Traffic Study

for:

Maranatha High School

In the City of Pasadena

Prepared for:

Maranatha High School



TRAFFIC STUDY FOR MARANATHA HIGH SCHOOL IN THE CITY OF PASADENA

Prepared for:

Maranatha High School

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MARANATHA HIGH SCHOOL AREAWIDE TRAFFIC STUDY AND TRAFFIC MANAGEMENT EVALUATION

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MARANATHA HIGH SCHOOL 1610 E. ELIZABETH STREET

AREAWIDE TRAFFIC STUDY AND TRAFFIC MANAGEMENT EVALUATION CONDITIONAL USE PERMIT #4071

INTRODUCTION

This follow-up report has been prepared in accordance with Condition No. 51 of the above-referenced CUP to prepare an areawide traffic study and to provide a description and evaluation of the Maranatha High School traffic patterns, pick-up and drop-off activities, and parking patterns as currently established on the William Carey International University (WCIU) campus.

The Maranatha High School was approved with a prescribed pick-up and drop-off pattern and parking restrictions to minimize the school's traffic impacts on the surrounding neighborhood and residential streets. Specifically, the goal was to restrict school traffic, as much as possible, to approaching and departing from the school via N. Hill Street, and avoiding the neighborhoods to the north, south, and east of the campus.

MARANATHA HIGH SCHOOL TRAFFIC PLAN

The traffic study originally prepared for Maranatha High School assumed a total enrollment of 650 students, and that drop-off and pick-up traffic would approach the William Carey International University campus from the south, and follow a counter-clockwise pattern using Sierra Bonita Avenue, Bresee Avenue, Wesley Avenue, and E. Howard Street. Drop-offs and pick-ups were to occur on the north side of E. Howard Street. The residents of the neighborhood south of the campus opposed this routing plan, and a revised plan was developed.

The Maranatha High School project was approved for a maximum of 520 students, and the traffic routing plan was revised to direct that all drop-off/pick-up traffic would approach the school from N. Hill Street, turning east onto Elizabeth Street, and depart from the school by reversing this path, returning to Hill Street.

Parents dropping off students have been instructed to enter the main school parking lot (known as the Townsend Lot) at the first driveway on Elizabeth Street, follow a counter-clockwise loop through the parking lot, drop students off on-site, and exit via the exit-only driveway toward the east edge of the campus, turning left on East Elizabeth Street, and returning to Hill Street. No

drop-offs or pick-ups are to occur on Howard Street (on the south side of the campus). A copy of the prescribed drop-off / pick-up pattern is provided on **Figure 1**.

A limited number of students and/or faculty are allowed to park in the Mott parking lot, which is accessed via E. Howard Street; and in the Taylor Lot, on the north side of Elizabeth Street. Mott Lot users have been directed to approach and depart via N. Hill Street and E. Howard Street, and not to use the smaller residential streets to the south of the campus (Wesley, Bresee, and Sierra Bonita Avenues). Taylor Lot users are directed to approach and depart via Elizabeth Street to N. Hill Street, and not to use Sierra Bonita to access areas to the north.

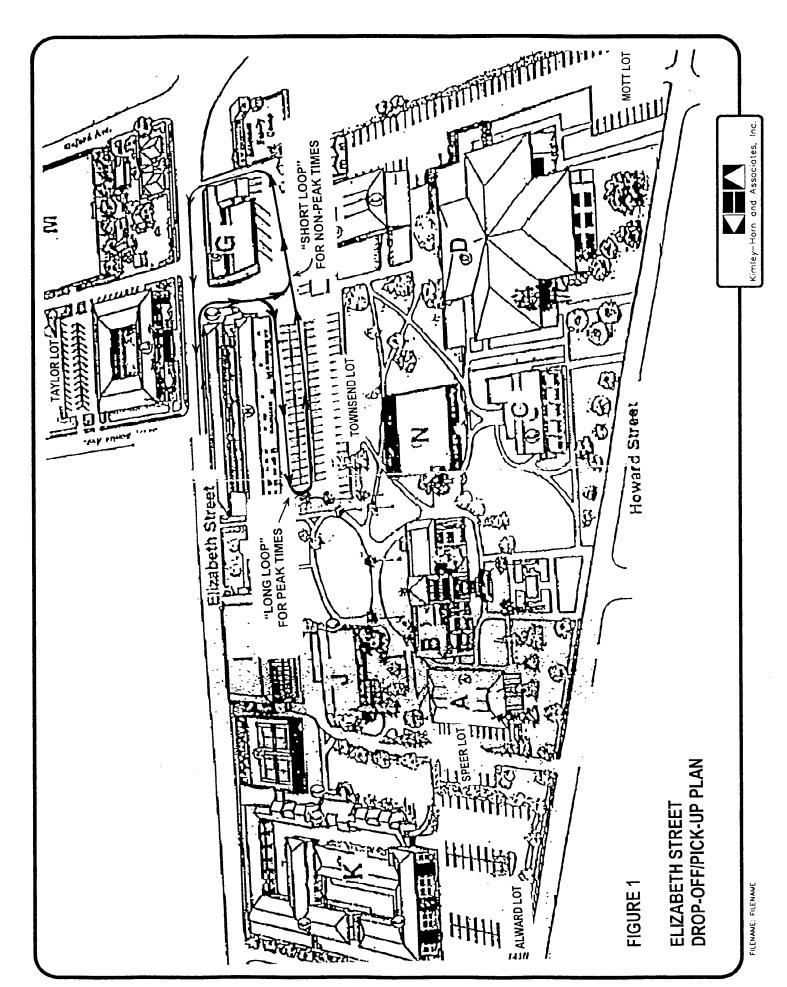
The purpose of these traffic management measures is to direct school-related traffic to Elizabeth Street (and for Mott Lot users, Howard Street) so as to minimize traffic associated with Maranatha High School on the residential streets to the south of Howard Street, on Oxford Street to the east of the campus (which is in the County of Los Angeles) and on the streets to the north of the Taylor Lot (which are also in Los Angeles County).

It should be pointed out that the traffic management measures undertaken by Maranatha High School have been communicated to students and parents of Maranatha High School, and are implemented and enforced by Maranatha High School staff. Other users of the William Carey International University (WCIU) campus do not have the same restrictions imposed on them, and Maranatha High School staff members do not have jurisdiction over them.

Observations of School Traffic Patterns

Maranatha High School has a current enrollment of 442 students. Morning and afternoon observations of drop-off and pick-up patterns during a typical Maranatha High School weekday operation were conducted on three different occasions to evaluate the existing school traffic patterns, and to see if the school's traffic management program operates as planned. The following is a summary of observations.

- The peak flow along Elizabeth and through the parking area works smoothly during dropoff and pick-up times. In general, parents and students are following the prescribed counter-clockwise loop, entering and exiting via the west on Elizabeth Street.
- Parents of the Judson School follow the same drop-off and pick-up patterns, if they arrive during the Maranatha High School drop-off and pick-up times.



- During the peak times, cars queue along Elizabeth Street (in the eastbound direction) before entering the Maranatha High School lot.
- Also during the peak times, cars queue along Elizabeth Street (in the westbound direction) at its intersection with N. Hill Street.
- The peak periods associated with school drop-off and pick-up occur from 7:30 to 8:00 AM and from 2:45 to 3:15 PM.
- The north side of Elizabeth Street is signed with "No Stopping Any Time" signs.
- Parking is prohibited on the south side of Elizabeth Street from 7:00 to 9:00 AM.
- By the end of the school day, the on-street parking along the south side of Elizabeth Street is approximately 80% utilized.
- With cars parked along the south side of Elizabeth Street, adequate width is available for two vehicles, including larger SUV'S, to pass each other in opposite directions.
- Cones and signs are used inside the school parking lot to ensure the planned traffic routing is followed, and that no "short-cuts" through the parking lot are taken.
- Maranatha High School staff people are posted in the parking lot and at the Elizabeth Street driveways during the peak pick-up/drop-off times to keep traffic moving and to keep drivers from entering or exiting the wrong driveway or entering or exiting from the wrong direction.
- No cars were observed trying to enter or exit the parking lot from the east on Elizabeth Street.
- A school staff person was observed standing at the exit-only driveway on Elizabeth Street making sure that no drivers enter the parking lot from the east, and that all exiting drivers turn to the left, thus not allowing cars to turn right toward Oxford Avenue.
- On one occasion, the staff person was observed asking a driver who had pulled over on the north side of Elizabeth Street (the side where no parking is allowed) to move on, to allow cars to continue to keep moving in both directions.
- No drivers were observed approaching the Taylor Lot (on the north side of Elizabeth Street) from the north on Sierra Bonita, or departing the lot to the north.
- During the observations, 5 to 7 cars were observed entering E. Howard Street from N. Hill Street, dropping off students on E. Howard, and pulling away.
- During the observations, three cars were observed approaching the school via Wesley Avenue, and either dropping students off on E. Howard Street, or parking in the Mott Lot. (Parents and students have been directed not to use the residential streets to the south of the campus.)
- Speeding on Wesley Avenue was observed in a few instances. The drivers observed speeding entered the William Carey International University campus, but it was not evident if they were affiliated with Maranatha High School or other campus uses.

• The school administration has been advised of these observations.

Maranatha High School Commitment to Traffic Management

The following is a summary of the measures that have been taken by the school, and the programs and communications that have been implemented since the Maranatha High School opened on the WCIU campus.

Traffic Hotline

The Maranatha High School website provides a direct link from its Home Page to a page labeled "Traffic". This link takes the reader to a page that provides a name, phone number, and e-mail address for the Traffic & Security Director. This provides residents the ability to contact the school regarding any traffic or security issues. A copy of the web page is provided in *Appendix A*.

Traffic Log

The school administration keeps a log of all calls and communication received regarding any type of parking or traffic concerns. A copy of the Traffic Log is included in Appendix A. A total of 11 calls from neighbors have been logged since the start of school in September, 2002. In addition, the school itself logged three independent actions they took in response to student traffic or parking infractions, for a total of 14 logged items. Of those, 9 were logged within the first month of the school's opening. Issues raised included students and/or parents observed using the wrong street, dropping students off on the street, or student parking on the street. In each case, the issue was investigated, and action was taken to talk to the drivers involved. Procedures now in place have addressed issues identified earlier in the year. It is noted that one of the logged items involved parked cars that were not associated with the school.

Website Communication of the Traffic Plan

The Maranatha High School Traffic page also provides a street map to the school, with directions specifically directing traffic to approach and depart from the school via Elizabeth Street.

Active Commitment to the Traffic Plan

Maranatha High School staff is assigned to monitor and direct traffic patterns during the peak drop-off and pick-up times, to keep traffic moving smoothly, and to direct drivers, when necessary to follow the prescribed traffic patterns.

In addition to observations conducted for this report and summarized above, Maranatha High School administration has provided the following self-evaluation regarding their efforts to monitor and enforce the Traffic Plan:

Faculty members are assigned to monitors the traffic and parking situation daily at school. This has proven effective. Most anomalies to the traffic patterns are observed to occur primarily when parents or students are late. When faculty members observe students not following the traffic plan, they inform the principal in writing and the principal speaks directly to the student. Any discussion regarding traffic or parking infractions is noted on the student's parking permit. The first time, the student gets a warning. The second time, they lose their parking permit for a week. A third time results in loss of their parking permit for the remainder of the year. This has been effective with the students. Seventeen students have one warning. None have two.

Parking Permits

Student parking is allowed by permit only, and students are assigned to park in specified parking areas. Students without parking permits are not authorized to drive to school. Students observed parking on the streets around the school are reprimanded, and reminded that they are not authorized to drive to school.

Carpool Incentives

The administration offered parking incentives to students who carpool. Students who agreed to carpool were given priority in receiving parking permits. Fifty-eight of the 104 student parking permits are carpool permits.

Communications with Parents and Neighbors

The Maranatha High School administration has actively communicated the traffic programs to the parents and students of the school. Copies of various communications that have been issued by Maranatha High School to parents and students, via newsletters, letters and memos, flyers, and posters about traffic patterns, pick-up and drop-off routines, parking restrictions and requirements, carpooling, etc. are included in Appendix A.

UPDATED INTERSECTION EVALUATION

The original traffic study prepared for Maranatha High School's CUP provided an evaluation of four intersections in the immediate area of the WCIU campus:

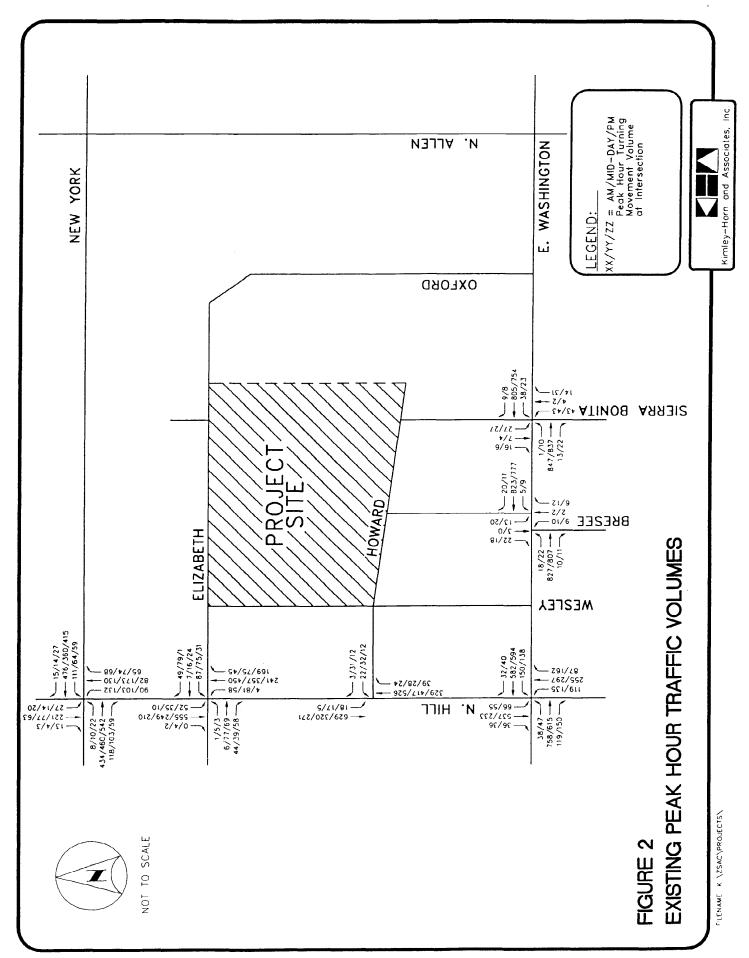
- N. Hill Street at E. Howard Street.
- N. Hill Street at E. Washington Street
- Bresee Avenue at E. Washington Street
- Sierra Bonita Avenue at E. Washington Street

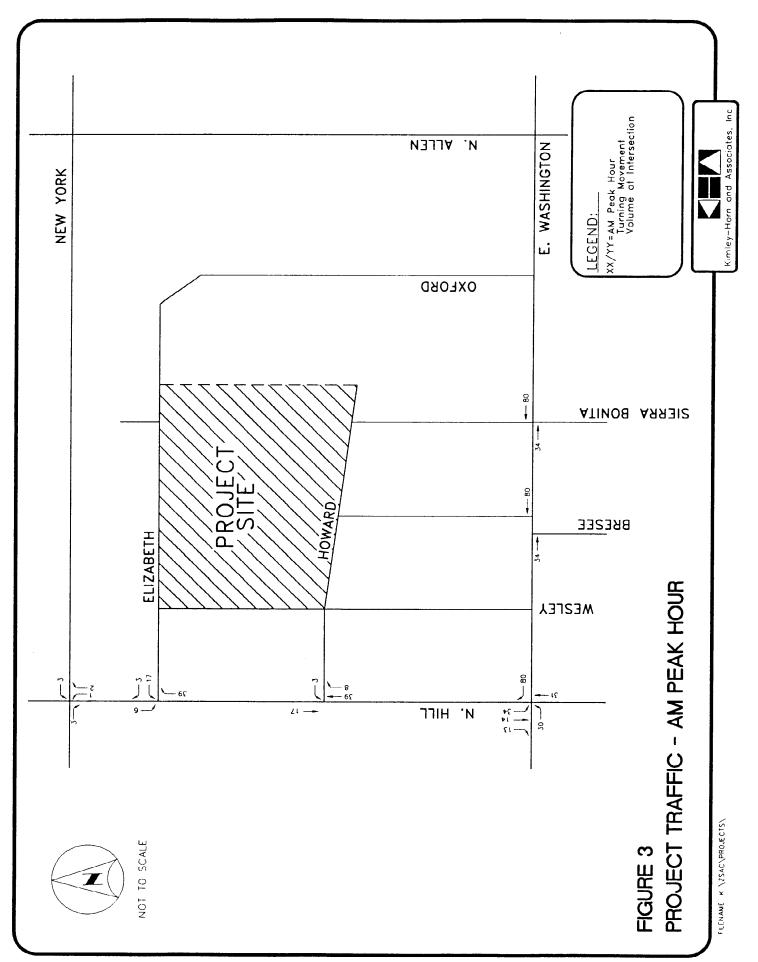
Morning and evening peak hour traffic counts were taken at these intersections in March, 2002, prior to the opening of the Maranatha High School on the WCIU campus. These counts are shown on **Figure 2**. The traffic study indicated that the Maranatha High School would not cause a significant impact at these study intersections, based on the proposed 650 student enrollment, and the proposed routing plan (which assumed the majority of the school traffic would use Wesley Avenue, Bresee Avenue and Sierra Bonita Avenue).

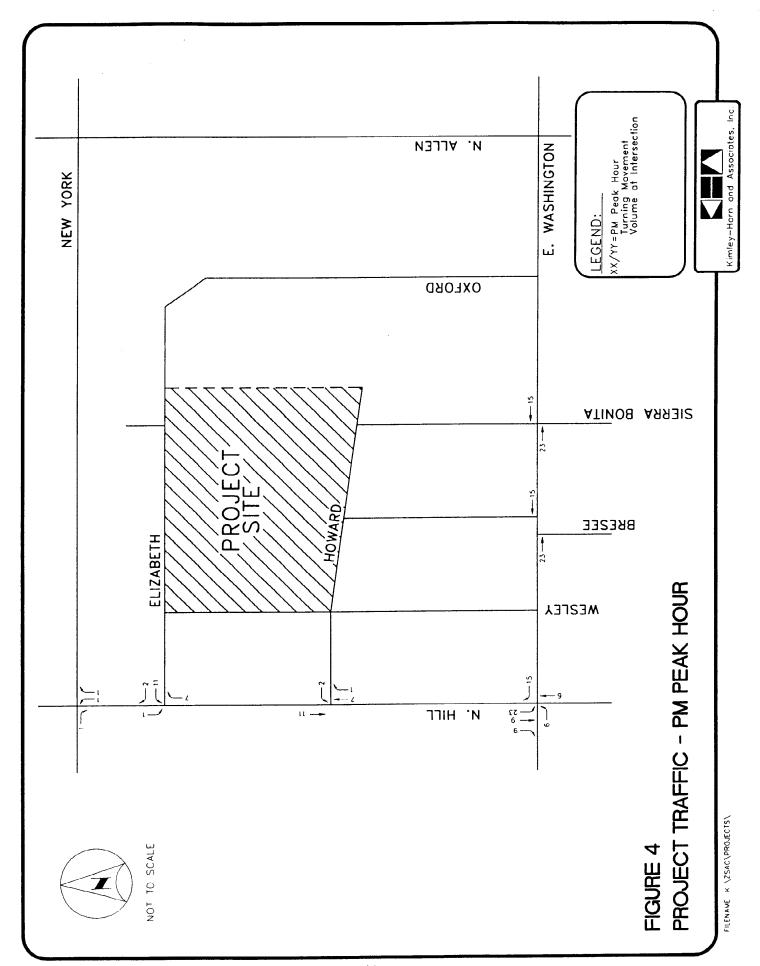
Each of these intersections has been evaluated again, assuming the maximum approved enrollment of 520 students, and assuming the approved school routing plan. The intersection of N. Hill Street at Elizabeth Street and N. Hill Street at New York Drive was added to the analysis.

In April and May, 2003, morning, midday, and evening peak hour counts were taken at the intersections of N. Hill Street at Elizabeth Street, and N. Hill Street at New York Drive on a typical weekday when school was in session. The intersection of N. Hill Street at Howard Street was also counted again in 2003, since access to the Mott Lot is via E. Howard Street. These counts are also shown on Figure 2, presented previously. The counts taken in 2003 include existing traffic generated by the Maranatha High School.

Project traffic at the study intersections was reassigned based on the reduced maximum enrollment (reduced from 650 to 520 students), and the revised drop-off and pick-up traffic patterns. Morning peak hour project traffic is shown on **Figure 3**, and afternoon peak hour project traffic is shown on **Figure 4**. For the intersections of N. Hill at E. Washington, Bresee Avenue at E. Washington, and Sierra Bonita Avenue at E Washington, the total school traffic was added to the existing counts, because the counts were taken prior to the school's opening. For the intersections of N. Hill at Elizabeth Street, N. Hill at E. Howard, and N. Hill at New York Drive, the existing school traffic (442 students) is already included in the counts, since the counts were taken on a typical school day after the school opened. For these three intersections only, project traffic was factored to reflect the potential increase to a maximum of 520 students.







The study intersections were analyzed for morning and afternoon peak hour operation. A summary of the existing peak hour operations is provided on **Table 1**, and Existing Plus School traffic intersection operations are summarized on **Table 2**. As review of these tables shows, Maranatha High School traffic will not cause a significant impact at any of the study intersections.

The intersections of N. Hill Street at E. Howard Street and N. Hill Street at Elizabeth Street were looked at in more detail, because of their proximity to the school. These intersections are both two-way stop sign controlled, with stop signs on the side streets (E. Howard Street and Elizabeth Street) only, and no stop control on N. Hill Street. At both intersections, all side street movements were found to operate at LOS C or better in each of the study peak hours, including the morning and midday peaks, when school traffic is at its highest. Analysis worksheets are provided in *Appendix B*. Review of the results shows that side street delays, which are caused when vehicles at the stop sign need to wait for a gap in the traffic stream on Hill Street, are greatest in the morning peak hour, but are still no worse then LOS "C".

Signal warrant analyses were also conducted at these intersections to determine if installation of a signal is warranted with Maranatha High School traffic. Signal warrant worksheets are provided in *Appendix C*. Neither intersection warrants installation of a signal during any of the peak periods evaluated.

CONCLUSION

Based on observations and counts, the traffic distribution from Maranatha High School is via N. Hills Street, primarily to Elizabeth Street, with the Mott Lot users utilizing E. Howard Street. Accordingly, within the designated area-wide traffic study area between Topeka Street and the WCIU/Taylor Street properties on the north, Mountain Street on the south, Oxford Avenue/City Boundary/Allen Street on the east and Michigan Avenue on the west, Maranatha High School traffic is centered on N. Hill Street for north-south travel and on Elizabeth Street and E. Howard Street for east-west travel.

TABLE 1 SUMMARY OF INTERSECTION OPERATION FOR EXISTING CONDITIONS

Signalized Intersections	AM Peak	Hour	Mid-Afterno Hour	
	ICU (1)	LOS	ICU (1)	LOS
E. Washington at N. Hill	0.900	D	0.747	С
E. Washington at Sierra Bonita	0.407	A	0.419	A
N. Hill at New York Drive	0.639	В	0.677	В
Unsignalized Intersections	AM Peak	Hour	Mid-Afterno Hour	
<u> </u>	Delay (2)	LOS	Delay (2)	LOS
E. Washington at Bresee				
- Northbound Approach	31.8	D	26.0	D
 Southbound Approach 	26.3	D	27.3	D
 Eastbound Left 	9.6	A	9.4	A
 Westbound Left 	9.5	A	9.4	Α
N. Hill at Elizabeth Street				
- Northbound Approach	8.7	A	8.1	Α
- Southbound Approach	8.3	A	8.3	A
- Eastbound Left	9.5	A	11.4	В
- Westbound Left	12.0	В	12.8	В
N. Hill at E. Howard Street				
- Westbound Approach	18.9	C	14.2	В
- Southbound Left	8.0	A	8.2	Α

⁽¹⁾ ICU = volume-to-capacity ratio for signalized intersections,
(2) Delay = average vehicle delay in seconds for unsignalized intersections.

TABLE 2

SUMMARY OF INTERSECTION OPERATION FOR EXISTING PLUS PROJECT CONDITIONS

Sionalized Intersections		AM P	AM Peak Hour			Aid-Aftern	Mid-Afternoon Peak Hour	lour
	ICU (1)	ros	Impact	Significant?	ICU (I)	TOS	Impact	Significant?
E. Washington at N. Hill	0.917	E	0.017	Z	0.765	၁	0.018	z
E. Washington at Sierra Bonita	0.429	A	0.022	z	0.426	A	0.007	z
N. Hill at New York Drive	0.641	В	0.002	z	0.681	В	0.004	z
;		AM P	AM Peak Hour			Iid-Aftern	Mid-Afternoon Peak Hour	our
Unsignalized Intersections	Delay (2)	ros	Impact		Delay (2)	ros	Impact	
E. Washington at Bresee								
- Northbound Approach	36.3	Ω	4.5		27.3	Q	1.3	
- Southbound Approach	30.5	Ω	3.8		28.5	D	1.2	
- Eastbound Left	6.6	A	0.3		9.5	A	0.1	
- Westbound Left	9.6	A	0.1		9.5	A	0.1	
N. Hill at Elizabeth Street								
- Northbound Approach	8.8	A	0.1		8.1	A	0.0	
- Southbound Approach	8.4	A	0.1		8.3	A	0.0	
- Eastbound Left	9.7	A	0.2		11.5	В	0.1	
- Westbound Left	15.7	ပ	3.7		16.8	၁	4.0	
N. Hill at E. Howard Street								
- Westbound Approach	20.5	ပ 	1.6		14.5	В	0.3	
- Southbound Left	8.2	A	0.2		8.3	Ą	0.1	

(1) ICU = volume-to-capacity ratio for signalized intersections, (2) Delay = average vehicle delay in seconds for unsignalized intersections.

The school administration has demonstrated a commitment to successfully carrying out the school's Traffic Plan. Observations showed that the Maranatha High School traffic management plan successfully restricts the majority of school traffic to the prescribed routing plan, and that school-related traffic on other streets within the traffic study area is limited. A traffic log is kept of all calls and communications received regarding traffic and parking concerns, and the action taken. In addition, the school has its own self-policing procedures to detect and correct any driving or parking infractions. The school administration has also been notified of any deviations from the approved drop-off and pick-up routing plan observed during the preparation of this report.

The project traffic has been shown to have no significant impact on intersections in the immediate vicinity of the school, and no traffic improvements (stop signs, traffic signals, speed humps, etc.) are warranted.

APPENDIX A

Maranatha High School Traffic Plan Communications







Maranatha 🦠

About Maranatha

Admissions

Guidance Office

Athletics Spring Sports

Student Life

Development

Calendar

Maranatha Home

Traffic

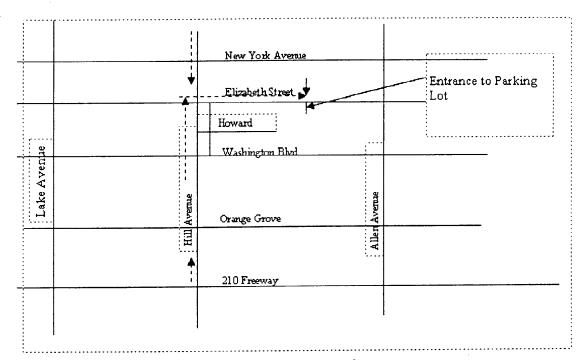
SOS

24 Hour Hotline

Contact: David Ekstrand, Traffic & Security Director Phone: 626-720-8218 • Email: d_ekstrand@maranatha-hs.org

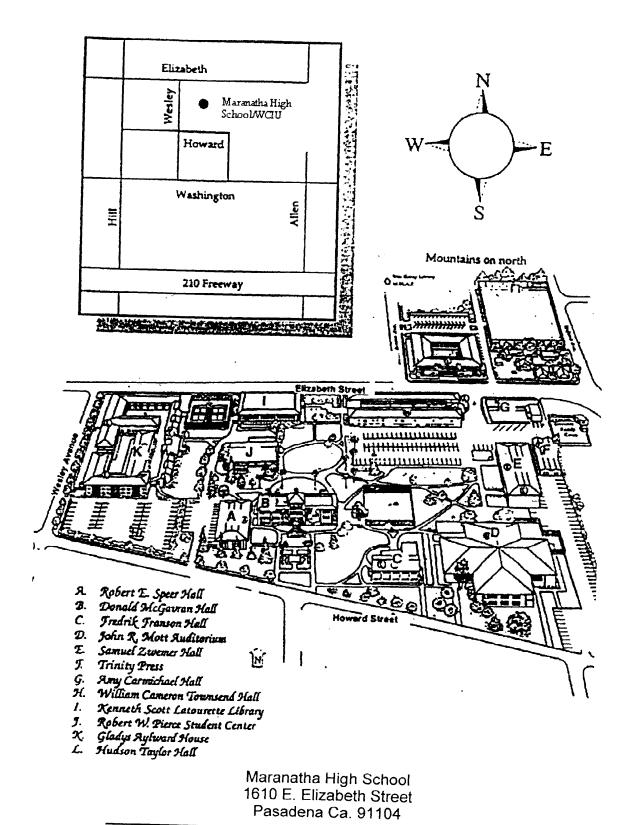
Traffic Center

From either north or south, please be sure to use Hill Avenue and go east on Elizabeth Street to get to Maranatha High School.



Maranatha High School 1610 E. Elizabeth Street Pasadena Ca. 91104

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Traffic Log

Maranatha High School 1610 E. Elizabeth Street Pasadena CA 91104

- 9-12-02 Two students went to Connel's for lunch.

 Action: they were suspended on 9/12 for the rest of the day.
- 9-13-02 Neighbor on Elizabeth Street.

 Two Four Wind busses dropped off students on Elizabeth Street. They had been informed of the proper drop off sight before the beginning of the trip. Action: John Rouse spoke to the drivers.
- 9-13-02 Frank Keeney 626-318-3431 @ 3:40, Topeka Ave.

 Complained that Four Winds busses coming back from Uprising, entered the campus on Topeka at a high rate of speed. He as well notified Four Winds immediately. I contacted Four Winds on Monday, September 16, 2002, and then notified the resident. The busses had been given maps and instructions to only enter on Elizabeth Ave.
- 9-15-02 Gary Johnson, No Phone # @7:55 Sierra Bonita Ave
 Notified us of the number of cars that were entering the school on Sierra
 Bonita. I assured him that we would continue to train our people on the
 proper entrances to the school. He complimented us about the mailed
 schedules. No follow up needed.
- 9-25-02 Gary Johnson #398-6883, 1451 Sierra Bonita Ave. @3:31 p.m. Called regarding "teachers and students" exiting the campus on Sierra Bonita. He felt there was more traffic on his street than should be. Talked especially about pick -up trucks. Left msg with John R. to make sure the teacher at that post was monitoring the traffic closely. Called 4:20 p.m. on 9-26 to tell him that. Left a msg.
- 10-4-02 Raffi, #794-1406, 1520 E. Howard @ 8:04 a.m.
 Called to complain about 6-7 cars that were parked on the street for the last 3 days that had not been moved during that time. I called Harvest Rock, assuming the cars were from The Call students. Called the neighbor back @ 8:30 and informed him they were not our cars and that I had notified Harvest Rock. He said he was going to give the police a call if they were not moved. Pleasant demeanor.
- 10-4-02 Ida from Howard and Sierra Bonita corner, 791-1626, 9:48 a.m.

 Left a message to complain about student cars parking on the street all of this week. Had taken down license plate #'s (4JKG579, 4EME211, 3BEZ627, 2RFM618, 4USH470) of the offending cars. Claimed the kids

had Maranatha High School logo shirts on. Also stated that parents were dropping off kids at the same corner, making a U-turn and going back south on Sierra Bonita. Called back on 10-7-02 at 4:15 p.m. when I heard the message. At the end of the conversation she added that the cars that leave Mott Lot after school are speeding. Action: told her that I would make sure the on-duty teacher would be notified of the infractions and to look out for the kids. Reminded her about Judson parents and The Call students, but she insisted that the kids had MHS logo shirts on.

- 10-9-02 Student did not obey traffic flow instructions given by on duty teacher.

 Action: driving privileges were suspended. Parking sticker #111.
- 10-11-02 Two students went to the store on Hill during school. Action: they were suspended for the day on 10/14.
- 11-22-02 George Halley (w) 797-7904 (c) 676-2513 (h) 791-2679 @ 10:54 a.m. Called with questions about the scope of the traffic study and to report that there were 4 cars he assumed were MHS students parked in front of his house (Elizabeth and Hill). License # 4YIK508 (Windstar), 4ANX897 (Corolla), 4NKB475 (Prius), and 1E56435 (Dodge truck). Called back at 4:45 p.m. Promised to follow up with Kimly-Horn on the scope of the traffic study (subsequently Serene called and said the scope had not yet been set).
- 2-10-03 Rose, 1451 Sierra Bonita, 9:00 a.m.

Called to say a MHS student car has been parked in front of her house for the past 2 weeks. Red Accura Legend, #4VIH032.

Action: Student has been notified she is not authorized to drive to school.

2-11-03 Mike on Oxford 1:42pm

Called concerned over traffic. Spoke to John Rouse. Would not identify Specific traffic concern or give address of his house.

Action: none taken

2-13-03 Unidentified caller. 2:45 p.m.

Vivian received a call from a very irate neighbor complaining about the traffic. He was trying to go east on Elizabeth St. during car-line. He was very vulgar. Because of that, Vivian released the call. Jason Gregory went to Elizabeth St. to investigate because the man was laying on his horn. The man was rude and vulgar, f--- you and s---, to Jason, and a couple of other teachers. As the man departed, he said "Take care of this, a—hole. Jason observed him pull into a house on the corner of Oxford and Elizabeth.

Action: none taken.

3-21-03 Rosarita Orbert (?) 1791 N. Sierra Bonita Ave, 794-4921, 5:58 pm. Called to notify us of increased traffic on Sierra Bonita Ave. in the morning coming south from New York Dr. They stated it was getting harder to exit their driveway.

Action: Resend notification to parents to only use Elizabeth St. and Howard St. to enter the campus. Posted someone at the corner of Sierra Bonita and Elizabeth to observe who it is that is not obeying the rules. As well, passed out flyers to parents, most of which were Judson parents, with estimated four MHS parents that came south on Sierra Bonita. Included the announcement in the next Minutegram