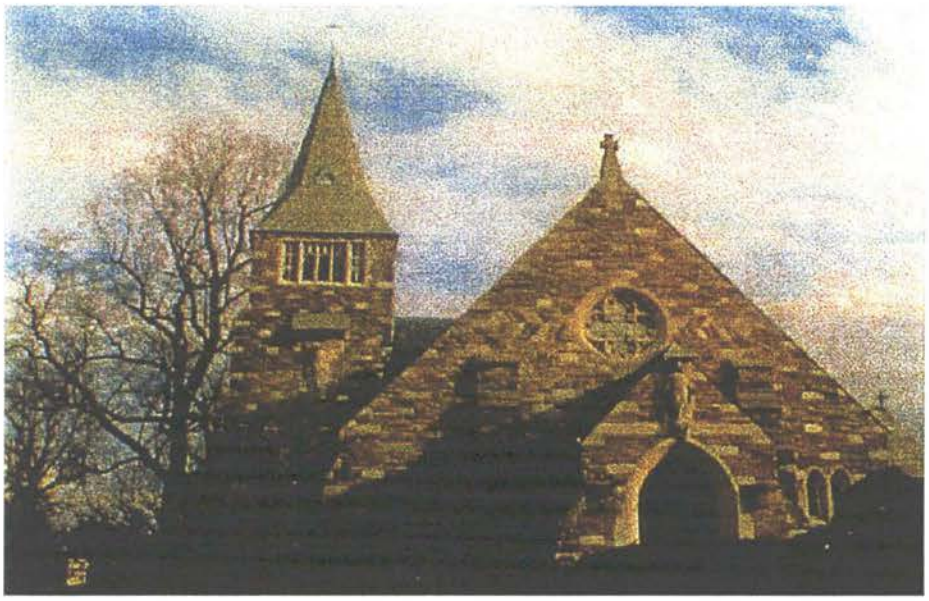
THE SHRINE OF THE MOST BLESSED SACRAMENT
Traffic Operation Plan



Prepared For

The Shrine of the Most Blessed Sacrament
Washington, D.C.

Prepared by

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February 24, 2000

BZA
Case No. 16561
Exhibit No. 23

Board of Zoning Adjustment
District of Columbia
CASE NO.16561
EXHIBIT NO.23

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INTRODUCTION

The purpose of this report is to present a Traffic Operation Plan (TOP) to improve traffic circulation and operations for the Shrine of the Most Blessed Sacrament School (SMBS). This report is being submitted as part of a Board of Zoning (BZA) application for the proposed expansion of the SMBS. This report also considers the expected growth in student enrollment from 500 students to 525 students. (NOTE: It is possible that student enrollment may ultimately increase to 600 students. This enrollment figure is less likely to occur and was therefore not included in the scope of this analysis.)

The SMBS is located in northwest Washington D.C. on Western Avenue - the boundary separating the District from Montgomery County, Maryland. It is located in the block bounded by Western Avenue to the northwest, Chevy Chase Parkway to the south, Quesada Street to the north, Chevy Chase Circle to the west, and a public alley to the east. The Shrine of the Most Blessed Sacrament Convent and Parish house are also located in this block. The regional site location is illustrated in Figure 1.

The SMBS expansion is being proposed in conjunction with the construction of a new Parish center and the renovation of the SMBS convent. Construction is planned to occur in the following phases:

- ***Phase 1 (August 2000 - June 2001)*** - Demolish and rebuild Parish center; Renovate existing convent.
- ***Phase 2 (April 2001 - November 2001)*** - Renovate school.

The objectives of this study have been to:

- Determine existing traffic conditions within the immediate site vicinity
- Determine trip generation associated with existing school enrollment
- Project future trip generation after enrollment increases
- Develop a circulation plan to improve safety conditions and minimize adverse impacts associated with the SMBS
- Determine that there is adequate space on the premises to accommodate the parking needs (according to zoning regulations) of the SMBS

Sources of data for this study include the Shrine of the Most Blessed Sacrament; Campus Management, LLC; KressCox Associates, P.C.; and the files and library of Gorove-Slade Associates, Inc.

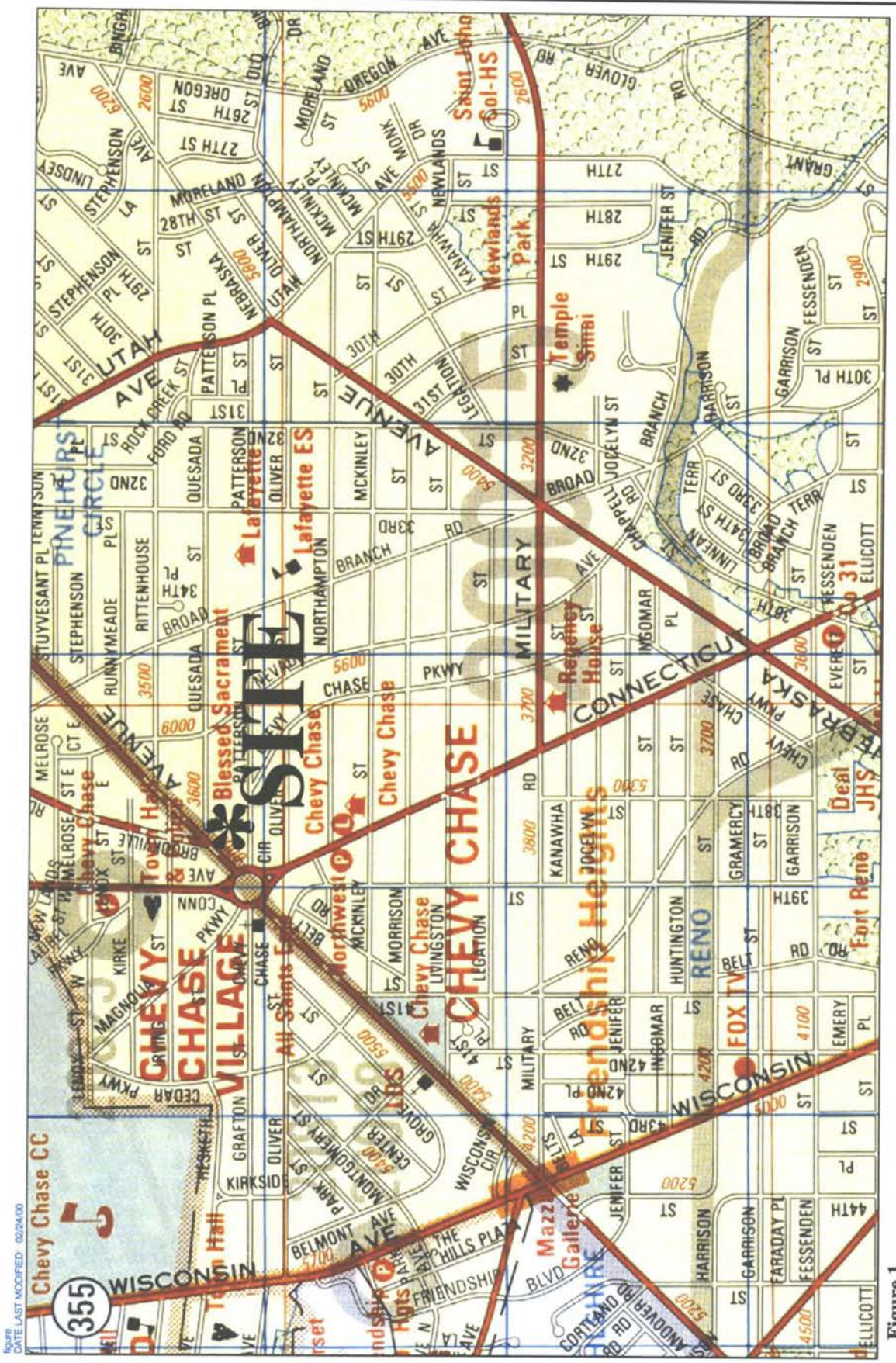


Figure 1
Site Location and Regional Roadway Network

Background Information

The SMBS currently consists of approximately 500 students (kindergarten through eighth grade) and 45 part-time and full-time staff (on a typical day there are only 30 staff members present at SMBS). School is in session from 8:15 AM until 3:05 PM for kindergarten through fifth grade (NOTE: Some kindergarten students are dismissed at 2:45 PM), and 8:10 AM until 3:10 PM for sixth through eighth grades. Approximately five to ten students participate in the before-school program (starts at 7:00 AM), and 40 students participate in the after-care program (ends at 6:00 PM).

The school has estimated that approximately 50% of it's students live in the District, and 50% live in Maryland. Approximately 90% live within the Parish district, which includes residents who live within a one mile radius of the school. The remaining 10% live in Maryland or the District, but further than one mile away. An estimated 20% or 100 students arrive to school each day by walking. The remainder are dropped-off and picked-up by a parent or guardian.

EXISTING CONDITIONS

Existing Roadway Network

The SMBS is located in the block bounded by Western Avenue to the northwest, Quesada Street to the north, Chevy Chase Parkway to the south, Chevy Chase Circle to the west, and a public alley to the east. The roadways within the site vicinity area are described below and are illustrated in Figure 2.

- Western Avenue is a northeast-southwest arterial roadway that serves as the border separating the District from Montgomery County, Maryland. Western Avenue extends from Westmoreland Circle to Rock Creek Park. In the vicinity of the site, Western Avenue is a four-lane roadway with parking permitted on both sides of the street.

- Chevy Chase Parkway is primarily a north-south local roadway that extends from Garrison Street to Chevy Chase Circle. In the immediate vicinity of the school, Chevy Chase Parkway traverses east to west. Chevy Chase Parkway is approximately 28 feet wide with parking permitted on both sides of the street. Parking is restricted on Chevy Chase Parkway in front of the school during school days.

- Quesada Street is a one-way eastbound residential roadway that extends from Western Avenue to 31st Street. Quesada Street is approximately 28 feet wide with parking permitted on both sides of the street.

- Patterson Street is an east-west residential roadway that extends from Chevy Chase Parkway near the school to Broad Branch Road. Parking is permitted on both sides of Patterson Street.

The school is located adjacent to a 16 foot north-south public alley. In addition to serving as a point of access to the SMBS, the alley provides access to an east-west alley which serves several residential homes on Quesada Street and Patterson Parkway.

Existing Traffic Volumes

Existing traffic volumes were counted on Thursday February 3, 2000 from 7:45 AM - 8:45 AM, and 2:30 PM - 3:30 PM at the following locations:

- Quesada Street/Alley
- Chevy Chase Parkway/Alley

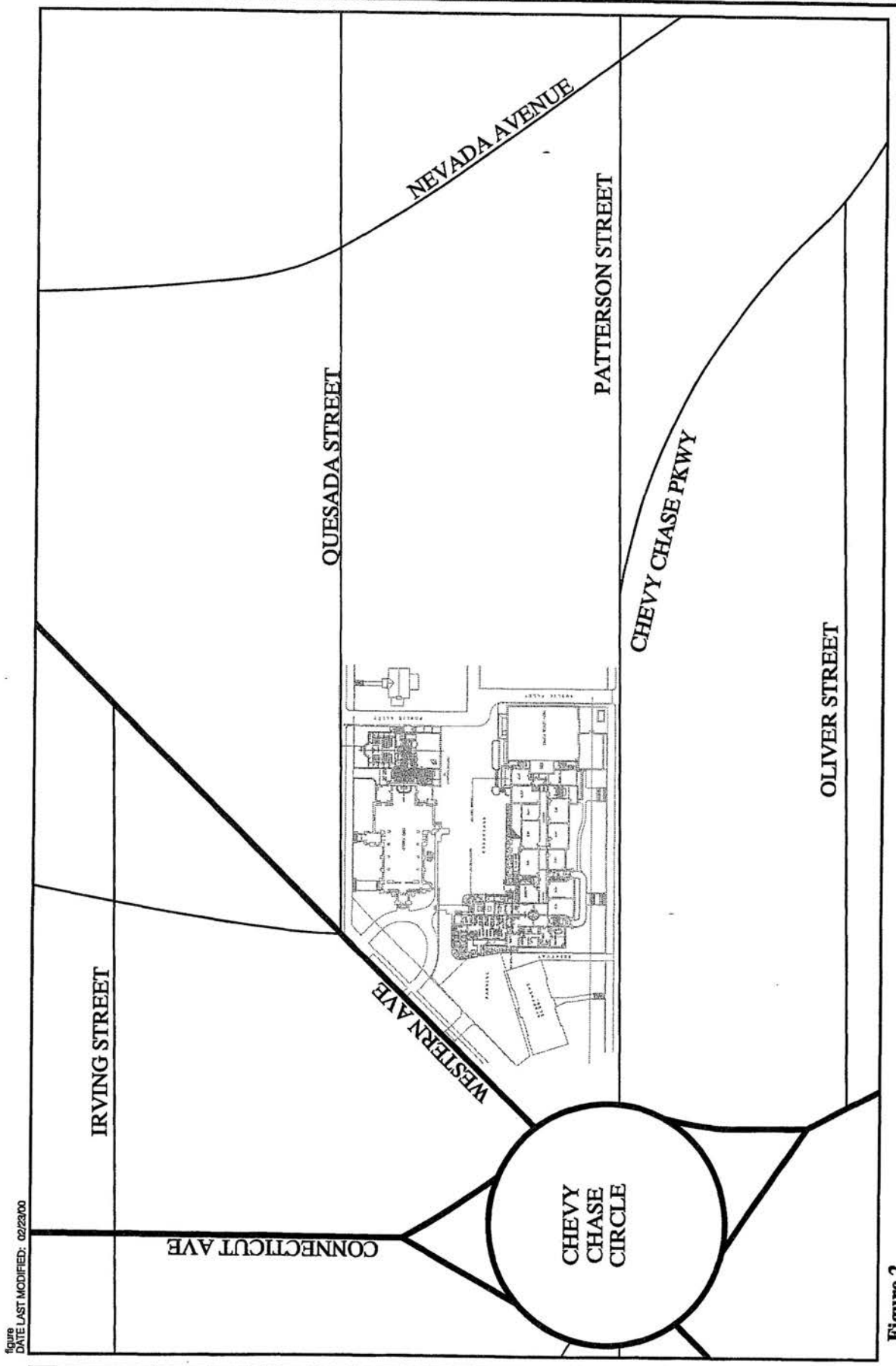


Figure 2
Local Roadway network

Traffic counts were conducted during the time periods that coincided with school start and dismissal times. It should be noted that traffic counts were conducted shortly after the January 2000 snow storm. Although travel paths were clear, some snow that remained on the sides of Chevy Chase Parkway contributed to motorists not being able to use the entire width of the street. This may have prevented some motorists the opportunity to pass other stopped vehicles and consequently helped to increase the length and duration of the queue. Although the snow may have had a slight impact, the information obtained from the February 3, 2000 count is still thought to be a good indicator of normal conditions. The existing peak hour traffic volumes are shown on Figure 3. Count summary sheets are included in the Technical Appendix to this report.

While traffic counts were conducted, observations were made to distinguish SMBS related traffic from residential traffic not associated with the school. Table 1 shows the number of drop-offs or pick-ups that occurred at the three primary locations.

Table 1
SMBS Trip Generation

	Quesada Street	Alley	Chevy Chase Pkwy	Total
AM Peak Hour	18	131	31	180
PM Peak Hour	21	29	128	178

It should be noted that Table 1 only includes SMBS vehicles that made drop-offs or pick-ups on Quesada Street in front of the rectory, on Chevy Chase Parkway in front of the school, and in the alley. Table 1 does not account for parents who chose to park on other neighborhood streets and walk to the SMBS to pick up their children, nor does it account for the small number of students that were dropped off on Western Avenue.

A random number of school related vehicles were surveyed to determine the automobile occupancy factor, or the average number of students that arrived in each car. It was determined that the auto occupancy factor for SMBS was approximately 1.5 students per vehicle.

Existing Vehicle Circulation

AM Drop-off
Currently, vehicles access the SMBS in the morning via Western Avenue, Quesada Street, Patterson Street, and Chevy Chase Parkway. A consistent flow of vehicles arrived at the school from about 7:50 AM until about 8:25 AM. The following vehicle circulation was observed in the morning:

- Most vehicles that access the school via Quesada Street use the alley for student drop-off. However, a few parents drop students off on Quesada Street and continue down to Nevada Avenue. Drop-off that occurs on Quesada Street and in the alley is orderly. Vehicles form a single file line and remain in that line until they have exited the alley onto Chevy Chase Parkway.

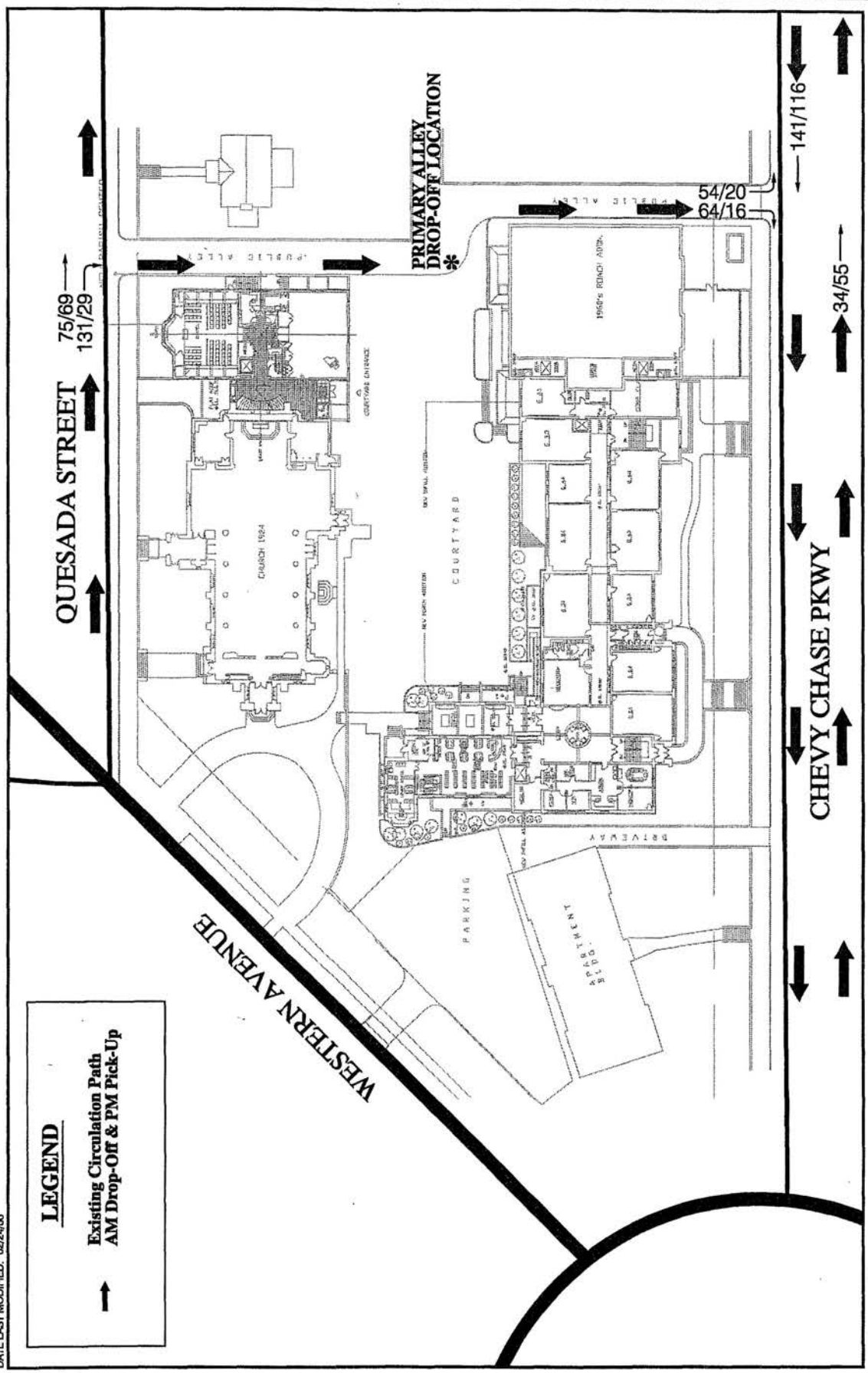


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Figure 3
Existing Traffic Volumes
and Circulation Paths

A queue of approximately 13 vehicles extended from the primary drop-off location in the alley onto Quesada Street back to Western Avenue. The maximum queue occurred approximately 8:15 and lasted approximately three minutes.

- There is no orderly system for drop-offs on Chevy Chase Parkway. Parents drop students off on both sides of the street and consequently block others from passing. In addition to drop-off activity that occurs on Chevy Chase Parkway, vehicles exiting the alley add to the traffic on Chevy Chase Parkway. These vehicles must then wait behind vehicles that have stopped in front of them for drop-offs. The lack of a set system on Chevy Chase Parkway helps to create a less than optimal situation. A queue of 10 vehicles was observed on Chevy Chase Parkway.

PM Pick-up

Currently, vehicles access the SMBS in the afternoon via Western Avenue, Quesada Street, Patterson Street, and Chevy Chase Parkway. Most parents use Chevy Chase Parkway to pick up students; however, kindergarten pick-up occurs in the alley (NOTE: Table 1 shows less activity in the alley during the PM drop-off period). In general, the PM drop-off circulation pattern is similar to the AM drop-off period circulation pattern. However, the afternoon appeared to have less order, particularly because everyone arrived during a five minute period (instead of a 35 minute period as is done during the AM), and students and parents were all walking around trying to find one another.

The kindergarten class dismissal occurred in a more orderly manner. Vehicles lined up in a single file line in the alley and the children stood in a line on the side of the school. The kindergarten teacher identified the parent driving the car and called the appropriate child or children over to get into the car.

The following additional observations were made during the afternoon drop-off period:

- A queue of approximately two vehicles extended from the drop-off location in the alley onto Quesada Street. The queue occurred at 3:00 PM and lasted approximately three to four minutes.
- A queue of 12 vehicles was observed on Chevy Chase Parkway. The queue lasted approximately two minutes.

The circulation patterns for the morning and afternoon are illustrated on Figure 3.

Parking Requirements

Zoning regulations require two parking spaces for every three staff members at an elementary school. Since SMBS has approximately 30 staff on site at any one time, they are required to have 20 parking spaces. If the entire courtyard is utilized, SMBS can accommodate approximately 70 parked cars. However, SMBS uses a portion of the courtyard for recess activity for students during the day. Therefore, the effective parking area is reduced to approximately 30 vehicles. This is an adequate supply to accommodate staff parking on-site.

FUTURE CONDITIONS

Traffic Generation

Traffic expected drop-off and pick-up students in the future was projected by considering the following: 1) changes in existing circulation patterns due to the implementation of the planned TOP, and 2) the projected student population increase from 500 students to 525 students (5% increase).

Part of the TOP includes a policy that will likely discourage parents from parking in the neighborhood and walking to the school to pick up their children. We expect that in the future these parents (an estimated 50 vehicles) will join the organized queue of vehicles that will use Chevy Chase Parkway and the alley to pick up students. The additional 50 vehicles is only expected during the afternoon period.

Table 1 indicated 180 AM and 178 PM peak hour school related drop-off and pick-up vehicles. These numbers are expected to increased by 5% to project a future traffic generation of 189 AM, and 187 PM volumes.

Adding the 50 vehicles that are expected to use the queue line to the expected increase in student population equates to a projected 189 drop-off vehicles and 237 pick up vehicles. The 189 vehicles will arrive over a 35 minute period in the morning. The 237 vehicles will arrive during a five to ten minute period and will therefore result in longer queues. The queues will extend down Chevy Chase Parkway and onto Patterson Street. The queue will start to dissipate over a five to ten minute period due to the implementation of the TOP.

Traffic Operations

A site access and circulation system was developed to improve the overall operation of SMBS-related vehicles. In the morning students may be dropped off in two areas - the public alley, and the westbound or northern side of Chevy Chase Parkway. Drop-off will not be permitted on the eastbound side of Chevy Chase Parkway so that other traffic on Chevy Chase Parkway will not be impeded. In the afternoon, students will be picked up in the alley and on Chevy Chase Parkway. The planned circulation plan is shown in Figure 4.

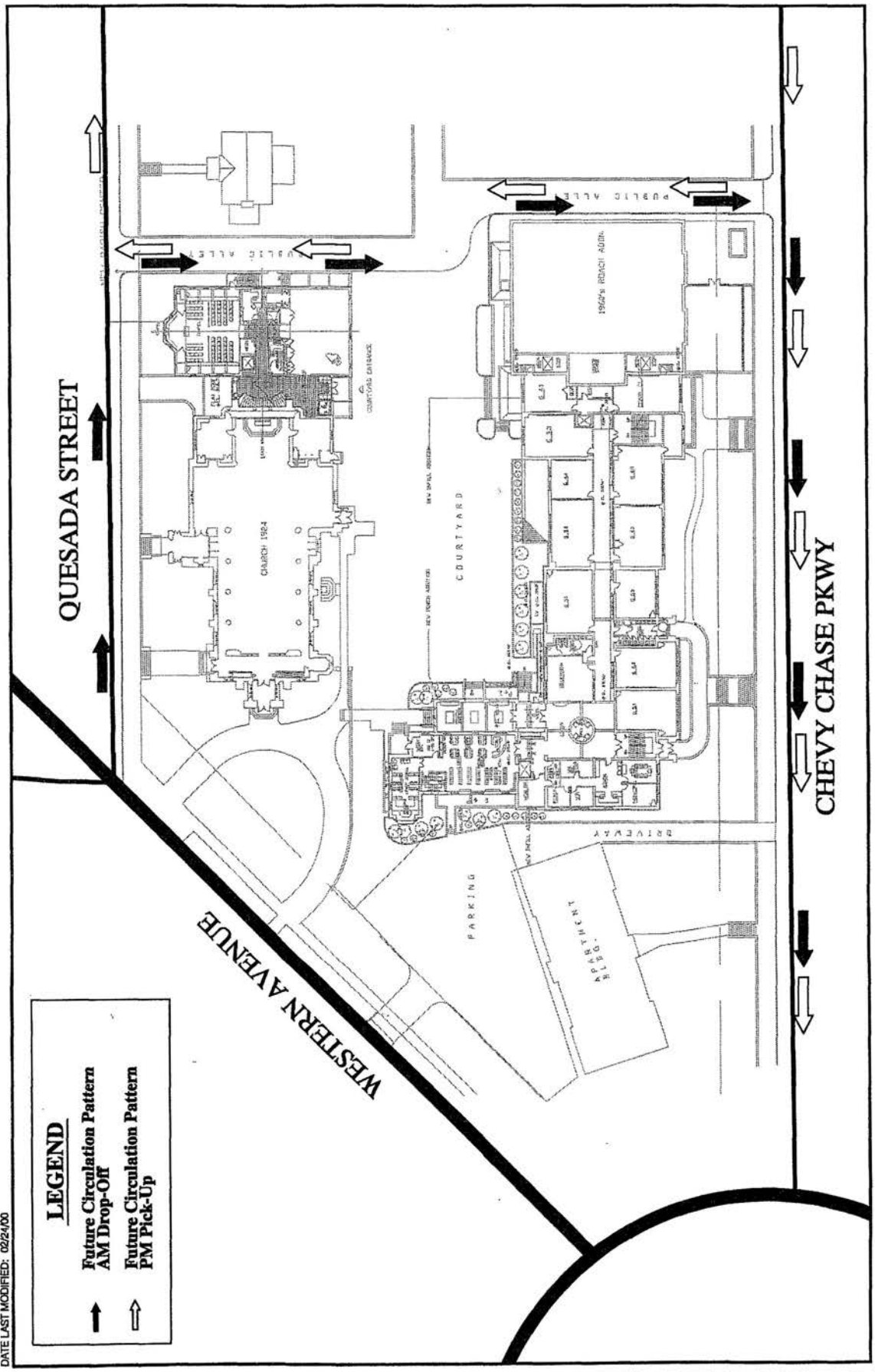


Figure 4
Total Future Drop Off and Pick Up Campus Circulation

Traffic Operations Plan

In conjunction with the new circulation plan, a traffic operation plan will be implemented to improve traffic conditions and to create a safer environment. An integral part of this plan includes the support of SMBS staff to strictly enforce the plan. The following elements are planned to be implemented as part of the plan:

AM Drop-off

- SMBS staff will be stationed at Quesada Street, Chevy Chase Parkway, and the alley to make sure parents follow drop-off procedures.
- Parents will only be allowed to drop students off in two locations - in the alley and on the westbound side of Chevy Chase Parkway.
- Parents will continue to access the alley through a one-way circulation system via Quesada Street.
- Drop-offs that occur on the westbound side of Chevy Chase Parkway will only occur in the parking lane (parking is prohibited during school hours). Double parking will not be permitted. This will allow continuous two-way traffic to flow on Chevy Chase Parkway in the travel lanes.

PM Pick-up

- SMBS staff will be stationed at Quesada Street, Chevy Chase Parkway, and the alley to make sure parents follow pick-up procedures.
- All students will wait in the gymnasium and will not be dismissed until they have been notified that their parent has arrived. This will reduce the number of vehicle/pedestrian conflicts.
- Parents will be designated to pick-up their children in a specific "pick-up zone". The parent will display a colored sign in the windshield of his/her vehicle so that he or she can be easily identified.
- Staff members will be stationed at each of the "pick-up zones" and will use a walkie-talkie system to notify the staff member located in the gymnasium when a parent has arrived. The staff member in the gymnasium will then broadcast all of the carpools that have arrived. Once the students have heard their carpool announced they will be dismissed from the gymnasium. Once outside, the student will be able to quickly identify their parent who will be parked in a predetermined area. This will reduce the time a student must search for a parent and thus reduces the time the parent must spend parked in the street or in the alley. This will help to reduce the duration and maximum length of queues.
- Students who walk home will be dismissed approximately ten minutes after other students are dismissed. This will help to reduce the number of pedestrian/vehicle conflicts.
- Parents who park in the neighborhood and walk to the school to pick up their children will be asked to wait in the gymnasium until walkers are dismissed

(approximately ten minutes after other students are dismissed). This practice will likely discourage parents from parking in the neighborhood since they may not want to wait ten additional minutes before they are permitted to leave.

Parking Requirements

Zoning regulations require two parking spaces for every three staff members at an elementary school. SMBS may increase it's staff to 35 (actual staff number will be higher; however there will be less than 35 staff members on-site at one time) and will require 24 parking spaces. If the entire courtyard is utilized, SMBS can accommodate approximately 70 parked cars. However, SMBS uses a portion of the courtyard for recess activity for students during the day. Therefore, the effective parking area is reduced to approximately 30 vehicles. This is an adequate supply to accommodate the projected number of staff on-site.

CONCLUSIONS

The purpose of this report is to present a Traffic Operation Plan (TOP) to improve traffic circulation and operations for the Shrine of the Most Blessed Sacrament School (SMBS) in northwest Washington, D.C. This report is being submitted as part of a Board of Zoning (BZA) application for the proposed expansion of the SMBS. This report also considers the expected growth in student enrollment from 500 students to 525 students. (NOTE: It is possible that the student enrollment may ultimately increase to 600 students. This enrollment figure is less likely to occur and was therefore not included in the scope of this analysis.)

The major conclusions presented in this report are listed below:

Existing Conditions

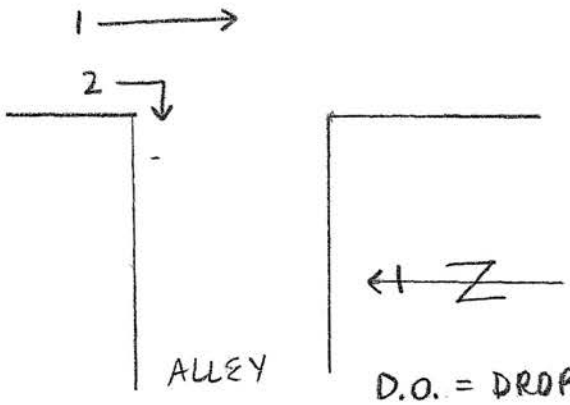
- A total of 180 AM drop-offs, and 178 PM pick-ups occurred at Quesada Street, the alley, and along Chevy Chase Parkway.
- The peak drop-off period occurred between 7:50 AM and 8:25 AM. The peak pick-up period occurred between 3:00 PM and 3:10 PM.
- During AM drop-off - A queue of approximately 13 vehicles extended from the primary drop-off location in the alley onto Quesada Street back to Western Avenue. A queue of 10 vehicles was observed on Chevy Chase Parkway.
- During PM pick-up a queue of approximately two vehicles extended from the drop-off location in the alley onto Quesada Street. A queue of 12 vehicles was observed on Chevy Chase Parkway.
- There is adequate space in the courtyard to accommodate the number of parking spaces required per zoning regulation (20 spaces).

Future Conditions

- The SMBS can expect 189 AM drop-off vehicles, and 237 PM pick-up vehicles in the future.
- A Traffic Operation Plan (TOP) is planned to be implemented to improve the overall operation of SMBS-related vehicles.
- In the future, AM drop-offs and PM pick-ups will only occur in the alley and on the westbound side of Chevy Chase Parkway.
- An integral part of the TOP includes the support of SMBS staff to strictly enforce the plan.
- During the afternoon, parents will be designated to pick-up students in a designated "pick-up zone" so that children will be able to easily identify where their parents are parked.
- The implementation of this TOP will enhance existing conditions and create an improved situation for traffic conditions as well as safety.
- There is adequate space in the courtyard to accommodate the number of parking spaces required per zoning regulation (24 spaces).

TECHNICAL APPENDIX

QUESADA

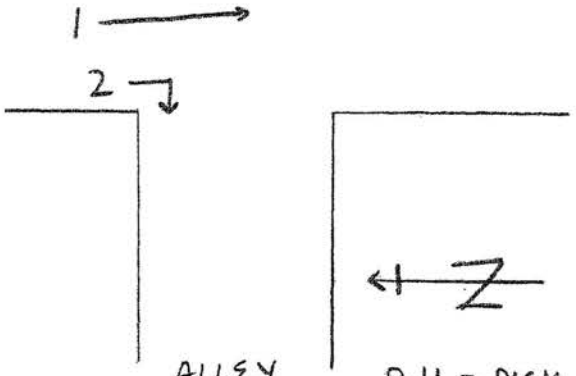


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Quesada/ Alley			
Intersection			
NW, DC			
Municipality/County/State			
02/03/2000	Thursday	15 min	Cold
Date	Day	Interval (15 min/1 hr)	Weather
N. White			
Counted By			

Approach Direction and turning movement	→	↓	D.O.									
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7:00 AM to 7:15 AM												
7:15 AM to 7:30 AM												
7:30 AM to 7:45 AM												
7:45 AM to 8:00 AM	7	14	4									
8:00 AM to 8:15 AM	22	67	8									
8:15 AM to 8:30 AM	25	48	6									
8:30 AM to 8:45 AM	3	2	0									
8:45 AM to 9:00 AM												
9:00 AM to 9:15 AM												
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9:30 AM to 9:45 AM												
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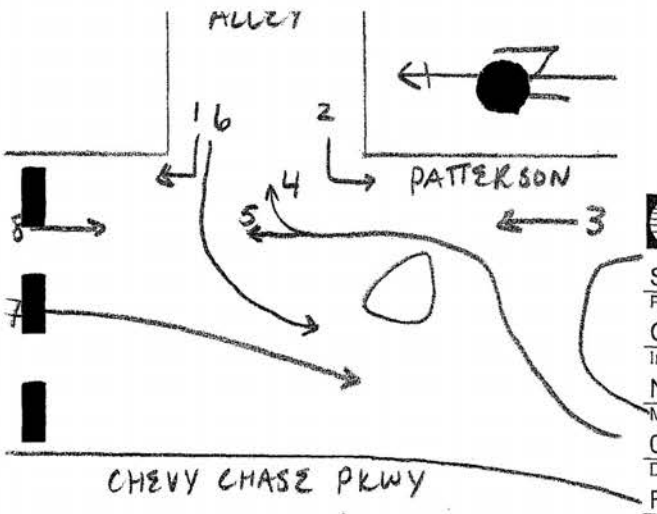
QUESADA



OFFICIAL TRAFFIC VOLUME SURVEY

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Quesada/ Alley (Intersection)			
NW, DC (Municipality/County/State)			
02/03/2000 (Date)	Thursday (Day)	15 min (Interval (15 min/1 hr))	Cold (Weather)
M. Weil (Counted By)			

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2:15 PM to 2:30 PM												
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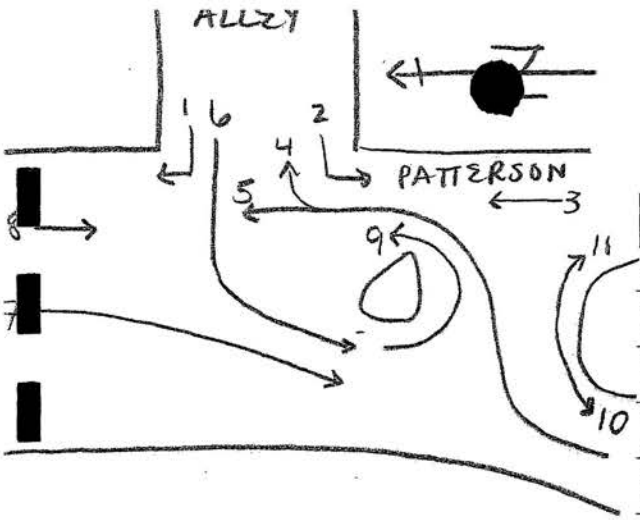


OFFICIAL TRAFFIC VOLUME SURVEY

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Chevy Chase Pkwy/ Patterson/ Alley (Intersection)	
NW, DC (Municipality/County/State)	
02/03/2000 (Date)	Thursday (Day)
15 min (Interval (15 min/1 hr))	Cold (Weather)
R. Savoy (Counted By)	

D.O. = DROP OFFS

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7:30 AM to 7:45 AM												
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9:30 AM to 9:45 AM												
9:45 AM to 10:00 AM												
10:00 AM to 10:15 AM												
10:15 AM to 10:30 AM												
10:30 AM to 10:45 AM												
10:45 AM to 11:00 AM												



OFFICIAL TRAFFIC VOLUME SURVEY

SMBS			1740-001
Project Name			Project Number
Chevy Chase Pkwy/ Patterson/ Alley			
Intersection			
NW, DC			
Municipality/County/State			
02/03/2000	Thursday	15 min	Cold
Date	Day	Interval (15 min/1 hr)	Weather
R. Savoy			
Counted By			

P.U. = PICK UPS

Approach Direction and turning movement	↲	↳	←	↰	↰	↘	↘	→	↺	↺	↱	P.U.
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2:00 PM to 2:15 PM												
2:15 PM to 2:30 PM												
2:30 PM to 2:45 PM	1	4	8	0	14	0	3	3	3	2	1	
2:45 PM to 3:00 PM	7	4	16	0	11	0	2	7	3	0	2	
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