

MEMORANDUM

To: David Nevarez., P.E., City of Dallas

From: Beth Ostrowski, P.E. (Tennessee), KCI Technologies, Inc.
Kyle Jones, P.E., KCI Technologies, Inc. (TBPE Firm #10573)

Re: **Golden Rule School – Illinois Campus – Traffic Management Plan**

Date: December 16, 2019



Introduction

This purpose of this memo is to provide a traffic management plan (TMP) for the Golden Rule School – Illinois campus. The school is located on West Illinois Avenue, west of Chalmers in Dallas, Texas. Specifically, the school is located at 2602 West Illinois Avenue, Dallas, TX 75233, and the phone number is 214-333-9330. The school is currently planned to expand by 120 students. A portion of the middle school students are planned to be relocated from the existing building to the new building. The Pleasant Grove campus includes two existing vehicular access points on West Illinois Avenue and one access point on Chalmers. An additional access point is planned to be constructed in conjunction with the expansion that will connect from West Illinois Avenue to Engle Avenue, south of the school.

The TMP exhibit, attached, consists of a site-specific plan providing guidelines to coordinate traffic circulation during school peak hours. Specifically, the TMP is intended to promote strategies to manage all modes of transportation and maintain student safety at all times.

Existing Conditions

The following roadway provides access to the Illinois campus:

- West Illinois Avenue is a two-way roadway that travels in an east-west direction with three lanes in each direction and divided by a center median in the vicinity of the school. West Illinois Avenue provides connection between Interstate 35E to the east and S. Walton Walker Boulevard to the west. The posted speed limit on West Illinois Avenue near the school is 35 mph.

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- Chalmers is a two-way roadway that travels in a north-south direction with width for one lane in each direction. Chalmers provides connection between West Illinois Avenue to the north and Glenfield Avenue to the south. The speed limit is not posted on Chalmers near the school.
- Engle Avenue is a two-way roadway that travels in an east-west direction with width for one lane in each direction. Engle Avenue provides connection between South Hampton Road to the east and Pierce Street to the west. The speed limit is not posted on Engle Avenue near the school.

There are existing signs notifying motorists of school traffic located along West Illinois Avenue near the school. Specifically, there are School Crossings Ahead signs located west and east of Pierce Street and east of Chalmers. There are also existing School Crossing signs facing both directions at the intersection of West Illinois Avenue and Chalmers.

The Golden Rule School – Illinois campus has a current enrollment of 746 full-time students. The existing enrollment includes 45 Pre-K students during either the morning hours (arrive at 7:30 AM, dismiss at 12:00 PM) or the afternoon hours (arrive at 12:00 PM and dismiss at 3:00 PM). The remainder of the student population consists of elementary and middle school students. Elementary students arrive at 7:30 AM and dismiss at 3:00 PM, while middle school students arrive at 8:00 AM and dismiss at 3:30 PM. There are no school buses associated with the school, and students arriving on alternative modes of travel are minimal and discouraged by the school.

Field observations of the traffic management system at the school were made on a typical weekday during arrival and dismissal periods. The field observations indicate that the traffic entering the school for drop-off/pick-up travel through the West Illinois Avenue access point. These vehicles circulate internally to the main drop-off/pick-up point in the parking lot located on the eastern portion of the property and then exit out the Chalmers access point. Additionally, several vehicles were observed using on-street parking on Chalmers and students walking into the school from that location.

Field observations also indicate that queuing remains within the internal drives on campus during the arrival period in the morning. Field measurements indicate that the maximum queue during the arrival/dismissal backed up to the entrance point on West Illinois Avenue, but never queued onto West Illinois Avenue. Photos of existing queues are presented at the end of the report.

According to information provided by school officials, an identification system is in place for dismissal that involves student name signs displayed in vehicles and walkie-talkie

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communications in order to coordinate students with their vehicles as they arrive. There are three traffic control officers that direct traffic during arrival and dismissal periods. Six school staff members assist in walking students to/from vehicles during arrival and dismissal periods.

Turning Movement Counts

In order to provide data for the traffic impact analysis, traffic counts were conducted at the following locations:

- West Illinois Avenue and Pierce Street
- West Illinois Avenue and School Access
- West Illinois Avenue and Chalmers
- Chalmers and School Access
- Engle Avenue and Chalmers
- Engle Avenue and Pierce Street

Turning movement counts were conducted from 6:30 – 8:30 AM and 3:00 – 6:00 PM on a typical weekday in September 2019 by Marr Traffic. From the counts, it was determined that the peak hours of traffic flow occurred from 7:15 – 8:15 AM and 3:30 – 4:30 PM. The existing peak hour traffic volumes are presented on a figure at the end of the report.

Sight Distance

Sight distance measurements were conducted on West Illinois Avenue at the site access drives to determine if adequate sight distance would be available for motorists making left or right turns from the site accesses. For a 35 mph speed on West Illinois Avenue, the guidelines from *A Policy on Geometric Design of Highways and Streets*, by the American Association of State Highway and Transportation Officials (AASHTO), call for a minimum stopping sight distance of 250 feet as a design value. This is the distance required for a motorist to detect an object in the roadway necessitating a stop and be able to stop before reaching the object. For a 30 mph speed, as is the assumed speed limit on Chalmers and Engle Avenue, AASHTO calls for a minimum stopping sight distance of 200 feet as a design value.

Subsequently, AASHTO also provides minimum design values for intersection sight distance. For example, the intersection sight distance allows enough time gap for a motorist to turn from the site access drives onto West Illinois Avenue without requiring

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a motorist on West Illinois Avenue to significantly reduce speed. For example, for a speed of 35 mph, the design value for intersection sight distance for a motorist turning right from a stop is 335 feet. Therefore, it is desirable to provide a minimum of 335 feet looking to the west of the site access drive onto West Illinois Avenue.

For a speed of 30 mph, the design value for intersection sight distance for a motorist turning right from a stop is 195 feet. Therefore, it is desirable to provide a minimum of 195 feet looking to the north of the site access drive onto Chalmers or looking west onto Engle Avenue. Additionally, for a speed of 30 mph, the design value for intersection sight distance for a motorist turning left from a stop is 335 feet. Therefore, it is desirable to provide a minimum of 335 feet looking to the south of the site access drive onto Chalmers or looking east on Engle Avenue.

According to field measurements, adequate intersection sight distance is available for all turning movements from the site access drives onto both West Illinois Avenue and Chalmers.

TMP Exhibit

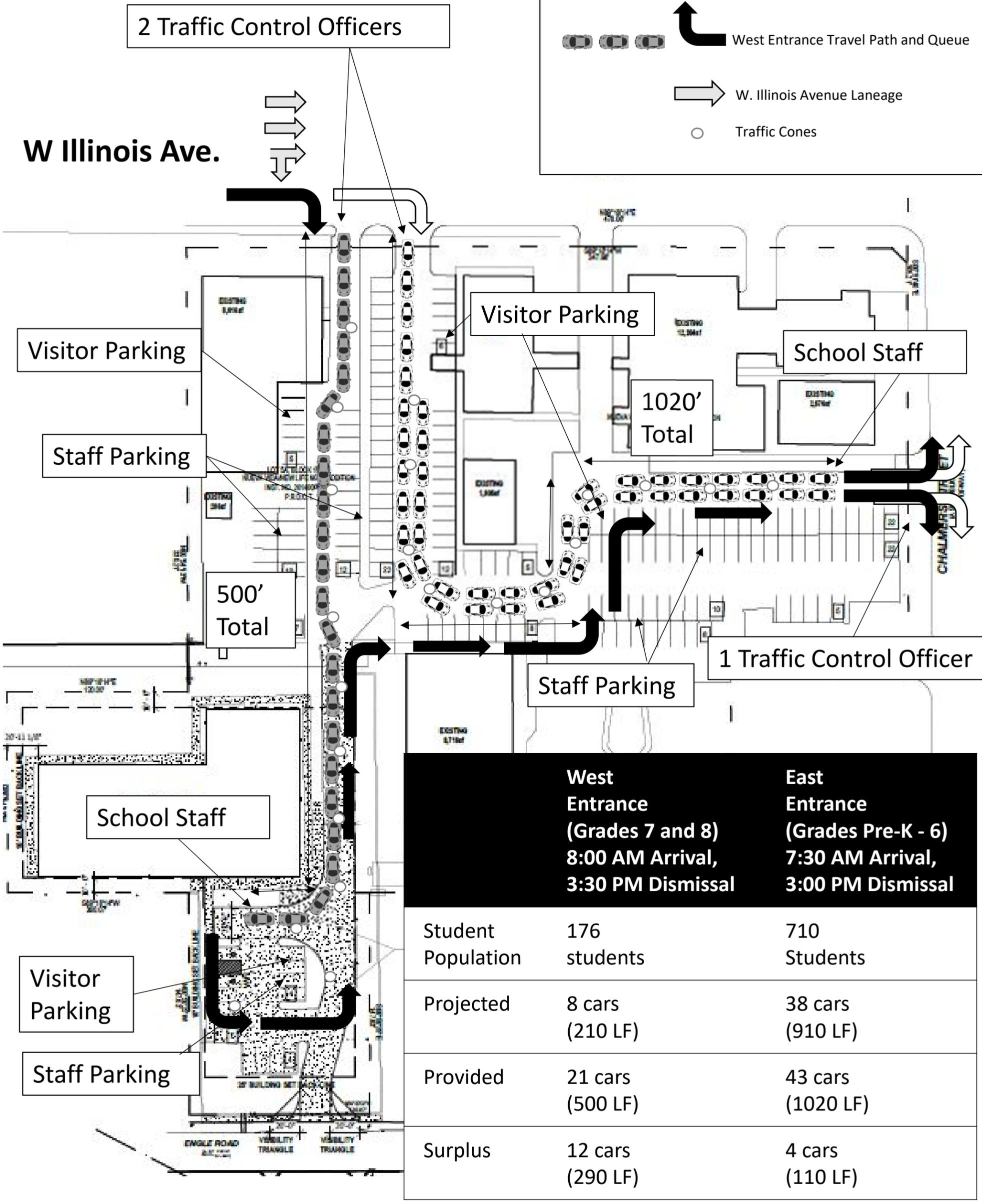
The TMP exhibit is shown on the next page. The TMP exhibit shows the following features of the Illinois campus:

- Building footprints, curbs, parking, pavement markings, designated student drop-off and pick-up locations.
- School site location and all ingress and egress points of access for motor vehicles or pedestrians.
- On-site traffic circulation, including any temporary traffic control devices.
- Location of school staff assisting with unloading and loading students, as well as location of school crossing guards and/or off-duty deputized officers.

Figure 1: TMP Exhibit

Legend

-  East Entrance Travel Path and Queue
-  West Entrance Travel Path and Queue
-  W. Illinois Avenue Laneage
-  Traffic Cones



	West Entrance (Grades 7 and 8) 8:00 AM Arrival, 3:30 PM Dismissal	East Entrance (Grades Pre-K - 6) 7:30 AM Arrival, 3:00 PM Dismissal
Student Population	176 students	710 Students
Projected	8 cars (210 LF)	38 cars (910 LF)
Provided	21 cars (500 LF)	43 cars (1020 LF)
Surplus	12 cars (290 LF)	4 cars (110 LF)

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Summary Table

TABLE 1: SUMMARY OF TMP

FEATURE	Existing Conditions	Projected Conditions
Student Arrival Time:	Elementary - 7:300 AM, 12:00 PM (Pre-K only) Middle School – 8:00 AM	Elementary - 7:30 AM, 12:00 PM (Pre-K only) Middle School – 8:00 AM
Student Dismissal Time:	Elementary – 12:00 PM (Pre-K only), 3:00 PM Middle School – 3:30 PM	Elementary – 12:00 PM (Pre-K only), 3:00 PM Middle School – 3:30 PM
School Enrollment:	PK3 – 15 students PK4 – 30 students KG – 62 students Gr. 1 – 78 students Gr. 2 – 75 students Gr. 3 – 70 students Gr. 4 – 82 students Gr. 5 – 99 students Gr. 6 – 79 students Gr. 7 – 81 students Gr. 8 – 75 students	PK3 – 15 students PK4 – 30 students KG – 82 students Gr. 1 – 98 students Gr. 2 – 95 students Gr. 3 – 90 students Gr. 4 – 102 students Gr. 5 – 119 students Gr. 6 – 79 students Gr. 7 – 81 students Gr. 8 – 75 students
Number of School Staff Assisting Loading/Unloading:	6	6
Number of Crossing Guards and/or Off-Duty Officers:	3	3
Storage Capacity:	910 feet	1,020 feet (Elementary Travel Path) 500 feet (Middle School Travel Path)

As shown in the TMP Exhibit, the traffic pattern for the existing student population is planned to utilize the existing travel path from West Illinois Avenue to Chalmers. The traffic pattern for the middle school students (Grades 7 and 8) after expansion is planned to travel through the adjacent church entrance southbound toward the new building, loop back north, and exit out of the existing access drive located on Chalmers. The staggered arrival/dismissal schedule along with the additional travel path option should help mitigate potential queueing.

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Conclusions and Recommendations

The analyses presented in this memo that safe and efficient traffic operations can be achieved by implementing the following recommendations:

- Maintain existing traffic management plan characteristics, including 6 school staff members, 3 crossing guards, temporary traffic control equipment, and student identification system. Parking off-campus for pick-up and drop-off should be prohibited.
- Implement a standard practice to control utilization of each travel path by assigning students to each path by grade level. Grades 7 and 8 should utilize the western entrance path. The remaining student population should utilize the existing travel path through the eastern entrance.
- Shift the front of the dismissal queue for the existing eastern entrance travel path to maximize storage. This shift will push the front of the queue approximately 110 feet west of its current location.
- Stagger arrival and dismissal times with as much time between phases as possible to avoid queueing issues.
- Maintain existing travel path for portion of the student population that will utilize the existing main entrance point.
- Implement the proposed travel path (shown on TMP Exhibit) for portion of the student population that will enter the proposed building on the southern section of the campus.
- No parking, standing, or stopping on West Illinois Avenue is allowed. Any observed vehicular queue on West Illinois Avenue should be immediately mitigated.

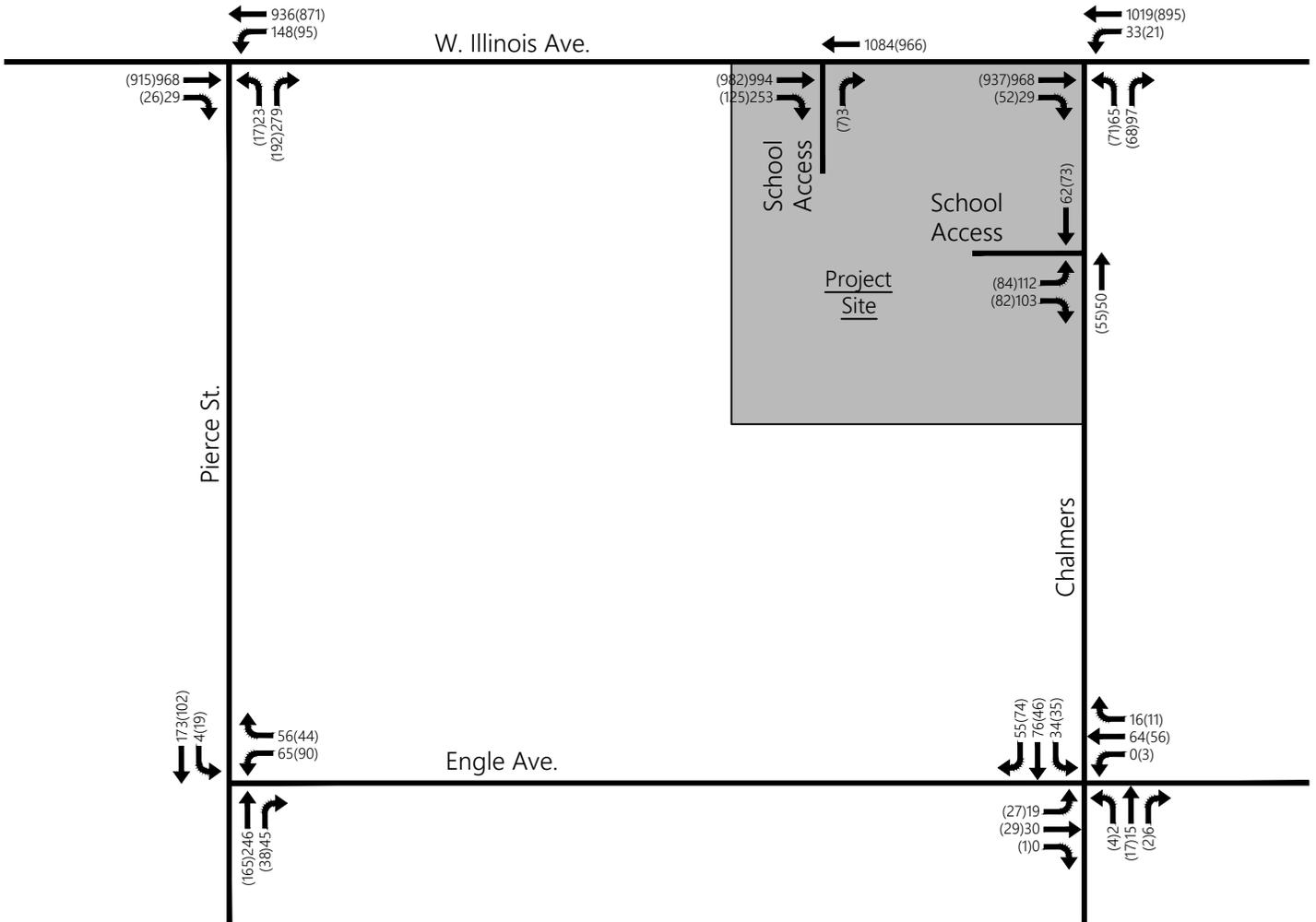
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Existing Conditions Photos





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



Existing Peak Hour Traffic Volumes
 (Not to Scale)

Figure 3.