

Technical Memorandum

To: Malcolm Wentworth
From: Scott Booth, PE, PTOE
Date: January 11, 2019
Re: TMP for Texans Can Academy – Dixon Avenue Campus
LJA Job No. 2692-1901



Introduction

LJA Engineering, Inc. (LJA) was retained by Texans Can Academies (TCA) to prepare a Traffic Management Plan (TMP) for the proposed TCA – Dixon Avenue campus located in Dallas, Texas. The proposed school is located on the north side of Dixon Avenue, approximately 1000 feet east of 2nd Avenue. Figure 1 below is an aerial detailing the site location.



Figure 1 – Site Location Map

The proposed school will initially be housed in an existing building on the approximately 4-acre site and will have an enrollment up to 200 students (split over morning and afternoon classes) and 20 staff members (many of which work both morning and afternoon classes).

Current and Future Roadway Conditions

The proposed campus is located on a triangle shaped parcel and is bordered by Dixon Avenue along the southern edge of the site. Dixon Avenue is a two-lane roadway, 39-feet in width between curb faces and has a posted speed limit of 30 miles per hour. To the north of the site is the Union Pacific (UP) rail line and there is no access along the east edge of the parcel. There are no known proposed improvements to Dixon Avenue at this time.

Traffic Management Plan

The purpose of the TMP is have established procedures for traffic flow and circulation around the charter school related to student drop-off and pick-up operations. Use of a TMP helps improve traffic/student safety and helps maximize the efficiency of drop-off and pick-up operations. The analysis summarized in this report identifies critical elements of the TMP such as the available space (both on and off site), circulation patterns for the charter school facilities, and the projected trip generation (and estimated queuing) during the morning, midday and afternoon peaks.

Operational Characteristics

Based on information from the client, the school is projected to have:

- An enrollment of 200 students, with morning and afternoon sessions
- 20 staff members

The high school will be open from 7:00 am until 7:00 pm. As stated, classes are split between morning (7:45 am to 12:00 pm) and afternoon (12:30 pm to 4:45 pm) sessions. The actual start and end times for class sessions could vary slightly from those listed above and structured around the DART bus schedule. This is due to the large number of students that utilize transit.

For schools, peak traffic flow occurs at the start and end of classes and is usually around 30 minutes in duration. For this campus, there are two class sessions for students, one in the morning and one in the afternoon. Most students are enrolled in either the morning or afternoon session, but a few may be enrolled in both.

Based on estimated class times and observations conducted at other campuses, the morning peak hour is between 7:00 and 8:00 am, the midday peak is between 11:30 am and 12:30 pm, and the afternoon peak is between 4:30 and 5:30 pm.

Campus Trip Generation

Trip generation for the school is based on observations conducted at existing campuses in the Dallas area. From existing campus data, the morning peak generates 0.40 vehicle trips per student, split between 70 percent in and 30 percent out. Midday trip generation is 0.32 vehicle trips per student, with 40 percent in and 60 percent out. Afternoon trip generation is approximately 0.10 vehicle trips per student, with 27 percent in and 73 percent out. Overall daily vehicle trip

generation is approximately 1.10 trips per student. Table 1 below summarizes the projected trip generation based on the anticipated 200 student enrollment.

Table 1 – Projected Vehicle Trip Generation Summary

Land Use	Independent Variable	Units	AM-Peak Hour			Midday-Peak Hour			PM-Peak Hour		
			In	Out	Total	In	Out	Total	In	Out	Total
High School	Students	200	56	24	80	26	38	64	6	14	20
Total Trips			56	24	80	26	38	64	6	14	20

The above table shows that the highest period of vehicle trip generation will occur in the morning peak hour with a total of 80 trips, primarily due to the arrival of both students and staff. Observations of existing campuses show the arrival of vehicles during the morning peak hour to be spread out more evenly across the hour with staff arriving before students.

The midday peak hour is considered the critical time period for traffic activity. Although it has fewer trips compared to the morning peak hour, both drop-off and pick-up activity occur during the midday peak. Additionally, vehicular activity is concentrated into a peak 30-minute period between 11:45 am and 12:15 pm.

There is minimal vehicular activity on campuses during the afternoon peak hour. This is due to the split morning and afternoon classes with more students attending class during the morning session.

Projected School Operations and Vehicle Circulation

All students will enter and exit the school through the main entrance of the existing building. (Refer to the attached TMP exhibit). This main entrance is located on the south side of the existing building adjacent to the existing loop driveway.

As with other TCA campuses, the majority of students attending this campus will utilize transit services (TCA provides students with a DART pass to facilitate/encourage transit use). There are two DART bus stops on Dixon Avenue within 425 feet of the campus (the locations are shown on the TMP exhibit). There are existing sidewalks on both sides of Dixon Avenue between the bus stops and the entrance to the school.

For students that are dropped off and/or picked up by family, there will be two drop-off/pick-up loops for vehicles, the front loop adjacent to the existing building, and secondary loop to the east of the school. It is recommended that the front loop be utilized for the drop-off of students and that traffic flow one-way in a counter-clockwise direction. Thus, the east driveway of the front loop would be inbound only, but the west drive would be two-way to serve the existing parking west of the existing building.

The secondary loop would be utilized for student pick-up and would also operate in a one-way counter-clockwise direction. Although the loop would be one-way in operation for pickups of

students, it is recommended that both drives serving the secondary loop be two-way to serve the parking.

On-Street Pick-Up/Drop-Off

Although the school is in a residential area and there is sufficient width on Dixon Avenue for vehicles to park, staff will instruct parents to utilize the campus driveways to drop-off/pick-up students.

On-Site Queues and Projected Queue Lengths

Based on observations at TCA campuses, vehicular queuing is minimal compared to typical school. For TCA campuses with 350 students, maximum observed queue lengths vary between four and eight vehicles. Shorter queues occur at campuses surrounded by residential streets that have on-street parking versus campuses adjacent to major arterials. For this campus, an enrollment of 200 students will result in maximum queue between two and five vehicles, or between 50 and 125 feet.

The front loop is approximately 250 feet in total length, with approximately 150 feet between the east drive (of the front loop) and the main entrance to the building. This section alone is adequate to hold the anticipated maximum queue of five vehicles. But given that this drive is recommended for drop-off only, the queue will likely be much shorter.

The proposed secondary loop is between 550 and 600 feet in total length, which is between 22 to 24 vehicles of queuing space.

Summary

Based upon the proposed site layout for the Dixon Avenue campus, the projected student enrollment, and observations from existing TCA campuses; it is anticipated that the proposed school will not have a significant impact on the traffic operations of Dixon Avenue or adjacent roadways. The proposed school is projected to generate around 220 vehicle trips per day.

Overall access to the site is good and there is sufficient on-site storage for projected queues related to daily school operations.



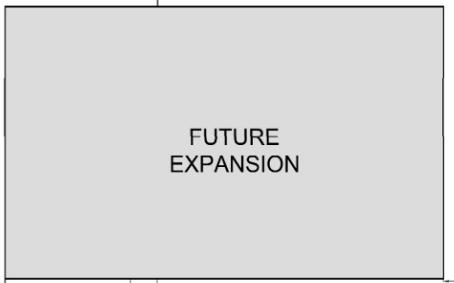
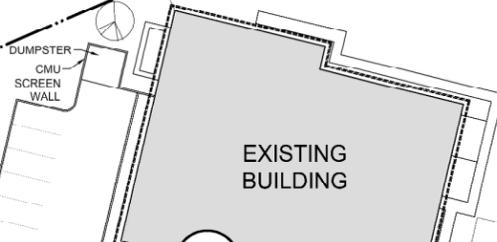
RAILROAD LINE

PROPERTY LINE 695.00'

PROPERTY LINE 415.00'

PROPERTY LINE 143.00'

PROPERTY LINE 629.00'



DIXON AVE

APARTMENTS

DRIVEWAY

LEGEND

-  Student Drop-off Circulation Path
-  Student Pick-up Circulation Path
-  DART Bus Stop
-  Staff Assistant
-  Drop-off Travel Path
-  Drop-off Area
-  Pick-up Travel Path
-  Pick-up Area

Campus Information

Enrollment: 200 Students*
 Academic: Grades 9-12
 Hours: 8:00 am to 5:00 pm
 *Students split over two sessions

Queueing Information

Projected Queue: 125 ft (5 veh.)
 On-site Storage: 550 ft (22 veh.)
 Net Surplus: 425 ft (17 veh.)

Note:
 This Traffic Management Plan was developed to prevent the queuing of drop-off/pick-up vehicles within the city right-of-way. The school administration should adhere to the TMP and any deficiency due to spill over of queuing into the undesignated areas of city right-of-way, including roadway travel lanes, should be corrected by the school immediately.

**TEXANS CAN
 ACADEMIES**
 DIXON AVENUE CAMPUS
 TRAFFI MANAGEMENT PLAN

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TMP EXHIBIT