOT/MTHD
Date Performed	10/14/2022	East/West Street	2nd Street
Analysis Year	2027	North/South Street	Glen Ellyn Road/Main St
Time Analyzed	7:30 to 8:30 AM	Peak Hour Factor	0.95
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	TIS For Spaulding School Proposed/New Traffic 2027		

## 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	1	0	0	2	0	0	0	2	0
Configuration						L		R			T	TR		LT	T	
Volume (veh/h)						158		89			458	115		97	635	
Percent Heavy Vehicles (%)						6		4						4		
Proportion Time Blocked																
Percent Grade (%)					2											
Right Turn Channelized					No											
Median Type   Storage	Left Only								1							

## Critical and Follow-up Headways

Base Critical Headway (sec)						7.5		6.9						4.1		
Critical Headway (sec)						7.31		7.18						4.17		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.56		3.34						2.24		

## Delay, Queue Length, and Level of Service

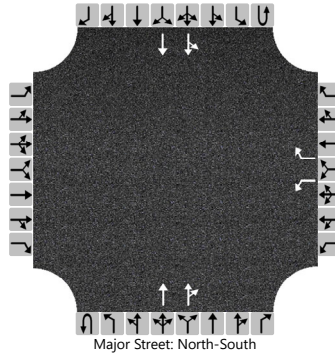
Flow Rate, v (veh/h)						166		94						102		
Capacity, c (veh/h)						283		677						960		
v/c Ratio						0.59		0.14						0.11		
95% Queue Length, Q <sub>95</sub> (veh)						3.5		0.5						0.4		
Control Delay (s/veh)						34.3		11.2						9.2		
Level of Service (LOS)						D		B						A		
Approach Delay (s/veh)					26.0								1.7			
Approach LOS					D											

# HCS7 Two-Way Stop-Control Report

## General Information

Analyst	Moahmmed Abdul Azeem	Intersection	Glen Ellyn Road/ 2nd St
Agency/Co.	Glen Ellyn SD 41	Jurisdiction	DuDOT/MTHD
Date Performed	10/14/2022	East/West Street	2nd Street
Analysis Year	2027	North/South Street	Glen Ellyn Road/Main St
Time Analyzed	3:30 to 4:30 PM	Peak Hour Factor	0.95
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	TIS For Spaulding School Proposed/New Traffic 2027		

## 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	1	0	0	2	0	0	0	2	0
Configuration						L		R			T	TR		LT	T	
Volume (veh/h)						91		74			624	102		61	630	
Percent Heavy Vehicles (%)						6		4						4		
Proportion Time Blocked																
Percent Grade (%)					2											
Right Turn Channelized					No											
Median Type   Storage	Left Only								1							

## Critical and Follow-up Headways

Base Critical Headway (sec)						7.5		6.9						4.1		
Critical Headway (sec)						7.31		7.18						4.17		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.56		3.34						2.24		

## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						96		78						64		
Capacity, c (veh/h)						268		598						834		
v/c Ratio						0.36		0.13						0.08		
95% Queue Length, Q <sub>95</sub> (veh)						1.6		0.4						0.2		
Control Delay (s/veh)						25.7		11.9						9.7		
Level of Service (LOS)						D		B						A		
Approach Delay (s/veh)					19.5								1.3			
Approach LOS					C											

# HCS7 Two-Way Stop-Control Report

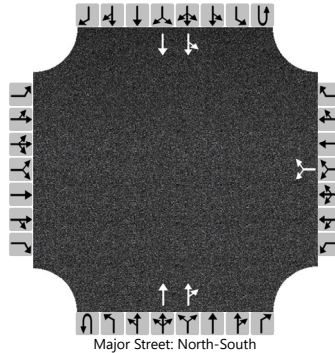
## General Information

Analyst	Moahmmed Abdul Azeem
Agency/Co.	Glen Ellyn SD 41
Date Performed	10/14/2022
Analysis Year	2022
Time Analyzed	7:30 to 8:30 AM
Intersection Orientation	North-South
Project Description	TIS For Spaulding School Existing Traffic 2022

## Site Information

Intersection	Glen Ellyn Road/ 1st St
Jurisdiction	DuDOT/MTHD
East/West Street	1st Street
North/South Street	Glen Ellyn Road/Main St
Peak Hour Factor	0.95
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		0	1	0	0	0	2	0	0	0	2	0
Configuration							LR				T	TR		LT	T	
Volume (veh/h)						21		5			404	29		2	707	
Percent Heavy Vehicles (%)						3		0						0		
Proportion Time Blocked																
Percent Grade (%)					2											
Right Turn Channelized																
Median Type   Storage	Left Only								1							

## Critical and Follow-up Headways

Base Critical Headway (sec)						7.5		6.9						4.1		
Critical Headway (sec)						7.25		7.10						4.10		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.53		3.30						2.20		

## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						27								2		
Capacity, c (veh/h)						448								1116		
v/c Ratio						0.06								0.00		
95% Queue Length, Q <sub>95</sub> (veh)						0.2								0.0		
Control Delay (s/veh)						13.6								8.2		
Level of Service (LOS)						B								A		
Approach Delay (s/veh)					13.6								0.0			
Approach LOS					B											

# HCS7 Two-Way Stop-Control Report

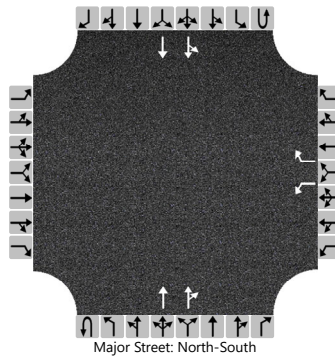
## General Information

Analyst	Moahmmed Abdul Azeem
Agency/Co.	Glen Ellyn SD 41
Date Performed	10/14/2022
Analysis Year	2022
Time Analyzed	3:30 to 4:30 PM
Intersection Orientation	North-South
Project Description	TIS For Spaulding School Existing Traffic 2022

## Site Information

Intersection	Glen Ellyn Road/ 1st St
Jurisdiction	DuDOT/MTHD
East/West Street	1st Street
North/South Street	Glen Ellyn Road/Main St
Peak Hour Factor	0.95
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	1	0	0	2	0	0	0	2	0
Configuration						L		R			T	TR		LT	T	
Volume (veh/h)						23		15			570	59		9	742	
Percent Heavy Vehicles (%)						3		0						0		
Proportion Time Blocked																
Percent Grade (%)					2											
Right Turn Channelized					Yes											
Median Type   Storage	Left Only								1							

## Critical and Follow-up Headways

Base Critical Headway (sec)						7.5		6.9						4.1		
Critical Headway (sec)						7.26		7.10						4.10		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.53		3.30						2.20		

## Delay, Queue Length, and Level of Service

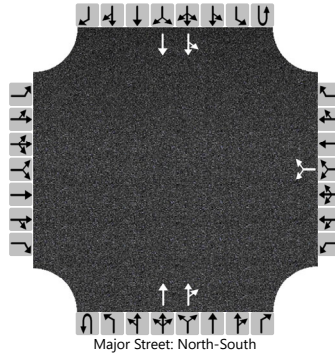
Flow Rate, v (veh/h)						24		16						9		
Capacity, c (veh/h)						323		658						936		
v/c Ratio						0.07		0.02						0.01		
95% Queue Length, Q <sub>95</sub> (veh)						0.2		0.1						0.0		
Control Delay (s/veh)						17.0		10.6						8.9		
Level of Service (LOS)						C		B						A		
Approach Delay (s/veh)					14.5								0.2			
Approach LOS					B											

# HCS7 Two-Way Stop-Control Report

## General Information

Analyst	Moahmmed Abdul Azeem	Intersection	Glen Ellyn Road/ 1st St
Agency/Co.	Glen Ellyn SD 41	Jurisdiction	DuDOT/MTHD
Date Performed	10/14/2022	East/West Street	1st Street
Analysis Year	2022	North/South Street	Glen Ellyn Road/Main St
Time Analyzed	7:30 to 8:30 AM	Peak Hour Factor	0.95
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	TIS For Spaulding School Existing/New Traffic 2022		

## 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		0	1	0	0	0	2	0	0	0	2	0
Configuration							LR				T	TR		LT	T	
Volume (veh/h)						90		74			404	110		83	707	
Percent Heavy Vehicles (%)						3		0						0		
Proportion Time Blocked																
Percent Grade (%)					2											
Right Turn Channelized																
Median Type   Storage	Left Only								1							

## Critical and Follow-up Headways

Base Critical Headway (sec)						7.5		6.9						4.1		
Critical Headway (sec)						7.26		7.10						4.10		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.53		3.30						2.20		

## Delay, Queue Length, and Level of Service

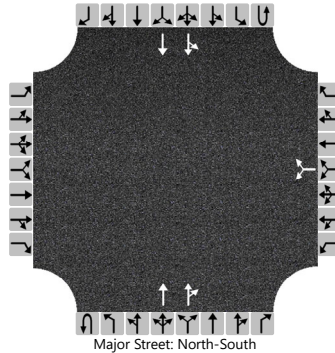
Flow Rate, v (veh/h)						173								87		
Capacity, c (veh/h)						412								1038		
v/c Ratio						0.42								0.08		
95% Queue Length, Q <sub>95</sub> (veh)						2.0								0.3		
Control Delay (s/veh)						19.9								8.8		
Level of Service (LOS)						C								A		
Approach Delay (s/veh)					19.9								1.3			
Approach LOS					C											

# HCS7 Two-Way Stop-Control Report

## General Information

Analyst	Moahmmed Abdul Azeem	Intersection	Glen Ellyn Road/ 1st St
Agency/Co.	Glen Ellyn SD 41	Jurisdiction	DuDOT/MTHD
Date Performed	10/14/2022	East/West Street	1st Street
Analysis Year	2022	North/South Street	Glen Ellyn Road/Main St
Time Analyzed	3:30 to 4:30 PM	Peak Hour Factor	0.95
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	TIS For Spaulding School Existing/New Traffic 2022		

## 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		0	1	0	0	0	2	0	0	0	2	0
Configuration							LR				T	TR		LT	T	
Volume (veh/h)						64		56			570	108		58	742	
Percent Heavy Vehicles (%)						3		0						0		
Proportion Time Blocked																
Percent Grade (%)					2											
Right Turn Channelized																
Median Type   Storage	Left Only								1							

## Critical and Follow-up Headways

Base Critical Headway (sec)						7.5		6.9						4.1		
Critical Headway (sec)						7.26		7.10						4.10		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.53		3.30						2.20		

## Delay, Queue Length, and Level of Service

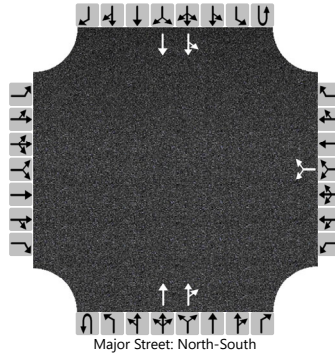
Flow Rate, v (veh/h)						126								61		
Capacity, c (veh/h)						374								896		
v/c Ratio						0.34								0.07		
95% Queue Length, Q <sub>95</sub> (veh)						1.5								0.2		
Control Delay (s/veh)						19.5								9.3		
Level of Service (LOS)						C								A		
Approach Delay (s/veh)					19.5								1.1			
Approach LOS					C											

# HCS7 Two-Way Stop-Control Report

## General Information

Analyst	Moahmmed Abdul Azeem	Intersection	Glen Ellyn Road/ 1st St
Agency/Co.	Glen Ellyn SD 41	Jurisdiction	DuDOT/MTHD
Date Performed	10/14/2022	East/West Street	1st Street
Analysis Year	2027	North/South Street	Glen Ellyn Road/Main St
Time Analyzed	7:30 to 8:30 AM	Peak Hour Factor	0.95
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	TIS For Spaulding School Proposed/New Traffic 2027		

## 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		0	1	0	0	0	2	0	0	0	2	0
Configuration							LR				T	TR		LT	T	
Volume (veh/h)						101		84			444	123		93	778	
Percent Heavy Vehicles (%)						3		0						0		
Proportion Time Blocked																
Percent Grade (%)					2											
Right Turn Channelized																
Median Type   Storage	Left Only								1							

## Critical and Follow-up Headways

Base Critical Headway (sec)						7.5		6.9						4.1		
Critical Headway (sec)						7.26		7.10						4.10		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.53		3.30						2.20		

## Delay, Queue Length, and Level of Service

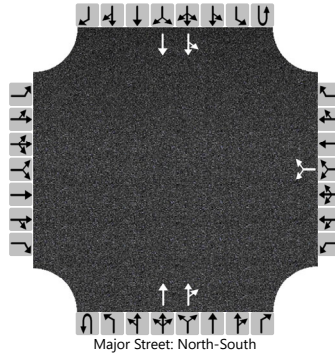
Flow Rate, v (veh/h)						195								98		
Capacity, c (veh/h)						374								990		
v/c Ratio						0.52								0.10		
95% Queue Length, Q <sub>95</sub> (veh)						2.9								0.3		
Control Delay (s/veh)						24.6								9.0		
Level of Service (LOS)						C								A		
Approach Delay (s/veh)					24.6								1.5			
Approach LOS					C											

# HCS7 Two-Way Stop-Control Report

## General Information

Analyst	Moahmmed Abdul Azeem	Intersection	Glen Ellyn Road/ 1st St
Agency/Co.	Glen Ellyn SD 41	Jurisdiction	DuDOT/MTHD
Date Performed	10/14/2022	East/West Street	1st Street
Analysis Year	2027	North/South Street	Glen Ellyn Road/Main St
Time Analyzed	3:30 to 4:30 PM	Peak Hour Factor	0.95
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	TIS For Spaulding School Proposed/New Traffic 2027		

## 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		0	1	0	0	0	2	0	0	0	2	0
Configuration							LR				T	TR		LT	T	
Volume (veh/h)						72		64			636	120		65	816	
Percent Heavy Vehicles (%)						6		4						4		
Proportion Time Blocked																
Percent Grade (%)					2											
Right Turn Channelized																
Median Type   Storage	Left Only								1							

## Critical and Follow-up Headways

Base Critical Headway (sec)						7.5		6.9						4.1		
Critical Headway (sec)						7.31		7.18						4.17		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.56		3.34						2.24		

## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						143								68		
Capacity, c (veh/h)						329								811		
v/c Ratio						0.44								0.08		
95% Queue Length, Q <sub>95</sub> (veh)						2.1								0.3		
Control Delay (s/veh)						24.1								9.8		
Level of Service (LOS)						C								A		
Approach Delay (s/veh)					24.1								1.3			
Approach LOS					C											