
Transportation Impact Study

The Field School

Washington, DC

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Prepared for:
The Field School



Board of Zoning Adjustment
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EXECUTIVE SUMMARY

The following report presents the findings of a Transportation Impact Study (TIS) conducted for The Field School in support of its application to the Board of Zoning Adjustment (BZA). This case intends to increase the student and faculty/staff population while adding additional building space. The subject property is located within Lots 856, 861, 878, and 879 in Square 1341 along Foxhall Road in Ward 3 of Washington, DC. The proposed BZA application requests an increase in the student population to 400 (from 323) students along with an increase to 110 (from 77) full time equivalent (FTE) faculty and staff. A review of the proposed site area found the following:

- Traffic in the study area is heavily commuter-based as Foxhall Road NW and Reservoir Road NW operate as major thoroughfares connecting office workers to the downtown business core of the District of Columbia.
- Other roadways not utilized as a thoroughfare experienced limited vehicular activity with moderate pedestrian activity.
- The pedestrian experience was observed as adequate with sidewalks and crosswalks located along all roadways and at major intersections.
- Bicycling conditions in the study area are currently poor. Few cyclists were observed using bicycles to commute to the immediate area, as well as to other destinations. With no existing bike lanes or trails, these cyclists were observed along the area roadways and sidewalks.
- Multiple area and regional commuter bus routes serve the site area with regular stops along MacArthur Blvd.
- The Field School development provides satisfactory pedestrian facilities and connectivity throughout the study area.

With the anticipated increase in students and faculty/staff, the overall operations of The Field School would not be impacted. Student drop-off and pick-up would continue to occur during the existing school hours with a limited additional increase in faculty/staff to support to increased student population. Access for students and faculty/staff would remain with three primary drop-off/pick-up locations along the front of the building with dedicated parking for those commuting to school by private vehicle. Shuttle service would remain visiting six (6) separate Metrorail stations during the morning commute and five (5) separate stations during the afternoon commute. In addition to shuttle services remaining consistent, the existing parking field will continue to serve the school while carpooling will still be required for students and parents.

A capacity analysis was performed for The Field School incorporating the increase in faculty/staff personnel and increase in student population which included a study area of seven (7) existing intersections; with the following results:

- Of the study area intersections, each of the signalized intersections excluding the Foxhall Road & Reservoir Road intersection currently operate at acceptable levels of service during both the morning and afternoon peak hours. These conditions will continue in the future with the proposed development. Neither the commuter-based traffic nor the local residential based traffic will be negatively affected by vehicle trips generated by the proposed Field School development.
- Two unsignalized study area intersections currently operate beyond acceptable conditions during the morning peak hour and are expected to continue to operate under the same conditions with background growth and the expansion of the Field School. However, the delay forecasted at each of these intersections does not depict conditions observed in the field. It is anticipated that with the low turning volumes and adequate platooning the forecasted delay would not reflect future conditions with the expansion of the Field School. Further, the expansion of the Field School would not cause any significant additional delay at these intersections.

- Pedestrian access to the site via the signalized entrance along Foxhall Rd is anticipated to adequately serve the occupants and visitors of the site.
- The addition of three (3) background developments included as part of this study do not adversely affect the transportation network requiring mitigation procedures at any of the study intersections.

With The Field School's increased population, the capacity results indicate no additional intersections are anticipated to exceed acceptable levels of service. Further, there is anticipated to be little change to the levels of service expected throughout the study area due to the low number of future Field School trips that are added to the road network.

INTRODUCTION

This report presents the findings of a Transportation Impact Study (TIS) conducted for The Field School in support of its BZA application for an increase in student population. The current enrollment at the middle/high school is 323 students with support from 77 faculty and staff. The school is located in Ward 3 in northwest Washington, DC. Figure 1 shows a map of the site location.

The primary objectives of this study are to evaluate the transportation conditions near the school and to identify impacts to the transportation network due to the proposed increase in enrollment. This report focuses on the existing transportation network within the vicinity of the site, the transportation elements of the proposed development, and the possible impacts to the transportation network.

Gorove/Slade Associates, Inc. undertook the following steps while preparing the study:

- Performed field reconnaissance of existing roadway and intersection geometrics, traffic controls, speed limits, and operations;
- Observed traffic conditions during the morning, school peak and afternoon peak periods on a typical weekday;
- Conducted peak hour turning movement counts at study intersections;
- Conducted school peak hour turning movement counts at several study intersections;
- Analyzed the existing transportation network;
- Described and quantified the impacts of other development and infrastructure changes on the future transportation network;
- Calculated the trip generation for the proposed development utilizing the Institute of Transportation Engineers' (ITE) Trip Generation, 8th Edition and existing traffic counts;
- Detail the transportation elements of the proposed population increase, including pedestrian and vehicular access;
- Forecasted future traffic volumes with and without the increase in population;
- Estimated the difference in peak hour traffic with and without the future population;
- Calculated future levels of service at the study intersections with and without the increase in population; and
- Recommended mitigation measures, if necessary, based on the future transportation analysis.

Sources of data for this study include traffic counts and observations conducted by Gorove/Slade, studies by WMATA and ITE, and the files/library of Gorove/Slade.



Figure 1: Location Map

EXISTING CONDITIONS

A review of existing conditions determines if any areas of concern or opportunity exist within the transportation network. Analysis of the existing conditions also establishes a point of reference for the analysis of the future traffic conditions. Seven existing study intersections were chosen for the capacity analyses based on their proximity to the Field School in consultation with the District Department of Transportation (DDOT). As shown on Figure 2, the following intersections were identified:

- Foxhall Road & Garfield Street NW
- Foxhall Road & W Street NW
- Foxhall Road & Whitehaven Parkway NW
- Foxhall Road & Reservoir Road NW
- Foxhall Road & The Field School Site Driveway
- MacArthur Boulevard & W Street NW
- Garfield Street & New Mexico Avenue NW

In addition to these seven (7) study area intersections, a second site driveway exists for The Field School. However, this driveway is currently not being utilized and is gated off from any vehicular traffic. The school will not open this driveway in the future as a traffic signal was recently installed at the main site driveway which adequately supports all site traffic.

Roadway Network

The existing school is bounded by Foxhall Road to the west, the Kreeger Museum to the immediate north and private residences to the east and south. Foxhall Road, Reservoir Road, and MacArthur Boulevard are utilized as heavy commuter routes for persons living north of the school in the District and Maryland commuting to the central business district. The remaining roadways in the study area consist primarily of local trips with some cut through traffic. Figure 3 depicts the street network hierarchy, average annual daily traffic volumes for the roadways and the existing direction of approach for site generated traffic.

The immediate study area of the Field School development has several key local access roads. These include:

- Foxhall Road NW

Foxhall Road NW is a two-lane roadway that runs north-south in the vicinity of the site. Between the intersections of Whitehaven Pkwy and Reservoir Rd NW, Foxhall Road NW is a 4-lane roadway. DDOT classifies it as a minor arterial with an average daily traffic of 18,000 vehicles between Reservoir Rd NW and Garfield St NW. The posted speed limit is 25 mph. During school peak hours, the posted limit is 15 mph.

- Reservoir Road NW

Reservoir Rd NW is a 4-lane roadway with left and right turn lanes at major intersections that runs east/west in the vicinity of the site. DDOT classifies it as a minor arterial with an average daily traffic of 12,600 vehicles between MacArthur Blvd and 37th Street. The posted speed limit is 25 mph.

- Whitehaven Parkway NW

Whitehaven Pkwy is a two-lane roadway that runs east/west in the vicinity of the site. DDOT classifies it as a local roadway. Along Whitehaven Pkwy, several parking restrictions exist east of Reservoir Rd NW. The posted speed limit is 25 mph.

- W Street NW

W Street NW is a two-lane local roadway that runs east/west in the vicinity of the site. Parking is available on both sides of the street. The posted speed limit is 25 mph.

- Garfield Street NW

Garfield Street NW is a two-lane roadway that runs east/west in the vicinity of the site. DDOT classifies it as a collector roadway within the site vicinity with an average daily traffic of 1,400. Parking is available along both sides of the street. It has a speed limit of 25 mph.

- New Mexico Avenue NW

New Mexico Avenue is a two-lane local roadway that runs north/south in the vicinity of the site. On street-parking is available along both sides of this street north of Garfield St. NW with restrictions. DDOT classifies it as a minor arterial. The posted speed limit is 25 mph.

- MacArthur Boulevard NW

MacArthur Boulevard NW is a four-lane median divided roadway that runs north/south in the vicinity of the site. On street-parking is available along both sides of this street with restrictions. DDOT classifies it as a principal arterial within the site vicinity with an average daily traffic of 15,800 near the intersection of Arizona Avenue. It has a posted speed limit of 25 mph.

Gorove/Slade conducted field reconnaissance to obtain the existing lane configurations and traffic controls at the intersections within the study area, shown on Figure 4.

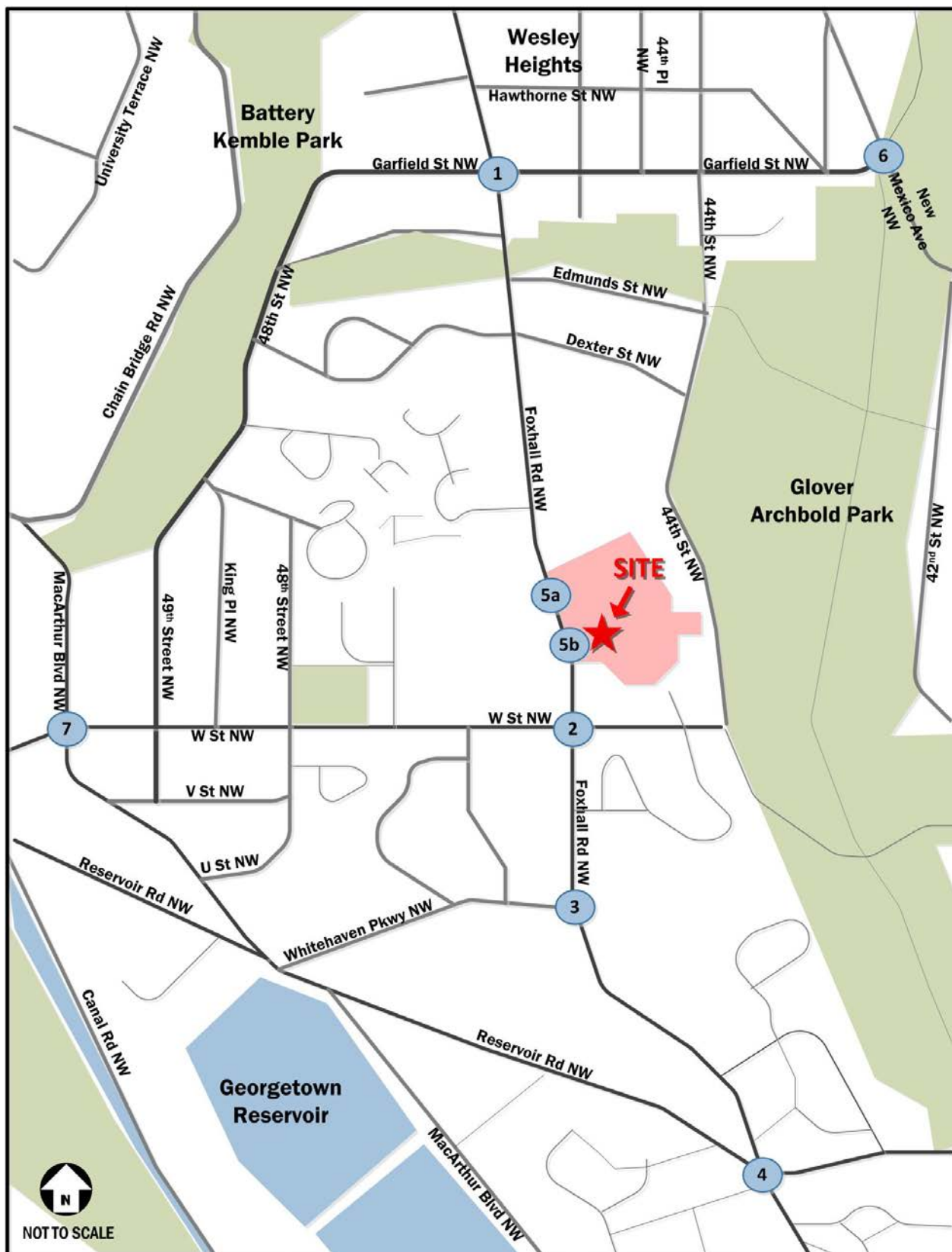


Figure 2: Study Intersections



Figure 3: Average Daily Traffic and Direction of Approach



Figure 4: Existing Traffic Controls and Lane Configurations

Traffic Observations

Observations of the study intersections were performed by Gorove/Slade in order to assess the existing operations of the roadway network. During these observation periods, remarks were noted in regards to signal operation, vehicular queuing, and pedestrian activity. The study area was observed on the following days/times:

- Tuesday, April 24, 2012 between 6:00 – 9:00 AM and 4:00 – 7:00 PM;
- Tuesday, May 8, 2012, between 7:00 – 9:00 AM; and
- Thursday, May 24, 2012 between 6:00 – 9:00 AM and 2:30 – 7:00 PM.

Peak period intersection turning movement counts were conducted at each of the study area intersections during the hours of 6:00 – 9:00 AM and 4:00 – 7:00 PM while vehicle turning movement counts were also performed from 2:30 – 4:00 PM at the Field School site driveway and at the intersections of Foxhall Road with Garfield Street and W Street. These off-peak turning movement counts were collected in order to ensure peak Field School traffic did not impede traffic along Foxhall Road. Vehicle occupancy and queue data was also collected during the peak drop-off and pick-up procedures at the school.

Morning Peak Hour

During the morning peak hour observations, all study intersections appeared to operate at acceptable conditions excluding the intersection of Foxhall Road and Reservoir Road which experienced some delay and congestion. The majority of vehicles in the vicinity of the site were observed traveling in a general southbound direction toward the Washington, DC downtown business core. These queues were adequately served during the green time provided by the traffic signal. There appeared to be little delay realized for any of these movements or for other movements in the study area.

School Peak Hour

Prior to the typical commuter peak hour, traffic operations were observed during the school peak hour when the majority of students and faculty exited the campus. Under a typical school day schedule for the Field School, classes dismiss at 2:45 PM. During the time period shortly before and immediately after dismissal, observations of existing conditions indicated that the peak dismissal did not cause any disruption to traffic flow throughout the study area. No excessive queues were observed at study area intersections and delay was kept to a minimum for through traffic at the signalized site driveway.

The traffic counts collected at W Street & Foxhall Road and Garfield Street & Foxhall Road indicated that the total traffic traveling through each intersection during the school peak hour was lower than volumes during the afternoon commuter peak hour.

Afternoon Peak Hour

During the afternoon peak hour observations, all study intersections excluding the Foxhall Road and Reservoir Road intersection appeared to operate at acceptable conditions. The majority of vehicles were generally observed traveling northbound in the site vicinity, opposite the traffic pattern observed during the morning peak hour. Moderate queues were observed for the northbound approaches along Foxhall Drive at Reservoir Road.

Shuttle

Currently, private shuttles pick up many students from six (6) Metrorail stations and at a retailer in McLean, Virginia in the morning and drop off at five (5) Metrorail stations in the afternoon. Morning shuttles pick-up students from points in Virginia and Maryland as well as at several Metrorail stations within the District. Metrorail stations visited during the morning commute include Rosslyn, Friendship Heights, Cleveland Park, Woodley Park, Foggy Bottom, and Fort Totten. These shuttles drop-off students at various times, but all routes conclude for the beginning of classes. Afternoon shuttles drop-off at each of these stations excluding Foggy Bottom and Fort Totten. In the place of Foggy Bottom, the shuttle drops-off at Farragut West. Afternoon shuttles begin at 3:00 PM, continuing through the early evening with the final departure at approximately 6:15 PM. Occupancy counts of shuttle trips conducted on Tuesday, May 8, 2012 indicate that approximately 40% of the Field School's 323 students utilize the shuttle service, as shown in Table 1.

Table 1: Private Shuttle Occupancy and Mode Split

Count Period	Number of Shuttle Trips	Total Passenger Occupancy	Shuttle Mode Split
Morning (7:30 – 9:00 AM)	8	139	43%
Afternoon (2:45 – 6:30 PM)	9	124	38%

Pedestrian Facilities

The Field School development provides satisfactory pedestrian facilities and connectivity throughout the study area. Sidewalks along Foxhall Road bordering the school were constructed by the Field School as part of previous zoning applications while the remaining roadway network is supported with sidewalks and crosswalks linking segments at intersections within the study area. Adequate crosswalks are provided at each study intersection. Controlled crosswalks are provided at all intersections where traffic signals exist to help control the flow of vehicles. Moderate pedestrian activity was observed at the intersections of White Haven Pkwy/Foxhall Rd NW and Reservoir Road/Foxhall Rd NW during the peak periods and were accommodated by the crosswalks and timings provided at the intersections. The other intersections within the study area received low pedestrian activity.

Bicycle Facilities

According to DDOT's most current Bicycle Map, bicycling conditions in the study area are poor. There were few bicyclists observed traversing the intersections within the study area. Along Foxhall Rd NW, there is a sidewalk on the eastern side of the street which bicyclists can use. There are on road bike routes along Reservoir Road NW and Garfield St. NW. There do not appear to be any dedicated bicycle lanes or trails in the vicinity of the site. There are currently no future plans to improve the bike facilities in the area. Figure 5 depicts the existing conditions for bicycle travel within the site area under existing conditions. The nearest Capital Bikeshare (CaBi) station is located at 39th and Calvert St. NW, which is approximately 1.5 miles from the site.

Transit Network

Generally, the Metrobus system is more accessible to the Field School site than the Metrorail system. The nearest Metrorail stations are Rosslyn and Tenleytown, which are slightly less than 2 miles from the school. Because of this distance, it is unlikely that Metrorail on its own would be used as a method of transit to the site. However, the nearest Metrobus route is along MacArthur Blvd, to the west of the site, and Reservoir Road NW, to the south of the site. The nearest bus stop to the site is located at W St. NW and MacArthur Blvd, which is approximately a ¼ mile walk to the site. Table 2 shows a summary of the bus route information for the lines that serve the site vicinity, including service hours and the headways. Figure 6 shows the existing bus service.

Table 2: Bus Route Information

Route Number	Route Name	Service Hours	Headway
D3	Ivy City-Dupont Circle Line	Weekdays 6:15-9:15 am, 3:00-7:00 pm	25-30 minutes
D5	MacArthur Blvd-Georgetown Line	Weekdays 6:30-9:00 am, 3:30-7:30 pm	15-25 minutes
D6	Sibley Hospital-Stadium-Armory-Line	Weekdays 6:30-9:00 am, 3:30-7:30 pm	15-20 minutes

During site observations, a moderate number of transit riders were seen using the stops adjacent to MacArthur Blvd NW. Most of the riders were observed riding north and south, concurrent with commuting traffic. These buses appeared regularly and provided adequate room to accommodate all passengers wishing to board the bus in the AM peak allowed passengers to exit the bus in the PM peak.

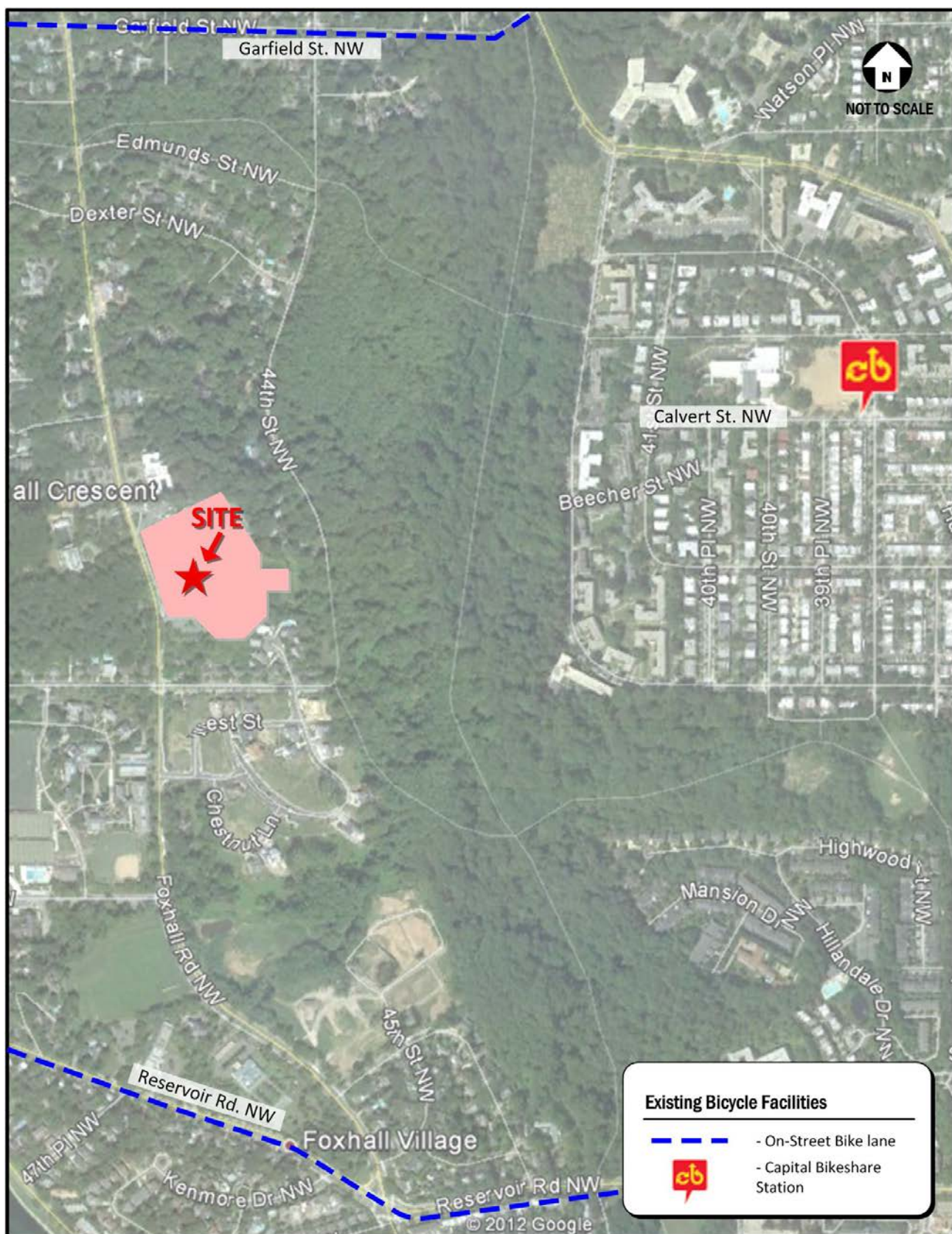


Figure 5: Existing Bicycle Conditions



Figure 6: Existing Transit Service

Summary

A review of the proposed development site found the following:

- Traffic in the study area is heavily commuter-based as Foxhall Road NW and Reservoir Road NW operate as major thoroughfares connecting office workers to the downtown business core of the District of Columbia.
- Other roadways not utilized as a thoroughfare experienced limited vehicular activity with moderate pedestrian activity.
- The pedestrian experience was observed as adequate with sidewalks and crosswalks located along all roadways and at major intersections.
- Bicycling conditions in the study area are currently poor. Few cyclists were observed using bicycles to commute to the immediate area, as well as to other destinations. With no existing bike lanes or trails, these cyclists were observed along the area roadways and sidewalks.
- Multiple area and regional commuter bus routes serve the site area with regular stops along MacArthur Blvd.
- The Field School development provides satisfactory pedestrian facilities and connectivity throughout the study area.

Based on these findings, it appears that most of the vehicular traffic through the area road network is associated with commuters destined for other locations outside of the study area.

DESCRIPTION OF BACKGROUND DEVELOPMENTS AND GROWTH

Background Developments

As part of future conditions without the proposed Field School redevelopment, other area developments that have previously been approved, but not yet constructed were considered as these would impact the area roadways. There are a total of three (3) developments in the vicinity of the site which are expected to impact these roads and are shown on Figure 7. The trip generation for each of these sites was calculated based on the methodology outlined in the Institute of Transportation Engineers' (ITE) *Trip Generation*, 8th Edition in combination with previously approved traffic studies.

For the Dunmarlin at Phillips Park residential development, the standard ITE rates for single family detached housing (ITE Code 210) were used, with no reductions for transit/TDM. However, the development is approximately 50 percent occupied and therefore, the total number of dwelling units was reduced respectively to account for the existing trips currently being generated by the development.

For the St. Patrick's Foxhall Project, the development was forecasted to generate 262 AM peak hour trips, 175 school peak hour trips and 189 PM peak hour trips, based on a traffic study prepared by Wells + Associates. These values assumed an aggressive trip generation reduction for non-auto modes of near 50 percent. In addition to the non-auto reduction for the development, St. Patrick's has agreed to "cap" the AM inbound trip generation rate at 146 vehicles. Given these details, this study has assumed the capped trip generation rate during the AM peak and the PM peak hour trip generation rate for purposes of establishing a baseline background condition.

In addition to the St. Patrick's Foxhall Project, the school has recently submitted an application to increase the enrollment capacity at their Whitehaven campus from 440 students to 485 students. Trip generation rates for this additional enrollment are shown below in Table 3 and are based on ITE trip generation rates for a Private School, grades K through 8 (ITE Code 534). As part of these rates, ITE does not provide PM peak hour of the adjacent street trip generation rates for Private School, so the rates for the PM peak hour of the generator were modified to reflect PM peak hour conditions.

The trips associated with the background developments shown on Table 3 below were distributed to the surrounding road network based on their location and existing travel patterns. Based on this information, the traffic associated with these developments can be found in Figure 8 and indicates that there would be limited traffic added to the study intersections due to these developments.

Table 3: Background Development Trip Generation

Development	Land Use	Size	Units	AM Peak			PM Peak		
				In	Out	Total	In	Out	Total
Dunmarlin at Phillips Park ¹	Single Family Detached <i>ITE Land Use #210</i>	23	DU	7	19	26	19	10	29
St. Patrick's Foxhall Project ²	Institutional (8th through 12th Grades) <i>ITE Land Use #530, High School</i>	440	students	97	49	146	90	99	189
St. Patrick's Whitehaven Project ³	Institutional (Pre-K through 6) <i>ITE Land Use #534, Private School (K-8)</i>	45	students	23	18	41	7	8	15
Overall Total				127	86	213	116	117	233

1. References Dunmarlin at Phillips Park at 50 percent occupancy at time traffic counts were conducted.

2. Based on Zoning Ordinance 17429 for St. Patrick's Episcopal Day School approved on July 11, 2006.

3. PM Peak trip generation for the Whitehaven expansion project has been factored to reflect the peak hour of the adjacent street rather than the peak hour of the generator using ITE rates for Elementary School (Land Use #520).

Background Growth

In addition to background developments, traffic generated by inherent growth on the roadways within the study area must be accounted for in the traffic projections. These traffic increases were accounted for with a one-third percent (0.33%) growth rate compounded annually over a four-year period for the traffic movements used by commuting regional traffic along Foxhall Road and Reservoir Road. This growth rate represents commuting traffic traversing the study area and nearby developments and is compounded for six years to reflect the anticipated occupancy date of 2018 as shown on Table 4. MacArthur Boulevard was shown to experience a decline in ambient growth over the last several years and therefore growth was not applied to that roadway.

Table 4: Background Ambient Growth Percentages

Year	Foxhall Rd NW at Garfield St NW	Foxhall Rd NW at Reservoir Rd NW	Foxhall Rd NW at W St NW	MacArthur Blvd
2006	15,900	10,700	17,900	16,000
2007	16,000	10,800	18,000	15,800
2008	15,900	10,700	17,900	15,700
2009	16,000	10,800	18,000	15,800
Annual Growth Rate	+0.21%	+0.31%	+0.19%	-0.42%



Figure 7: Background Development Locations

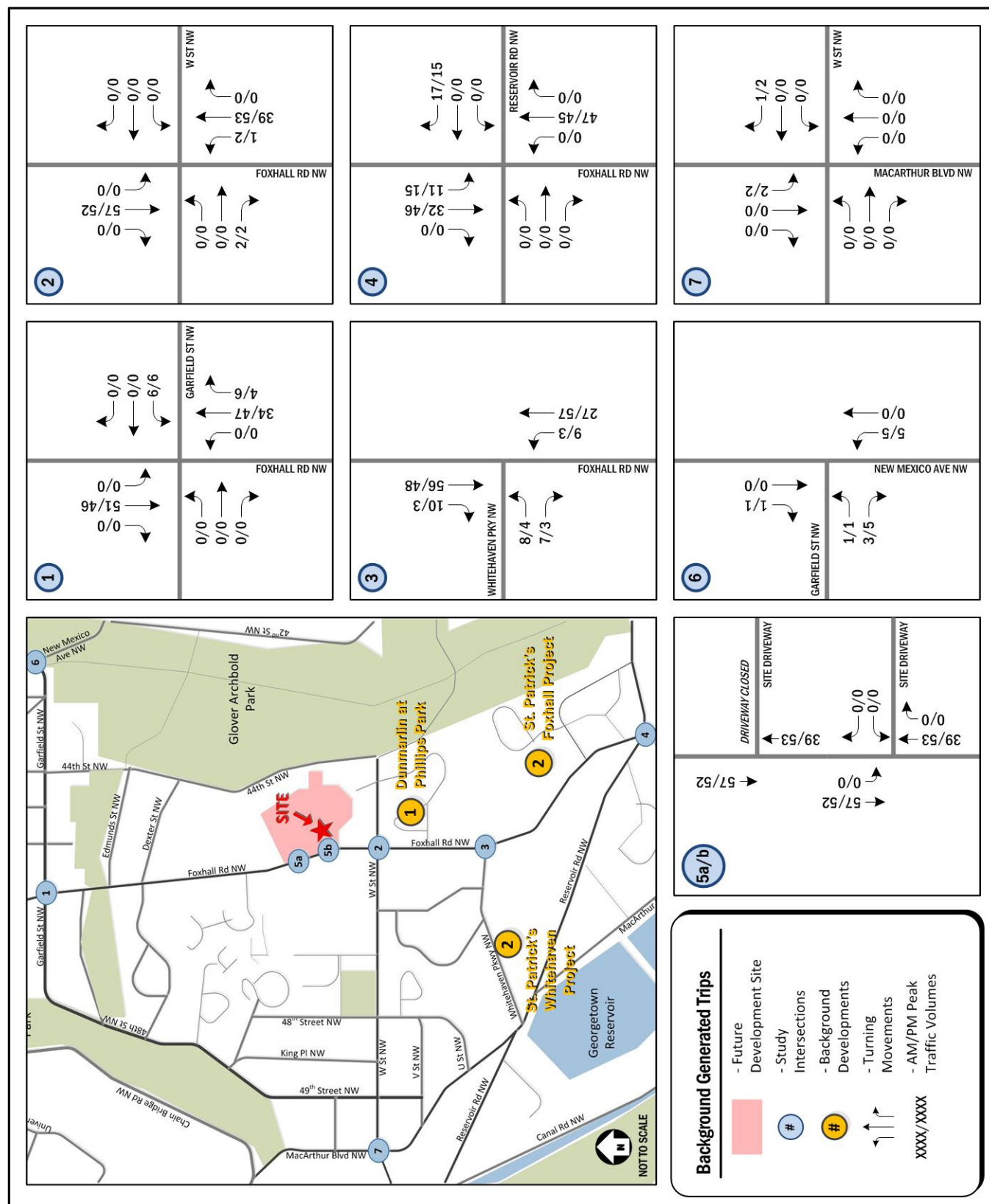


Figure 8: Background Development Site Traffic

DESCRIPTION OF EXISTING OPERATIONS

Currently, the Field School operates in an acceptable manner under all transportation related conditions. Internal operations have been designed to allow for efficient circulation during drop-off and pick-up procedures while also limiting queuing and meeting Transportation Demand Management (TDM) requirements outlined as part of prior BZA approval. Externally, the signalized site driveway currently operates under acceptable conditions during the AM, school and PM peak periods.

Site Access and Circulation

There are two site entrances to the Field School; a northern site driveway and a southern site driveway, both intersecting Foxhall Road. The northern site driveway is closed to regular access and is only utilized in instances of an emergency or for large vehicles accessing the northern portion of the site. The southern site driveway serves as the main entry/exit point for the school and was signalized as part of a prior zoning approval. Figure 9 shows the existing site access and circulation.

Once on the Field School campus, existing roadway striping directs all vehicles to circulate through the campus in a manner that reduces vehicular and pedestrian conflicts. As shown below, all vehicles are instructed to circulate through the southern parking area, then to each of drop-off areas, turn around at the circle, and then exit at the main entrance. This permits an efficient circulation pattern that eliminates vehicle conflicts and reduces pedestrian conflicts while providing several drop-off/pick-up locations.

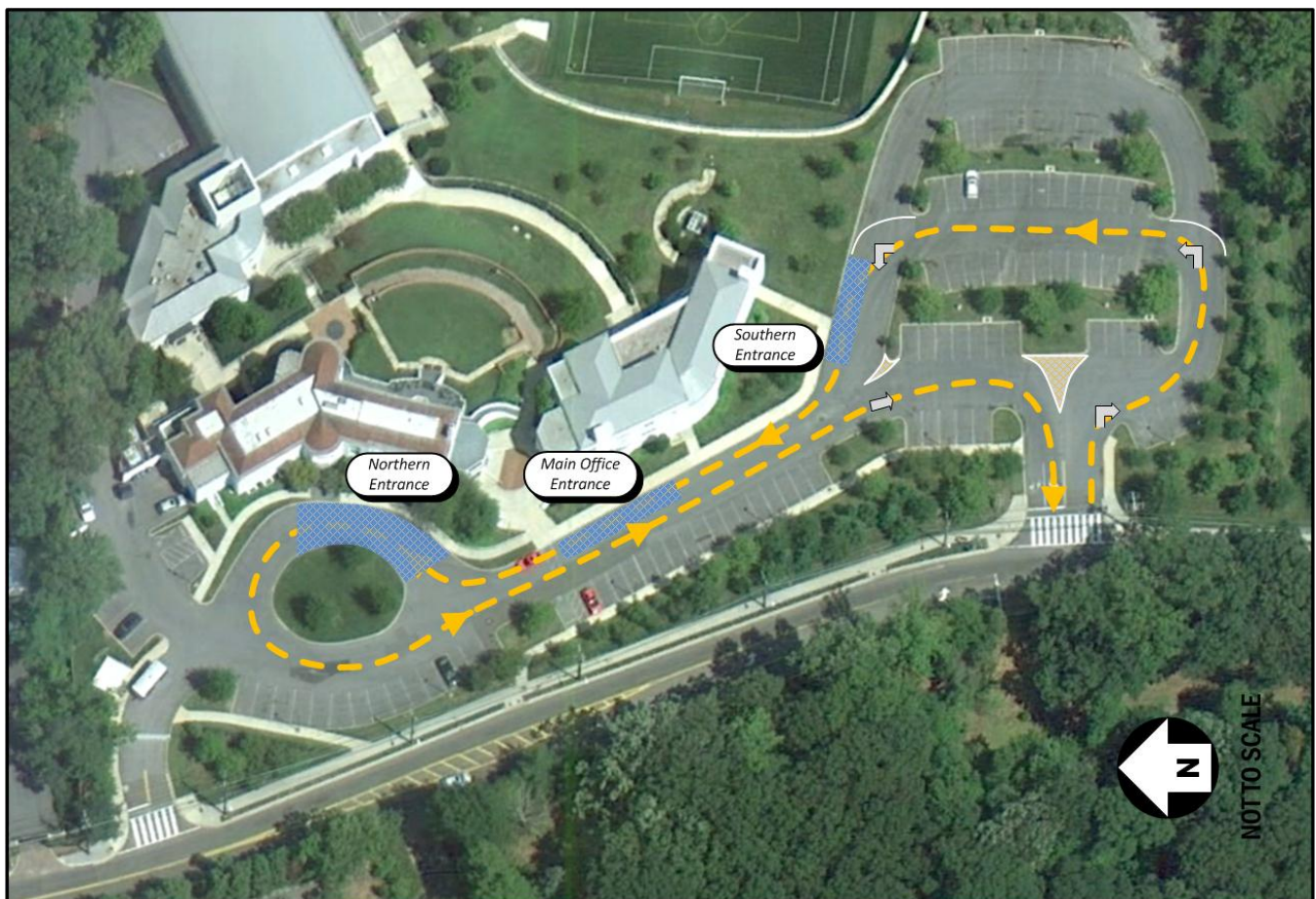


Figure 9: On-Site Circulation and Drop-Off/Pick-Up Locations

Vehicle Occupancy

During the various days of data collection at the Field School, Gorove/Slade staff performed a vehicle occupancy count during both the morning and afternoon peak periods to determine an average occupancy for passenger vehicles. Overall, both the morning and afternoon peak periods experienced an average occupancy per vehicle of approximately 1.65 passengers. This takes into account all faculty/staff, student drivers and students being dropped off by parents, but excludes the numerous students arriving by shuttle bus which on average was shown to represent approximately 40 percent of the existing student population. Vehicle occupancy details are included within the appendix of this study.

Queue

Along with the vehicle occupancy information, vehicle queue information was also collected at various locations along the school's property as well as along Foxhall Road at the school's main site driveway. Internal to the site, there did not appear to be any locations where queuing restricted traffic flow to or from Foxhall Road while allowing adequate circulation through the site. Along Foxhall Road, in no circumstance did traffic approaching from the south cause a queue onto the public roadway. For those vehicles approaching from the north, a maximum queue of 3 vehicles was observed during the PM school peak period. Given a dedicated southbound left turn lane from Foxhall Road of approximately 200 feet, a queue of approximately 10 vehicles could be accommodated at this location without impacting through traffic.

Parking

The site is currently served by 117 parking spaces, comprised of 112 standard parking spaces and 5 handicapped parking spaces. Currently, students park in the south parking lot closest to the athletic field while faculty and staff park in the spaces along Foxhall Road and along the northern boundary of the site. Only students of appropriate age and with a good driving record are permitted to drive to school. All faculty and staff currently park in the spaces fronting Foxhall Road and around the northern building perimeter.

A parking occupancy count was conducted on site and it was determined that during peak occupancy periods immediately after classes began and shortly before they concluded, the total parking demand was 75 vehicles, or approximately 65 percent of the availability. This includes the demand of 35 students who meet the qualifications to drive

As the data was collected for the parking occupancy, it was determined that of the 75 vehicles parked on-site, several (approximately 5-10 vehicles) of these vehicles were parked in areas currently not striped for parking. These parking areas, shown in Figure 10, are located near the northern end of the site and indicate a higher demand for faculty/staff parking than is available.

Bicycle Parking

Currently, the Field School provides two dedicated locations for bicycle parking. Several other locations across the campus allow bicycle parking but these locations are not designed for that use. The two dedicated locations are on opposite ends of the campus near the northern and southern edges of the building as shown in Figure 10. The southern location can currently accommodate 8 bicycles and is covered while the northern location can accommodate a total of 11 bicycles and is uncovered, for a total supply of 19 spaces. Based on field reviews conducted by the applicant and Gorove/Slade it was determined that on average, the southern parking area experienced an average demand of 4 bicycles while the northern parking area experienced an average demand of 6 bicycles, for a total demand of 10 vehicles. This demand is comprised of both students and faculty/staff for The Field School.



Figure 10: Overflow Parking and Bicycle Parking Areas

Source: Google Maps

Foxhall Road School Zone Warning Signage

In order to notify oncoming vehicles of The Field School, various school zone warnings signs have been installed to provide adequate warning to these vehicles prior to coming close to the site. These signs include several school zone speed limit signs, pedestrian/student crossing signs and end school zone signs. These are located at various distances from the school and are summarized in Figure 11 below.

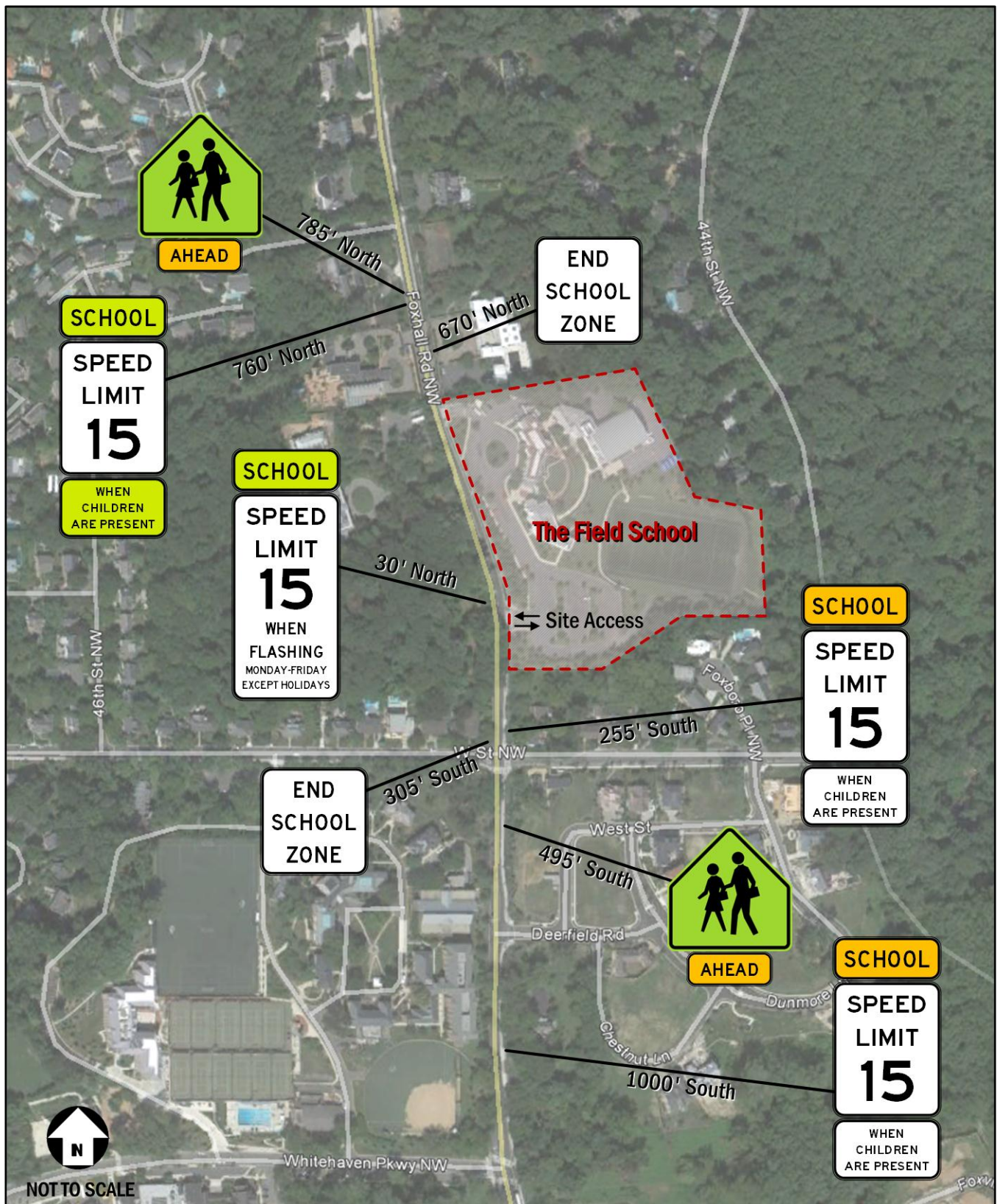


Figure 11: School Zone Warning Signs

DESCRIPTION OF PROPOSED DEVELOPMENT

The Field School is proposing to expand its existing enrollment cap of 323 students over the next several years to incorporate an additional 77 students, for a total of 400 students. Based on the anticipated future enrollment, this increase would be reflected in the inclusion of a 6th grade class and slightly larger classes in each of the existing 7th – 12th grade classrooms. This increase in enrollment would be accommodated by future classrooms, an assembly room, new offices, and various other facilities. These new facilities would primarily be constructed in the area located between the existing school and the athletic field with a small addition connecting the original Sapere building. The existing and future breakdown of students per grade is shown below in Table 5.

Table 5: Enrollment Breakdown

	6th	7th	8th	9th	10th	11th	12th	Total
Existing	-	23	33	66	67	68	66	323
Proposed	32	38	38	70	74	74	74	400

As indicated, a slight enrollment increase is anticipated in grades 8 through 12 with a larger increase in grade 7 and the inclusion of 6th grade resulting in a total future enrollment of 400 students in the 2017-2018 school year. In order to meet the needs of the increased enrollment, the current full time equivalent staff of 77 individuals will also be increased, resulting in 110 total faculty and staff personnel.

Site Access and Circulation

With the increased enrollment at the Field School, site access and circulation are anticipated to remain as currently configured. Given the adequate spacing and circulation area available within the property, the additional vehicle trips anticipated for the site will be able to be accommodated without modifying the property.

Parking

The increase in parking demand in future conditions is primarily associated with the increase in faculty and staff as the increase in students eligible to drive is relatively low. Therefore, primarily only the additional 24 faculty/staff personnel will need to be accommodated on-site. With the existing demand of 75 spaces, and the additional 24 faculty and staff positions, a future demand of 99 spaces would represent a conservative estimate. To account for additional student drivers, a total of an additional 3-5 spaces has been assumed as only students age 17 or older are permitted to drive, of which there are only 12 available additional students in that age range. Given this, a total demand of between 102 to 104 spaces would be realized on a typical school day.

Based on current District of Columbia parking regulations for this site, the Field School would be required to provide two (2) vehicular parking spaces for each three (3) faculty/staff positions, plus one (1) space for each ten (10) seats in the largest assembly area. With a the anticipated future faculty/staff requirement of 110 persons and an assembly area with 500 seats, the overall parking requirement for the school would be 123 spaces.

With a future supply of 128 spaces, the future demands of the site are anticipated to be accommodated within the existing property and are also expected to meet current parking regulations. However, in order to account for the increased demand for parking by faculty and staff, some parking currently designated to students will need to be transferred to faculty and staff parking. This shift will also help to accommodate the faculty/staff vehicles that currently park in the unstriped area near the northern end of the site described above.

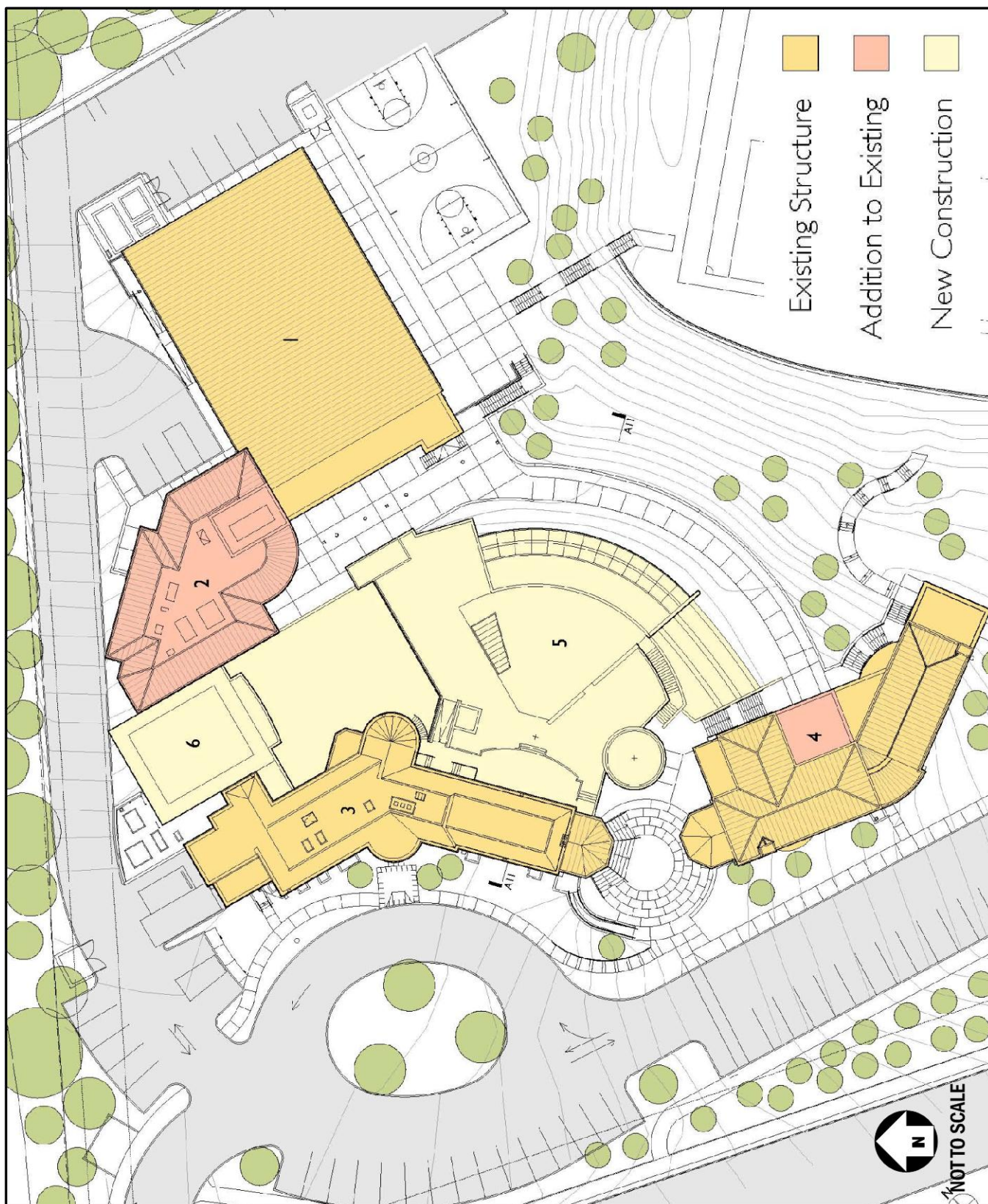


Figure 12: Proposed Site Plan

Bicycle Parking

As mentioned above as part of the existing bicycle parking conditions, The Field School provides a total of approximately 19 dedicated bicycle spaces across its campus for the 323 students and 77 faculty/staff. Field observations indicate that with these 400 individuals, an average demand of 10 bicycles is realized on an average day, or 2.5 spaces per 100 people. With the proposed increase in students to 400 (increase of 77) and increase in faculty/staff to 110 (increase of 33), future bicycle demand is expected to increase proportionally to the demand realized under existing conditions, resulting in a future anticipated demand of approximately 13 spaces. Although the existing supply is capable of supporting the anticipated future demand, the applicant is proposing to install 4 additional covered bicycle spaces at the southern site location to further promote the already extensive transportation demand management operations.

Trip Generation

The proposed Field School is anticipating increasing the enrollment cap of the school from 323 to 400 students. Given the existing enrollment and driveway counts for the Field School, it was determined these counts would more accurately provide a basis for calculating the future demand of the site when compared to trip generation forecasts outlined in the Institute of Transportation Engineers' (ITE) *Trip Generation*, 8th Edition. Additionally, the existing Field School has instituted an impressive Transportation Demand Management (TDM) program which reduces site traffic significantly. Rather than estimating various reductions for site traffic, it was determined utilizing the existing school counts would better approximate future trip generation rates. In order to properly evaluate the future trip generation, several factors were considered.

Student Population

As part of the future expansion of the Field School, the increase in student population will be greater in the middle school than in the high school age students, 52 and 25 students, respectively. This would generally result in more trips entering and exiting the site as these students would not be eligible to drive to school. However, with an increase in high school students, there will be more opportunities for carpooling.

Faculty and Staff Population

Given the existing increase in student population of 77 students represents an increase of approximately 20 percent of the total enrollment and the increase of 33 full time equivalent faculty and staff represents an increase of approximately 30 percent of the total staffing needs, a modification to the trip generation rates based on increased faculty was determined irrelevant.

Transportation Demand Management

As previously discussed, the existing Field School currently operates one of the most aggressive and successful TDM programs in the District of Columbia as studied by Gorove/Slade. With this TDM program, the Field School has successfully reduced site generated traffic when compared to rates prior to installing the program. As shown below, site driveway counts were collected in 2005 as part of a prior traffic study and again in 2012 as part of this traffic study. Reviewing these rates against the existing enrollment at the time, indicates a reduction in site generated trips of between 30 to 40 percent when reviewing the commuter peak hours and an increase of approximately 37 percent during the schools peak pick-up period.

Table 6: Site Driveway Trip Comparison

			AM Peak			PM Peak (Adj. Street)			PM Peak (Generator)		
			In	Out	Total	In	Out	Total	In	Out	Total
2005 STUDENT POPULATION											
Driveway Count	298	Students	110	50	160	46	56	102	46	56	102
			0.37	0.17	0.54	0.15	0.19	0.34	0.15	0.19	0.34
2012 STUDENT POPULATION											
Driveway Count	323	Students	86	37	123	32	34	66	68	84	152
			0.27	0.11	0.38	0.10	0.11	0.20	0.21	0.26	0.47
PERCENT REDUCTION			28%	32%	29%	36%	44%	40%	-36%	-38%	-37%

As part of the this expansion, the Field School is also intending on aggressively continuing the existing TDM measures that will continue to reduce the impact of site generated traffic on the area road network.

Given the various elements above and the successfulness of the existing TDM program, trip generation rates for the future expansion of the Field School was estimated based on the existing driveway counts. The anticipated trip generation for the proposed development can be found in Table 7 along with the delineation of these new trips throughout the study area on Figure 13.

Table 7: Trip Generation for Proposed Development

			AM Peak			PM Peak (Adj. Street)			PM Peak (Generator)		
			In	Out	Total	In	Out	Total	In	Out	Total
EXISTING STUDENT POPULATION											
Driveway Count	323	Students	86	37	123	32	34	66	68	84	152
FUTURE STUDENT POPULATION											
Driveway Count	400	Students	107	45	152	40	42	82	84	104	188
Net New Site Trips			21	8	29	8	8	16	16	20	36

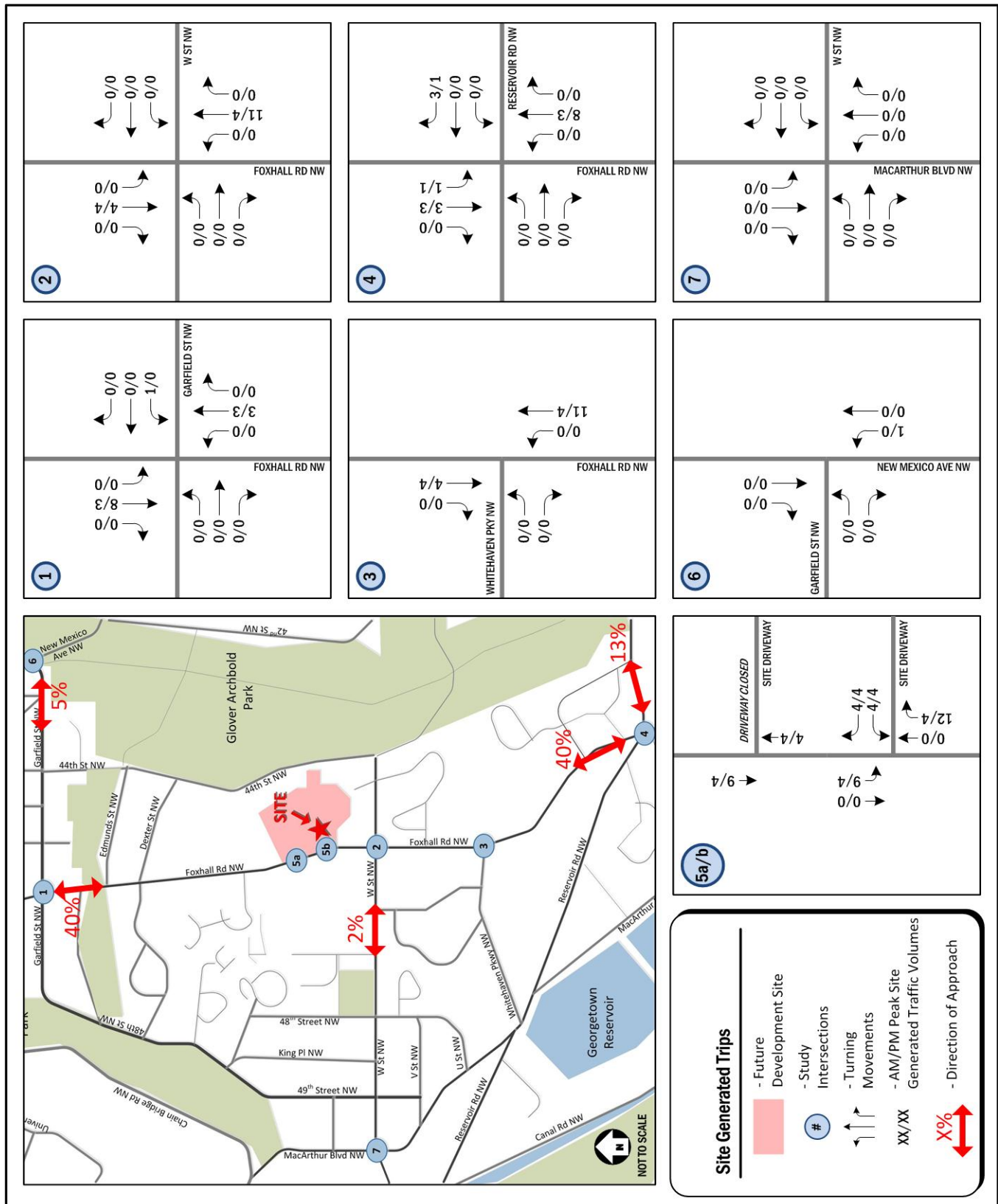


Figure 13: Forecasted Site Traffic Volumes and Directional Distribution

CAPACITY ANALYSIS

Intersection capacity analyses were performed for the existing conditions, future conditions without development, and future conditions with development at the intersections contained within the study area during the morning and afternoon peak hours. *Synchro, Version 7.0* was used to analyze the study intersections based on the Highway Capacity Manual (HCM) methodology.

The results of the capacity analyses are expressed in level of service (LOS) and delay (seconds per vehicle) for each approach. An average delay (of each approach) and LOS for the signalized intersections is also shown for an overall intersection LOS grade. The HCM does not give guidelines for calculating the average delay for a two-way stop-controlled intersection, as the approaches without stop signs would technically have no delay. The detailed analysis worksheets are contained in the Appendix.

Existing Conditions Capacity Analysis

Traffic Volumes

In order to determine the peak hour turning movement traffic volumes, traffic counts as discussed previously from April and May 2012 from 6:00 to 9:00 AM and from 2:30 to 7:00 PM were analyzed to determine the peak hour of traffic at each intersection. These existing traffic volumes for the intersections contained within the study area are shown on Figure 14. The existing turning movement counts are included in the Appendix.

Capacity Analysis Results

The existing capacity analysis is based on the existing roadway network as shown in Figure 4 and the traffic volumes described above and shown below on Figure 14. The results of the intersection capacity analyses are presented in Table 8.

For the purpose of this analysis, it is desirable to achieve a level of service (LOS) of “E” or better on each approach. As shown in Table 8 all study intersections excluding the following currently operate at acceptable conditions:

- **W Street & Foxhall Road** – based on the capacity analysis results, both the eastbound and westbound approaches at this intersection operate at beyond acceptable levels during the AM peak period. However, based on a review of the study intersection, this delay does not reflect observed conditions in the field. Observed delay for the westbound approach was shown to be very minimal. With the connection of W Street to the Dunmarlin development, the eastern leg of W Street has the opportunity to utilize the newly constructed signalized intersection at Deerfield Road reducing the impact of this approach.

The eastbound approach was observed to experience a higher level of traffic, but a large majority was observed turning right to travel south on Foxhall Road. Further, the signalized Field School driveway located less than 350 feet from this intersection provides adequate spacing for traffic exiting from W Street onto Foxhall Road.

- **Reservoir Road and Foxhall Road** – based on the results depicted in Table 8, this intersection was shown to operate beyond acceptable levels during both the AM and PM peak periods, which reflects conditions observed in the field.
- **W Street and MacArthur Boulevard** – during the morning peak hour at this intersection, the eastbound approach was forecasted to operate beyond acceptable levels during AM peak hour. This delay was not observed during field reconnaissance and is not expected to be realized given the very low turning volumes at this intersection.

Future Conditions without Development Capacity Analysis

Traffic Volumes

The traffic volumes generated by the growth rate and nearby developments were applied to the existing (2012) traffic volumes in order to establish the future (2018) traffic volumes without the proposed developments which are reflected on Figure 15.

Capacity Analysis Results

The capacity analyses for the future conditions without development are based on the existing roadway network depicted on Figure 4 and the traffic volumes shown on Figure 15. The results of the intersection capacity analyses are presented in Table 8. Based on the capacity analysis results, each of the study area intersections are expected to operate at levels consistent with those forecasted under existing conditions. While delay is forecasted to increase at each study intersection, no additional intersection or movements are expected to operate beyond acceptable levels when compared to existing conditions when six (6) years of ambient growth and trips for the three (3) background developments are applied to these intersections.

Future Conditions with Development Capacity Analysis

Traffic Volumes

The trips forecasted for the additional students, faculty and staff due to the expansion of the Field School site were applied to the study area network based on the trip generation calculations and directional distributions discussed above and shown on Figure 13. Applying these values to the 2018 future background traffic volumes, the total future traffic volumes are depicted on Figure 16.

Capacity Analysis Results

The future roadway capacity results are based on the existing configuration of the roadways in the study area depicted on Figure 4 and the traffic volume forecasts shown on Figure 16. Given these conditions, all study area intersections are expected to continue to operate at the same level of service as they did in the future conditions without development capacity analyses. While delay is expected to increase slightly at several of the study intersections, the levels of service forecasted in future background conditions without the Field School expansion will be maintained and therefore the school will have no significant impact on conditions throughout the study area.

The only exception to this finding is that the predicted delay at the Field School driveway is forecasted to increase somewhat during the morning peak hour. Conditions at the northbound approach to this intersection are forecasted to increase to LOS “F” conditions during this period, although it should be noted that the amount of delay computed in existing conditions is greater than what was observed in the field. In order to mitigate this delay and improve the overall intersection capacity results, signal timing modifications can be implemented at this location. As shown on Table 8, this improvement would allow the intersection and northbound approach to operate at acceptable levels, in fact reducing delay compared to that which is currently present under existing conditions.

Table 8: Capacity Analysis Results

Intersection	Existing (2012) Conditions				2018 Future Background Conditions without Development				2018 Total Future Conditions with Development					
	AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		Mitigated AM*		PM Peak	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Garfield St & Foxhall Rd	14.5	B	8.6	A	16.0	B	9.5	A	16.2	B	16.2	B	9.6	A
	22.1	C	27.1	C	21.8	C	25.4	C	21.8	C	21.8	C	25.3	C
	32.3	C	32.3	C	32.6	C	29.0	C	32.7	C	32.7	C	28.9	C
	11.3	B	5.9	A	13.0	B	7.8	A	13.1	B	13.1	B	7.9	A
	11.6	B	4.5	A	13.8	B	5.7	A	14.2	B	14.2	B	5.8	A
2. W St & Foxhall Rd	69.6	F	32.2	D	113.3	F	38.4	E	110.0	F	110.0	F	39.0	E
	76.4	F	17.9	C	118.4	F	19.8	C	115.1	F	115.1	F	19.9	C
	1.1	A	1.3	A	1.4	A	1.5	A	1.4	A	1.4	A	1.5	A
	0.2	A	0.1	A	0.3	A	0.2	A	0.3	A	0.3	A	0.2	A
	11.2	B	6.6	A	12.3	B	7.2	A	12.5	B	11.4	B	7.3	A
3. Whitehaven Pkwy & Foxhall Rd	28.8	C	44.1	D	29.5	C	44.6	D	29.5	C	29.5	C	44.6	D
	6.7	A	2.9	A	8.4	A	4.1	A	8.8	A	8.8	A	4.2	A
	7.0	A	3.3	A	8.2	A	3.5	A	8.3	A	6.1	A	3.5	A
	88.2	F	132.6	F	104.4	F	155.3	F	106.1	F	106.2	F	156.3	F
	100.4	F	63.7	E	107.0	F	65.7	E	107.0	F	107.0	F	65.7	E
4. Reservoir Rd & Foxhall Rd	35.8	D	45.1	D	35.6	D	46.3	D	35.5	D	35.5	D	46.3	D
	70.1	E	30.3	C	89.3	F	31.6	C	92.5	F	92.5	F	31.7	C
	121.2	F	360.2	F	146.5	F	423.6	F	148.4	F	148.6	F	426.4	F
	29.6	C	6.2	A	40.0	D	6.3	A	43.8	D	15.4	B	6.6	A
	26.4	C	46.3	D	26.4	C	46.3	D	26.4	C	26.4	C	46.4	D
5. Site Driveway & Foxhall Rd	54.5	D	6.8	A	76.3	E	7.0	A	84.2	F	22.8	C	7.1	A
	7.0	A	3.1	A	8.1	A	3.4	A	8.3	A	8.1	A	3.5	A
	16.4	C	14.0	B	17.1	C	14.4	B	17.1	C	17.1	C	14.4	B
	2.0	A	2.4	A	2.1	A	2.6	A	2.2	A	2.2	A	2.6	A
	76.6	F	28.8	D	82.5	F	30.2	D	83.2	F	83.2	F	30.2	D
6. Garfield St & New Mexico Ave	31.7	D	23.5	C	33.0	D	24.2	C	32.7	D	32.7	D	24.2	C
	0.2	A	0.1	A	0.2	A	0.1	A	0.2	A	0.2	A	0.1	A
	2.3	A	1.7	A	2.4	A	1.9	A	2.5	A	2.5	A	1.9	A
	76.6	F	28.8	D	82.5	F	30.2	D	83.2	F	83.2	F	30.2	D
	31.7	D	23.5	C	33.0	D	24.2	C	32.7	D	32.7	D	24.2	C
7. W St & MacArthur Blvd	0.2	A	0.1	A	0.2	A	0.1	A	0.2	A	0.2	A	0.1	A
	2.3	A	1.7	A	2.4	A	1.9	A	2.5	A	2.5	A	1.9	A

* Mitigated AM Conditions show the impact of signal retiming at Intersection 5 across the entire study area.

Capacity Analysis Findings

The capacity analysis results are as follows:

- With the addition of the Field School traffic, neither the commuter-based traffic nor the school peak period traffic will be affected greatly by vehicle trips generated by the proposed expansion. Delay at each of the study area intersections exceeding acceptable levels of service under future conditions without the expansion are anticipated to only increase by three (3) seconds with the future Field School expansion. All those intersections currently operating at acceptable levels will continue to operate in that manner under future conditions with the expansion following the proposed signal improvements at the Field School driveway. Intersections that do not currently operate at acceptable levels of service under existing conditions include:

- W Street & Foxhall Road

Moderate delay currently exists along both W Street approaches. However, field observations indicate that the platooning of traffic along Foxhall Road leaves adequate gaps for side street traffic to merge onto the main road without the level of delay shown in the calculations.

Traffic volume forecasts indicate that delay will continue to exist along the W Street approaches in future conditions, although it should be noted that the Field School expansion will not add any traffic to these movements.

- W Street & MacArthur Boulevard

This intersection sees moderate delay along the eastbound approach during the AM peak hour. However, as can be seen in Figure 16, total traffic volumes on this approach under future conditions are only 8 vehicles per hour, so the low traffic volumes do not support any modifications to the current traffic control. Furthermore, given the low number of additional Field School trips forecasted by the site, the expansion is not expected to add any traffic to this intersection.

- Reservoir Road & Foxhall Road

This location is a major transportation node in Northwest DC, governing the crossing of two major inbound commuter routes, Foxhall Road and Reservoir Road/MacArthur Boulevard. As such, significant traffic volumes place high demand at each approach on the intersection timing plan, while at the same time sufficient right of way does not exist to allow for any modifications to the intersection configuration.

Regional traffic growth and background developments add additional strain to the intersection under future background without the Field School expansion. However, there is virtually no increase in delay – at most three (3) seconds per approach – between the future background without development scenario and the total future with development scenario as the Field School expansion is only projected to add 15 peak hour trips during the morning and 8 peak hour trips in the evening. These volumes correspond to less than 1% of the total future traffic volumes.

Long-term intersection improvements will eventually be required in this location to fix longstanding traffic issues; however, the Field School expansion program will not have a significant impact on intersection operations relative to existing volumes or forecasted traffic growth.

- Delay present at the Field School southern driveway during the morning peak hour is predicted to increase following the completion of the expansion program; however, with signal timing improvements at this intersection

delays can be reduced to acceptable levels that actually represent a decrease in delay compared to existing conditions.

- Pedestrian access to the site via the Field School southern driveway is anticipated to adequately serve the occupants and visitors of the site.
- The addition of three (3) background developments included as part of this study do not adversely affect the transportation network compared to existing conditions in a way that would require mitigation procedures at any of the study intersections.

Since the inclusion of the traffic associated with the Field School is expected to only minimally increase delay at each of the study intersections and will not cause any off-site intersections to exceed acceptable levels of service, no traffic management measures are needed to mitigate impacts of site generated traffic. Signal timing modifications should be considered at the Field School signalized driveway if delay at that location is shown to exceed acceptable levels in the future with the proposed expansion.

Delay and Volume-to-Capacity Comparison

In an effort to address impacts to the study area, comparisons were made between future background and total future delay and volume-to-capacity (v/c) ratio forecasts. These comparisons were made for only those intersections shown to exceed acceptable levels of service (LOS E and F). Under total future conditions, three study area intersections are forecasted to exceed acceptable levels during either the AM or PM peak hours as shown below in Table 8 above. As shown in Table 9, the only instance when the delay or v/c ratio exceeds levels where mitigation would be recommended (greater than 2.0%) is at the W Street and Foxhall Road intersection during the PM peak hour. During this time period, the v/c ratio experiences an increase of 2.5% while the delay experiences an increase of 1.6% when compared to background conditions.

Table 9: Delay and Volume-to-Capacity Comparison

Intersection	2018 Future Background Conditions without Development						2018 Total Future Conditions with Development									
	AM Peak			PM Peak			Mitigated AM Peak					PM Peak				
	LOS	Delay	v/c	LOS	Delay	v/c	LOS	Delay	v/c			LOS	Delay	v/c		
2. W St & Foxhall Rd	F	113.3	0.96	E	38.4	0.40	F	110.0	-2.9%	0.95	-1.0%	E	39.0	+1.6%	0.41	+2.5%
Eastbound	F	118.4	0.36	C	19.8	0.04	F	115.1	-2.8%	0.36	0.0%	C	19.9	+0.5%	0.04	0.0%
Westbound	A	1.4	0.04	A	1.5	0.06	A	1.4	0.0%	0.04	0.0%	A	1.5	0.0%	0.06	0.0%
Northbound	A	0.3	0.01	A	0.2	0.01	A	0.3	0.0%	0.01	0.0%	A	0.2	0.0%	0.01	0.0%
Southbound																
4. Reservoir Rd & Foxhall Rd	F	104.4	1.12	F	155.3	1.08	F	106.2	+1.7%	1.12	0.0%	F	156.3	+0.6%	1.08	0.0%
7. W St & MacArthur Blvd	F	82.5	0.16	D	30.2	0.01	F	83.2	+0.8%	0.16	0.0%	D	30.2	0.0%	0.01	0.0%
Eastbound	D	33.0	0.22	C	24.2	0.24	D	32.7	-0.9%	0.23	+4.5%	C	24.2	0.0%	0.24	0.0%
Westbound	A	0.2	0.28	A	0.1	0.32	A	0.2	0.0%	0.28	0.0%	A	0.1	0.0%	0.32	0.0%
Northbound	A	2.4	0.35	A	1.9	0.21	A	2.5	+4.2%	0.35	0.0%	A	1.9	0.0%	0.21	0.0%
Southbound																

While the v/c ratio for this movement is expected to experience an increase of greater than 2.0%, mitigation is not recommended at this location. Signalization is not recommended due to the proximity to The Field School driveway and opposition from the community and widening of this approach to incorporate a second turn lane would not be feasible as existing properties on both the north and south side of W Street restrict this type of modification.

With this recommendation, no additional mitigation measures are deemed necessary beyond the signal timing modifications at the Field School site driveway.

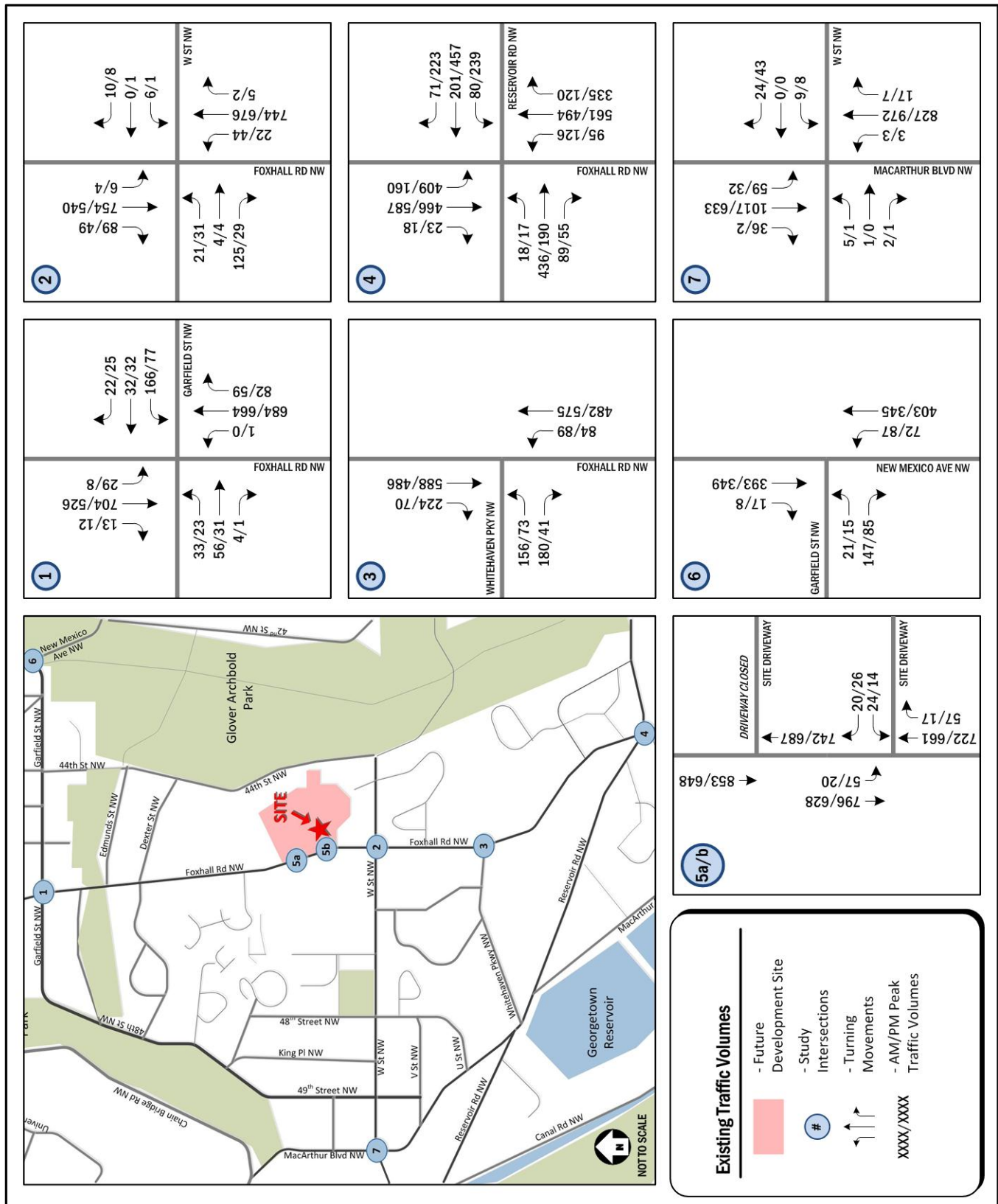


Figure 14: Existing Traffic Volumes

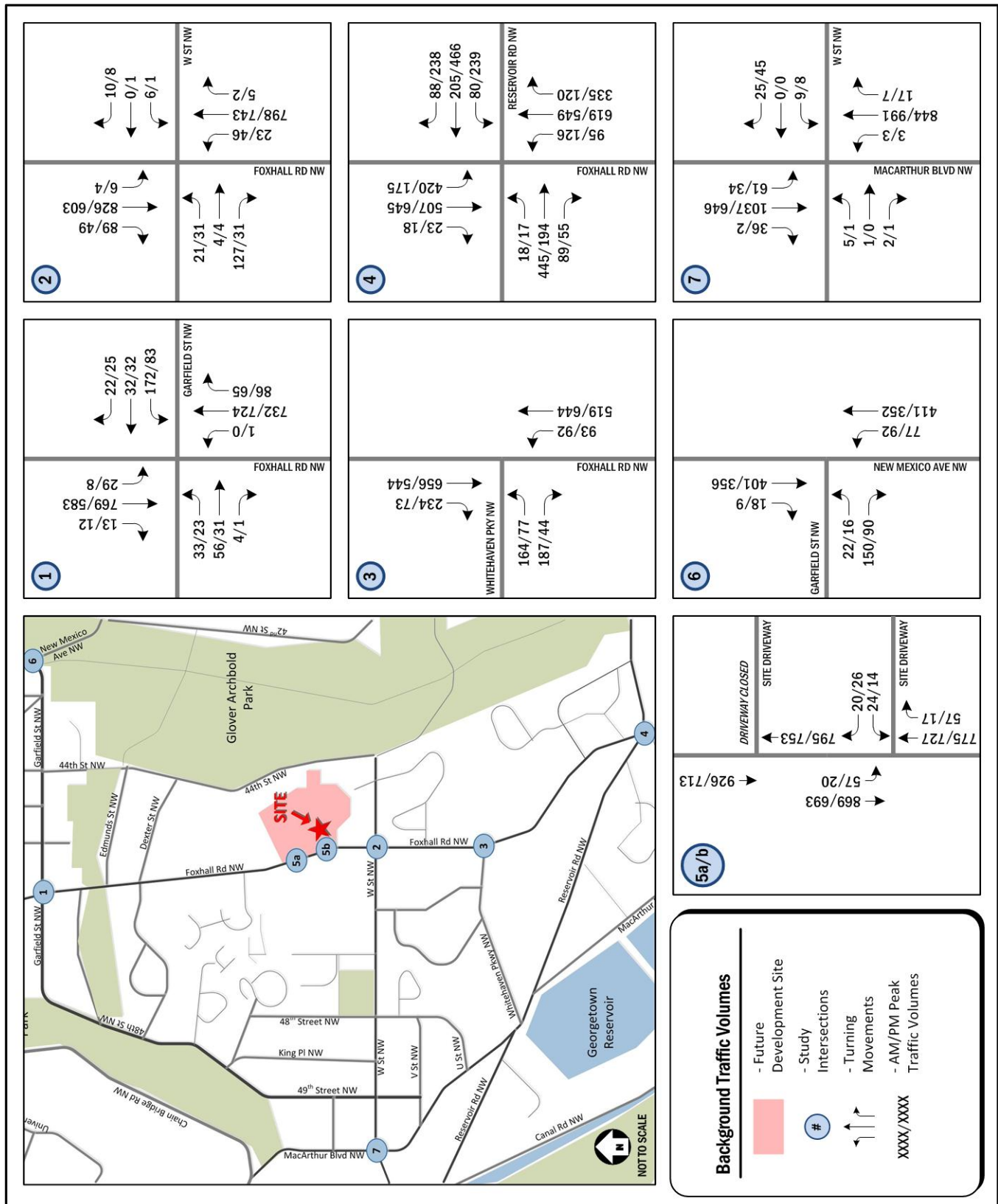


Figure 15: Future without Development Traffic Volumes

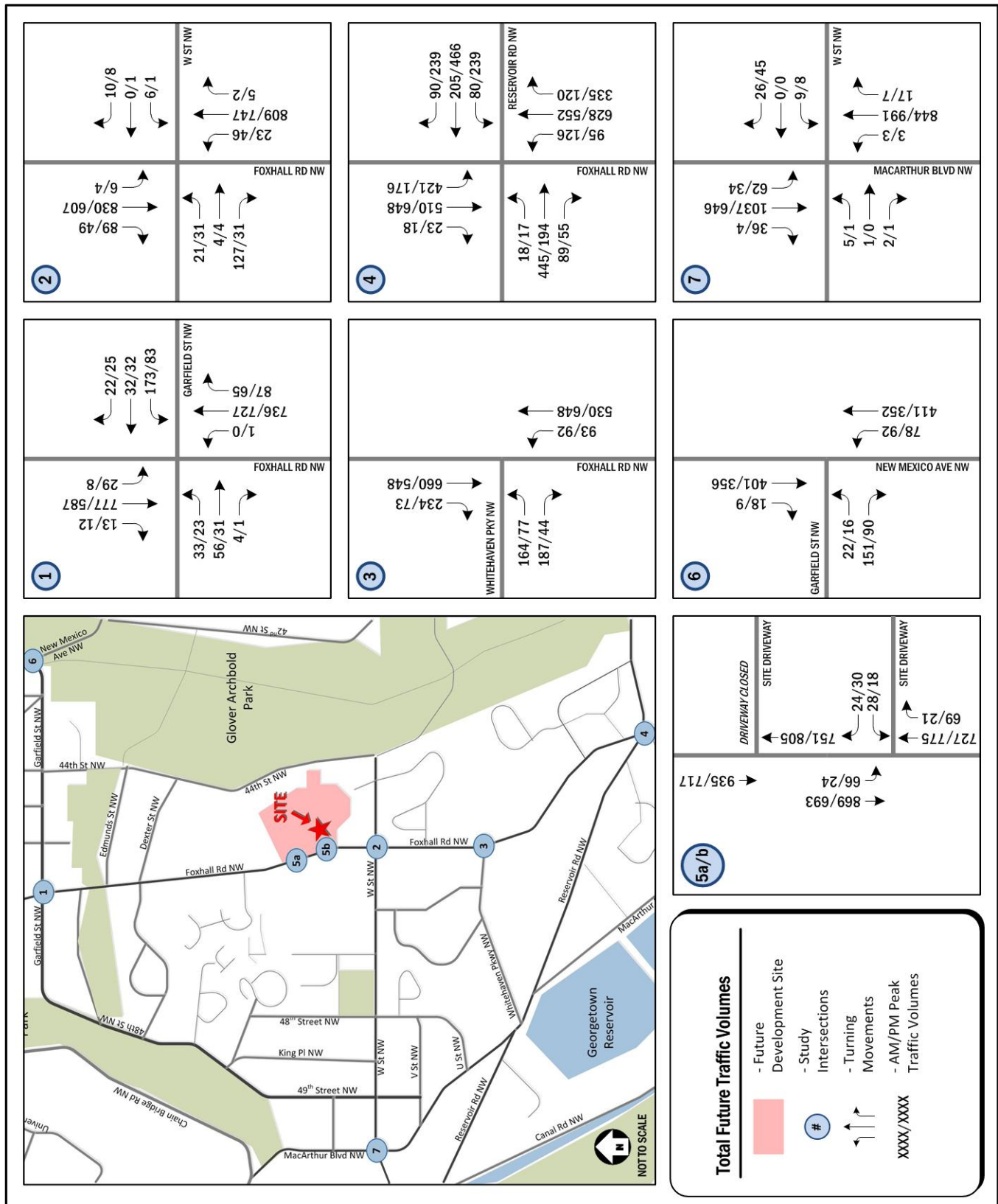


Figure 16: Future with Development Traffic Volumes

CRASH DATA ANALYSIS

This section presents an analysis of crash data provided by DDOT. Crash rates were analyzed at all study area intersections to determine if any of these locations had an abnormally high crash rate.

Summary of Available Crash Data

DDOT provided reports from the Traffic Accident Reporting and Analysis System covering the last four years of intersection data for which crash statistics were available, ranging from January 2008 to December 2011. Crash records were not available for the intersection of the site driveway and Foxhall Road; however, data was available for the remaining study area intersections.

This crash data was reviewed and analyzed to determine the accident rate at each location. For intersections, the accident rate is measured in accidents per million-entering vehicles (MEV). The accident rates per intersection are shown in Table 10.

Table 10: Intersection Crash Rates

Intersection	Crashes, January 2008 - December 2011			Rate per MEV*
	Total Crashes	Ped Crashes	Bike Crashes	
1. Garfield St & Foxhall Rd	5	0	0	0.21
2. W St & Foxhall Rd	4	0	0	0.17
3. Whitehaven Pkwy & Foxhall Rd	8	0	0	0.36
4. Reservoir Rd & Foxhall Rd	11	0	1	0.28
5. Site Driveway & Foxhall Rd	<i>records not available in DDOT TARAS database</i>			<i>unknown</i>
6. Garfield St & New Mexico Ave	3	0	0	0.22
7. W St & MacArthur Blvd	5	0	0	0.21

* - Million Entering Vehicles; volumes estimated based on turning movement count data

According to the Institute of Transportation Engineer's *Transportation Impact Analysis for Site Development*, an accident rate of 1.0 or higher is an indication that further study is required. As shown in the above table, none of the intersections exceed this threshold.

Potential Development Plan Impacts

This study finds that the current rate of crashes found throughout the study area is not indicative of systemic safety issues. The crash rates calculated at all study intersections for which data is available are quite low compared with other locations within the District, especially given the amount of commuter traffic that travels along several of the roadways within the study area. The low crash rates can be attributed to a number of factors, including ample 12'-wide travel lanes, traffic signal control at locations with significant traffic volumes along side streets and turning movements, and adequate sight distances at stop-controlled approaches.

Although data is not available at the site driveway intersection, the low crash rates at other intersections along the Foxhall Road corridor imply that the travel volumes, driver behavior, and vehicle platooning in this location are conducive to safe conditions and low crash rates. These factors, in conjunction with the pedestrian protection, sight distances, and intersection signalization present at this intersection, indicate that there will be no safety concerns at the site driveway after the proposed expansion of the Field School.

Similarly, the development plan is not expected to cause significant changes to travel patterns throughout the study area. As discussed elsewhere in the TIS, the Field School expansion project will not be a major contributor to traffic volumes at

any approaches apart from the site driveway. For this reason, the project will not have a significant impact on intersection crash rates. Therefore, this analysis concludes that there will be no safety concerns under total future traffic conditions.

TRANSPORTATION DEMAND MANAGEMENT

This section contains a proposed set of Transportation Demand Management (TDM) strategies for the Field School development. The goal of TDM strategies are to minimize the impact of site traffic on the transportation network and promote the efficient use of transportation resources. TDM strategies are specifically tailored to promote travel modes that have the least impact on the transportation network and other resources, such as the environment, and discourage those that have the greatest impact. Private vehicle congestion, parking demand, and service and loading activities are the primary transportation issues in the District, along the Foxhall Rd NW corridor and within the neighborhood surrounding the site. To address these issues, this report recommends TDM strategies that promote walking, cycling, and transit use as well as strategies that manage and minimize the impact of site generated vehicle traffic. These recommendations included below are intended to increase the TDM strategies already in place at the Field School.

The remainder of this section summarizes the existing TDM strategies in place at the Field School and the proposed recommends strategies to maximize existing transportation resources and minimize site impacts.

Existing TDM Strategies

This section reviews the TDM strategies currently in place at the Field School. Based on the field data collection effort prepared by Gorove/Slade and information provided by the school, the Field School has been very successful in implementing an aggressive TDM program which has been proven to reduce the impact of the school on the surrounding road network. As part of their program, the Field School currently has the following elements in place for reducing vehicular traffic:

- *Private Shuttles*

The private shuttle system as mentioned previously picks-up and drops-off at various locations throughout the District as well as Virginia and Maryland. Serving an area of nearly 30 square miles, the school is able to capture traffic from areas such as McLean and Rosslyn, Virginia; Foggy Bottom, Cleveland Park and Fort Totten in the District and Friendship Heights in the District and Maryland. Based on the observations from the field, it is anticipated that these shuttles are able to capture approximately 40 percent of the student population as shown in Table 1.

- *Carpooling*

Carpooling to and from the school has also greatly impacted traffic within the study area. For parents dropping off students at the school, each vehicle must have at a minimum two (2) students if drop-off occurs prior to 9:00 AM. Given classes begin at 8:00 for 7-8 graders and at 8:50 for 9-12 graders, nearly all of the parent drop-offs are required to have two students in their vehicle.

In addition to student drop-offs by parent, a select number of students are permitted to drive to school. Only those with a good driving record and at a minimum age of 17 are permitted – in the 2011-2012 school year, this was 35 students. These students are also required to carpool and based on their permanent residence, they are required to carpool with either 1 or 2 students. For those residing within the District, they are required to carpool with at least two (2) other students while those residing within Virginia or Maryland, must carpool with at least one (1) other student.

Based on the occupancy of vehicles entering and exiting the Field School during the morning and afternoon peak periods, the average number of persons per vehicle is expected at approximately 1.65 people, which based on the standard rate of 1.1 persons per vehicle is an increase of 50 percent.

- *Staggered School Schedule*

The Field School has also helped disperse site generated traffic by staggering the starting time of classes. For middle school students, classes begin at 8:00 AM while classes for high school students begin at 8:50 AM. This naturally spreads out the number of vehicles arriving at the school during the peak arrival period limiting the impact of peak commuter traffic. With these start times, faculty and staff for each grade level also stagger their work schedules, further reducing the overall impact on the network.

TDM Strategies

In the various sections discussed above, the Field School has proven to be a leader in TDM operations. They have successfully reduced the amount of traffic per student at the school since an earlier BZA approval and intend on continuing with their efforts to reduce traffic on the surrounding road network. In order to meet these goals, the school will maintain the use of private shuttles for students, encourage and if necessary enforce carpooling and maintain the existing staggered school schedule. With each of these elements in place, the school will continue to generate a lower number of trips resulting in less of an impact to the surrounding network. Although the school is already making strides in their TDM efforts, some additional efforts expected by The Field School include:

- *New Bicycle Spaces*

As mentioned in the previous sections of this study, The Field School is proposing to increase bicycle ridership by installing four (4) new dedicated bicycle parking spaces. These spaces are proposed to be installed adjacent to existing spaces at the southern location and will be covered. It has been found that this area received higher demand during typical conditions and could increase bicycle ridership to the school.

- *Bus/Shuttle Enhancements*

The Field School already provides extensive bus/shuttle operations available to each of its students in the District, Virginia and Maryland. The school intends on continuing these operations, but will reevaluate the shuttle ridership and operations regularly. The school regularly addresses concerns of students and parents regarding pick-up/drop-off locations, overall ridership from Metrorail locations, and many other items. When necessary, The Field School discusses these concerns with the shuttle operator in order to revamp routes to increase overall ridership. With the proposed increase in enrollment with this application, the school is committing to continue these efforts to strive for consistent or improved shuttle ridership for the new students.

ENVIRONMENTAL IMPACT SCREENING FORM (EISF)

The results of this study were used to prepare responses to transportation –related questions presented in the District of Columbia Department of Consumer and Regulatory Affairs (DCRA) Environmental Impact Screening Form (EISF). These responses are presented below.

6. Give the modal split of residents, employees, and daily customers/visitors (i.e., number expected to arrive by automobile/mass transit/walking/bicycle).

After the proposed expansion, the mode split of the site is expected to remain consistent with current trends. The majority of faculty and staff members will continue to drive to and from the site, and a significant percentage of students will continue to be dropped off by private vehicles and carpools. While data on the number of students and faculty/staff who walk to the campus is not available, count data shown in Table 1 indicates that approximately 40% of students utilize the Field School's shuttle services.

7a. Give the estimated number of peak hour morning (6:30 AM – 9:30 AM) and evening (4:30 PM – 6:30 PM) vehicular trips into and out of the property.

The expansion will generate an additional 21 inbound and 8 outbound trips during the AM peak hour and 8 inbound and 8 outbound trips during the PM peak hour of the adjacent street. This results in a total vehicular trip generation of 107 in and 45 out during the AM peak hour and 40 in and 42 out during the PM peak hour, as shown in Table 7.

7b. Give the location of parking entry, drop off areas and pedestrian entry.

Two driveway entrances are located along Foxhall Road. The southern entrance provides two outbound lanes and is protected by a signal. The northern entrance is closed and only available to heavy vehicles when necessary. Pedestrian access is provided at both driveways from the sidewalk that runs along the eastern shoulder of Foxhall Road. Building access points, pick-up and drop-off areas, and vehicular routing to these areas are shown in Figure 9.

10. Will the proposed project provide 50 or more new parking spaces?

Yes _____ No ☒

14. Will the proposed project increase traffic volume, which would result in a street volume – to capacity ratio of 0.90, or greater (Street Level-of- Service E or F)?

Yes _____ No ☒ *With mitigation, the total future AM peak v/c ratio at Intersection 5 remains below 0.90. The v/c ratios of greater than 0.90 that exist at Intersection 2 and 4 are already present during existing conditions.*

15. Will the proposed project increase traffic volume that would result in a vehicle delay of 55 or more seconds at any signalized intersection (Intersection Level- of – Service E or F)?

Yes _____ No ☒ *With mitigation, the total future AM peak delay at Intersection 5 drops below 55 seconds. The approaches with delay of greater than 55 seconds that exist under total future conditions at Intersections 2, 4, and 7 are already present during existing and future background conditions.*

CONCLUSIONS

The following report presents the findings of a Transportation Impact Study (TIS) conducted for The Field School in support of its application to the Board of Zoning Adjustment (BZA). This case intends to increase the student and faculty/staff population while adding additional building space. The subject property is located within Lots 856, 861, 878, and 879 in Square 1341 along Foxhall Road in Ward 3 of Washington, DC. The proposed BZA application requests an increase in the student population to 400 (from 323) students along with an increase to 110 (from 77) full time equivalent (FTE) faculty and staff. A review of the proposed site area found the following:

- Traffic in the study area is heavily commuter-based as Foxhall Road NW and Reservoir Road NW operate as major thoroughfares connecting office workers to the downtown business core of the District of Columbia.
- Other roadways not utilized as a thoroughfare experienced limited vehicular activity with moderate pedestrian activity.
- The pedestrian experience was observed as adequate with sidewalks and crosswalks located along all roadways and at major intersections.
- Bicycling conditions in the study area are currently poor. Few cyclists were observed using bicycles to commute to the immediate area, as well as to other destinations. With no existing bike lanes or trails, these cyclists were observed along the area roadways and sidewalks.
- Multiple area and regional commuter bus routes serve the site area with regular stops along MacArthur Blvd.
- The Field School development provides satisfactory pedestrian facilities and connectivity throughout the study area.

With the anticipated increase in students and faculty/staff, the overall operations of The Field School would not be impacted. Student drop-off and pick-up would continue to occur during the existing school hours with a limited additional increase in faculty/staff to support to increased student population. Access for students and faculty/staff would remain with three primary drop-off/pick-up locations along the front of the building with dedicated parking for those commuting to school by private vehicle. Shuttle service would remain visiting six (6) separate Metrorail stations during the morning commute and five (5) separate stations during the afternoon commute. In addition to shuttle services remaining consistent, the existing parking field will continue to serve the school while carpooling will still be required for students and parents.

A capacity analysis was performed for The Field School incorporating the increase in faculty/staff personnel and increase in student population which included a study area of seven (7) existing intersections; with the following results:

- Of the study area intersections, each of the signalized intersections excluding the Foxhall Road & Reservoir Road intersection currently operate at acceptable levels of service during both the morning and afternoon peak hours. Although the level of service for the northbound movement of the intersection of Foxhall Road and the site driveway deteriorates to LOS F after the proposed Field School expansion during the AM peak hour, minor changes to the operation of the signal at this location will correct this deficiency without negatively impacting the rest of the study area. In fact, the retimed signal will cause the site driveway intersection to operate with less delay than is present in existing conditions. Neither the commuter-based traffic nor the local residential based traffic will be negatively affected by vehicle trips generated by the proposed Field School development.
- Two unsignalized study area intersections along W Street currently operate beyond acceptable conditions during the morning peak hour and are expected to continue to operate under the same conditions with background growth and the expansion of the Field School. However, the delay calculated at each of these intersections does

not depict conditions observed in the field. The presence of upstream and downstream traffic signals along the MacArthur Boulevard and Foxhall Road corridors means that vehicles are not able to spread out and instead remain bunched in a series of platoons. Between these platoons, ample gaps exist for the low volume of vehicles along side streets at unsignalized intersections to turn onto MacArthur Boulevard and Foxhall Road. The combination of low turning volumes and adequate platooning means that these conditions of minimal delay will continue to exist under future conditions following the expansion of the Field School. In this way, the proposed development is not expected to cause any significant amount of additional delay at these intersections.

- Pedestrian access to the site via the signalized entrance along Foxhall Rd is anticipated to adequately serve the occupants and visitors of the site.
- The addition of three (3) background developments included as part of this study do not adversely affect the transportation network requiring mitigation procedures at any of the study intersections.

With The Field School's increased population, the capacity results indicate no intersections are anticipated to exceed acceptable levels of service. Further, there is anticipated to be little change to the levels of service expected throughout the study area due to the low number of future trips that are added to the road network.

APPENDIX A

SCOPING DOCUMENT

Project Name & Applicant Team:	The Field School Nancy Anderson – The Field School, 202-295-5834, nancy@fieldschool.org Phil Feola – Goulston&Storrs, 202-721-1114, pfeola@goulstonstorrs.com Erwin Andres – Gorove/Slade, 202-296-8625, Erwin.andres@goroveslade.com Chris Bowyer – Gorove/Slade, 202-296-8625, Chris.bowyer@goroveslade.com
Case Type & No. (PUD, LTR, etc...)	BZA
Street Address:	2301 Foxhall Road NW, Washington, DC
Estimated Date of Hearing:	Preliminary Meeting with OP/DDOT scheduled for week of May 29, 2012
Meeting Type/Date (Concept Meeting, Scoping Meeting, etc.):	Concept Meeting
Description of Project:	The Field School is proposing to increase the enrollment over the next 5 years. While the school currently serves 323 students, they anticipate a future enrollment of approximately 400 students by 2017. In addition to the increase in student population, an increase in faculty/staff would be necessary. In order to serve the student, physical construction would be completed along the property for new classrooms.
Proposed Site Access and New or Existing Curb Cuts Utilized:	Access to The Field School is restricted to a single signalized access point from Foxhall Road. There is also one additional driveway from the school to Foxhall Road, but that has been closed and it only utilized in the event of an emergency.
Preliminary Trip Generation and Mode Split Assumptions:	Program/trip generation assumptions: For purposes of estimating trip generation, we propose to utilize existing site driveway counts during the AM and PM peak periods and extrapolate to account for the additional enrollment.

		AM Peak			PM Peak		
		In	Out	Total	In	Out	Total
EXISTING STUDENT POPULATION							
Driveway Count	323 Students	86	37	123	32	34	66
FUTURE STUDENT POPULATION							
Driveway Count	400 Students	107	45	152	40	42	82
Net New Site Trips		21	8	29	8	8	16

Project Distribution List

Name	Representing:	Phone:	Email:
Chris Bowyer	Gorove/Slade	202-296-8628	clb@goroveslade.com
Erwin Andres	Gorove/Slade	202-540-1925	ena@goroveslade.com
Nancy Anderson	The Field School	202-295-5834	nancy@fieldschool.org
Phil Feola	Goulston&Storrs	202-721-1114	pfeola@goulstonstorrs.com
Anna Chamberlin	DDOT	202-671-2218	Anna.chamberlin@dc.gov

Guidelines & Proposed Scope/Discussion Items	DDOT Comments/Action Items
Planning Documents Guidelines: The study should address how the proposed development considers the primary planning documents of the District, as well as localized studies. It is important that the applicant references any planning documents relating to both city-wide initiatives as well as more localized issues. Documents that reference these specific areas include but are not limited to The Comprehensive Plan, District of Columbia Small Area Plans, the DDOT Design and Engineering Manual, the Public Realm Manual, and Green Streets literature. Proposed Documents: • DC's Transit Future Plan • Bicycle Master Plan • Pedestrian Master Plan • DC Streetcar System Plan	
Roadway Capacity & Operations Guidelines: Study Area The study area should include intersections where site impacts are most likely to occur, including: • All site access points • Adjacent streets/intersections at the boundary of the site • The nearest potentially affected streets Additional intersections may be appropriate given the projected trip generation of the project. Proposed Scope: 1. Foxhall Road NW/Garfield Street NW 2. Foxhall Road NW/W Street NW 3. Foxhall Road NW/Whitehaven Parkway NW 4. Foxhall Road NW/Reservoir Road NW • All Site Driveways A map of proposed intersections is attached to this form	
Development Scenarios Typically, all studies should include the following scenarios: • Existing conditions • Future conditions, at the anticipated build-out year of the development, <u>without</u> the construction of the development (Background Conditions) • Future conditions, at the anticipated build-out year of the development, <u>with</u> the construction of the development (Total Future Conditions) • Forecast year	

If the proposed development will be in stages, with significant trip generation for each stage, individual phases will need to be examined individually.

Proposed Scope:

- 2012 Existing conditions
- 2017 Future conditions without the development (2017 Background)
- 2017 Future conditions with the development (2017 Total Future)

Hours of Analysis

Typically, the peak hour of commuter traffic should be used, for both AM and PM rush hours. Other hours of analysis may be appropriate given the overall trip generation of the proposed development, and the expected hours of vehicular demand to and from the site. Land use may also determine the appropriate hours of analysis as some uses experience their peak demand on weekends and off-peak from the typical uses. For instance, proposed developments that may include commercial or retail use should include weekend hours in the analysis.

Proposed Scope:

Given the nature of the land use for the school, we propose to study AM and PM peak hours and conduct observations during the school's PM peak hour of the generator to determine if an analysis is required during that peak period.

Data Collection

Turning Movement Counts (TMCs) of study area intersections are usually conducted from 7-10am and 4-7pm on a typical weekday (Tues/Wed/Thurs), when Congress and public schools are in session. If the site generates existing traffic, all current site access driveways should be included in the TMCs. Other data collection may be necessary depending on the project (such as weekly ATR counts, counts of comparable site trip generation, parking occupancy counts, etc...). The study should describe what data will be collected to complete the transportation analysis.

Proposed Scope:

We propose taking TMCs from 6:30-9:30am and 4-7pm, during a "typical weekday" when DC public schools are in session. Data collection for the above mentioned intersections has previously been completed in an effort to ensure traffic associated with Georgetown University students is included within the TMCs. If additional intersections are required, we propose to review and adjust the traffic volumes as necessary to account for the potential trips.

We also propose to collect detailed parking and queuing information during the schools morning and afternoon peak periods to ensure the operations at the school would adequately support the expansion.

<u>Area Roadway Improvements</u> The study should account for approved and funded transportation improvement projects within the study area. Other planned, but not approved improvements may be appropriate to include. Proposed Scope: We propose including all recommendations incorporated as part of the above mentioned planning documents and any recommendations for roadway improvements as part of approved developments in the study area in addition to requesting planned roadway improvements from DDOT.	
<u>Background Developments</u> The study should account for traffic generated by developments in the study area that have an origin/destination within the study area. Typically, only approved/entitled developments are included in the list of background developments. Proposed Scope: Current approved background developments within the vicinity of the site include the following: 1. Expansion of St. Patrick's Episcopal Day School located on the east side of Foxhall Road south of Whitehaven Parkway. The expansion would incorporate approximately 120 middle school students and approximately 320 high school students. 2. Dunmarlin at Philip Parks – this is a single family home development consisting of approximately 46 homes that is approximately 50% occupied. No other developments appear to be approved/entitled within the DC Economic Partnership database which would impact the study area.	
<u>Background Growth</u> The study should account for through traffic, including that traffic from bicycle and pedestrians, within the study area from future developments that do not have origins or destinations within the study area. Proposed Scope: We will utilize annual average daily traffic (AADT) counts from DDOT to provide for an appropriate growth percentage through the study area.	
<u>Site Trip Generation</u> Typically, site trip generation is performed using ITE's <i>Trip Generation</i>. However, recent academic literature may suggest other appropriate site trip generation rates. ITE also provides methodologies for calculating internal capture/synergy for mixed-use developments and pass-by percentages for retail establishments. Mode splits are typically estimated using WMATA's <i>Ridership Survey</i>, but should include bicycle and pedestrian counts	

from Census data as well. Alternatives include using data from comparable sites, or published in other sources. All assumptions should be detailed in the study. All data source choices must also be justified within the study.

Proposed Scope:

As mentioned above, it is our intention to utilize existing driveway counts to assist in determining the increase in site traffic. With the proposed expansion, the site is not anticipated to stray from the current operations and services of the school; therefore, we anticipate a similar distribution and trip generation per student. We intend on utilizing the existing student population and trips on the site driveway to arrive at a ratio of trips per student then extrapolate for the additional student population.

Site Trip Distribution & Assignment

Trips generated by the site should be distributed throughout the study area network, based on one or a combination of the following:

- Existing count patterns
- Prior studies of similar land uses near the site
- Market studies
- Regional models

Market studies and regional models are generally used for larger developments.

Proposed Scope:

Given the limited road network adjacent to the school and that future operations of the site will mirror those of existing conditions, we propose to utilize existing traffic counts at the study area intersections and site driveway for establishing a site trip distribution. Based on the previously completed traffic counts for the study area, we have completed a trip distribution figure included within this document. This graphic is labeled Figure 2.

Analysis Methodology

Capacity analyses are typically performed using Highway Capacity Manual (HCM) methodologies using an industry recognized software package. Any overall intersection approach LOS that is shown at grade "F" should be highlighted in the study.

Proposed Methodology:

We propose performing the analysis in Synchro 7, and reporting the results in delay and LOS using HCM 2000 methodologies. Signal timings for the study area intersections will be obtained from DDOT and will be used in our Synchro models. We will highlight all LOS F conditions per intersection and approach. For each LOS F we will suggest potential mitigation measures, split into two groups: (1) locations where LOS F conditions are generated regardless of site development and (2) those locations where LOS F conditions are generated by the site. We will include discussion on the appropriateness and feasibility of potential improvements. All unsignalized locations with LOS F will be checked against signal warrants. All suggested mitigation measures incorporating turn lanes will include queuing information.

For mitigation measures necessary because of the site development, we will include a more detailed analysis, including proposed physical improvements and operational details, as necessary depending on the specific improvement recommended. Proposed signal timings changes will be made within the parameters of the timings received by DDOT, unless specifically mentioned within discussion of the mitigation measures.	
Safety Guidelines: The study should present the results of the safety analysis that demonstrates that the site will not create or exacerbate existing safety issues for all modes of travel. The analysis shall include applicable elements of the Highway Safety Manual and consider at least typical geometry, traffic composition, traffic control, user demographics, and other local conditions. The analysis should also include three years of crash data for all intersections within the roadway operations study area. Proposed CTR Scope: We will evaluate any safety issues at unsignalized intersections which experienced excess delay due to site traffic as part of a signal warrant analysis. This analysis will include a review of any crash data available at that intersection. Transit stop locations and access will be evaluated in addition to outlining the crosswalk locations within the study area. A review of the site plan and study area will be conducted to determine if any pedestrian issues will result by development of the proposed site.	
Bicycle & Pedestrian Facilities Guidelines: The study should identify existing and proposed pedestrian & bicycle service to the site. The study should highlight both the bicycle and pedestrian study areas (block radii, etc.). The site plan's accommodation of pedestrians and bicycles should be discussed, including identifying widths of sidewalks, any on-site bicycle pathways, and short and long-term bicycle parking. The plans should map a walk-shed of ½ mile and bike-shed of 3 miles, as well as pedestrian and bicycle access routes from transit and other major generators. For larger developments or campus plans, the study should take the multi-modal trip generation estimates (described above) and distribute them onto the network to identify the potential major and minor routes that people will use to and from the proposed development. Proposed CTR Scope: Future bicycle improvements within the study area will be obtained through DDOT and outlined within the technical graphics of the report while also including the existing bicycle network and bicycle parking facilities within the site.	

Transit Service Guidelines: The study should identify existing and proposed transit facilities that serve the site. Any plans for new facilities should be included, such as bus stops and shelters. The routes associated with any new or existing facilities should be addressed, including frequency of trips and destination points. The site plan's accommodation of transit service, including any changes to bus stops or other transit infrastructure necessary due to development should be discussed. For larger developments or campus plans, the study should take the multi-modal trip generation estimates (described above) and distribute them onto the network to identify the potential amount of new transit riders per route that people will use to and from the proposed development. Proposed CTR Scope: Existing accessibility and location of transit stops within the study area will be identified along with any recommended improvements.	
Site Access & Loading DDOT requires that loading take place in private space and that no back-up maneuvers take place in the public realm, whether in public space or in areas of private spaces accessible to the general public unless the Applicant can demonstrate a legitimate reason why this must occur. Any plans for new curb cuts need to demonstrate that they meet District standards, including sight distance. When it is determined that a new curb cut is necessary, the applicant should first consider an alley. If an alley is not available, access from a side street is the next preferable option. The Applicant should include plans for site access and loading pertaining to pedestrians, cyclists and vehicles, public space, bicycle and vehicular parking, bus routes and stops, and commercial vehicle routes <i>Freight</i> The study should identify existing and proposed commercial vehicle access to the site. The site plan's accommodation of freight and commercial delivery vehicles should be discussed including provision of loading facilities in private space (loading docks or alleys), requests for curb cuts, or requests for public space to be allocated for commercial vehicle loading. The study should identify the type and size of delivery vehicles that will access the site and an estimate of the volume and frequency of commercial vehicle activity at the proposed development. The study should also identify the potential routes that commercial vehicles will use to and from the proposed development. <i>Motorcoach</i> For developments that will generate significant tourist activity (hotels, museums, etc.) the study should discuss the site plan's accommodation of motorcoach access. This should include identifying areas for passenger unloading/loading, motorcoach parking, and the potential routes that commercial motorcoaches will use to and from the proposed development.	

Proposed CTR Scope: Access and loading are not anticipated to be modified as part of this BZA submittal. Currently, all loading operations occur in the “back of house” and do not expose students or faculty to safety hazards.	
Parking Guidelines: The parking study should include parking demand estimates and comparisons with the proposed parking supply, using data from comparable sites where possible. The Applicant, through DDOT, must conduct an analysis of impacts to residential parking and as necessary; propose a scheme to manage curbsides in light of future conditions. The analysis should take into account the parking spill-over area, including both on and off-street parking supply, and on and off-street parking utilization. Proposed CTR Scope: All parking for students and faculty/staff will continue to be accommodated within The Field School property. As part of the data collection, parking counts will be conducted to determine the peak parking demand and extrapolated to estimate the future parking demand. This will be used to determine the adequacy of the existing parking facility.	
Streetscape/Public Realm Guidelines: DDOT expects new developments to rehabilitate streetscape infrastructure between the curb and property lines. The applicant must work closely with DDOT and OP to ensure that design of the public realm meets current standards. Discussion Items: With this BZA application, there are not anticipated to be any modifications to the public realm. All access points and boundaries of the site are planned to remain identical to those as currently shown in the field today.	
Transportation Demand Management Guidelines: DDOT requires the applicant in all major development review cases to produce a TDM plan. The <i>Incorporation of Transportation Demand Management into the Development Review Process</i> document located on DDOT’s website provides guidance. The proposed TDM plan should demonstrate how it will facilitate a greater split between transportation modes. Proposed Scope: As part of a previous application The Field School incorporated an extensive TDM limiting the number of single occupancy vehicle trips visiting the site while also providing shuttle service from several area Metrorail locations. Given this extensive TDM package, no additional measures are intended to be incorporated on the site.	

Performance Monitoring & Measurement	
Guidelines: To complement a TDM plan, DDOT requires that an Applicant compose a performance monitoring plan for any large scale development. This should consist of the establishment of benchmark goals with regard to TDM measures, along with a commitment to increase TDM efforts should the Applicant fail to reach these goals. The monitoring methodology should at least include quantifiable site performance measures and suggest regular testing intervals. Proposed Scope: The BZA application for The Field School would not be qualified as a large scale development. Therefore, performance monitoring would not be necessary.	

- **Information/Data Requests (check if requesting data from DDOT):**
- ☐ District planning documents
- ☐ Local planning documents, including small area plans
- ☐ Information on programmed and/or funded roadway improvements in study area
- ☐ Studies for background developments in study area
- ☐ Signal Timings
- ☐ Crash Data

Proposed Schedule:

- DDOT comments on Scoping Document: May 23, 2012
- Transportation Consultant/Applicant responses to comments: May 25, 2012
- Phase I Completion:
- Phase II Completion:
- Submission of Report to DDOT:
- Zoning Commission Hearing: TBD

Attach any Figures, Tables, and Appendices here:



Figure 1: Site Location and Study Intersections



Figure 2: Trip Distribution Percentages

Christopher L. Bowyer

From: Chamberlin, Anna (DDOT) <anna.chamberlin@dc.gov>
Sent: Wednesday, May 23, 2012 1:32 PM
To: Christopher L. Bowyer
Subject: RE: Field School Scoping

Sorry, it went out last week for TOA review. We do have some comments and will want to see if they have anymore to add before sending it back to you, but I can tell you that we will need the following:

1. The school hours are 8:00 AM – 2:45 PM (teachers and staff: 5:30-6:15 PM); therefore, cover 6:30 AM to 9:30 AM for AM peak, and 2:30 PM to 7:00 PM for PM peak in the analyses to get the first group in dismissal.
2. Add the following intersections (unsignalized), because they feed the study intersections:
 - Garfield Street, NW and New Mexico Avenue, NW (NB movement along New Mexico Avenue towards the school is a left-turn against the direction of AM peak traffic)
 - MacArthur Boulevard, NW and W Street, NW (although the SB movement along MacArthur is with the direction of traffic in the AM peak, it is a left-turn movement at an unsignalized intersection)
3. Use ITE trip generation rates for Middle School (ITE Code 522) instead of driveway counts, because the additional 77 students will be middle school students and not a mixture of middle/high school, as it currently is. Middle school student travel will differ from high school student travel pattern.

Again, the above is not finalized, but just a heads up. Hope to have the scoping form back to you by next week.

Thanks,
Anna

From: Christopher L. Bowyer [<mailto:chris.bowyer@groveslade.com>]
Sent: Wednesday, May 23, 2012 10:29 AM
To: Chamberlin, Anna (DDOT)
Subject: RE: Field School Scoping

I don't see anything in my inbox...

Christopher L. Bowyer

Project Manager

direct: 202-296-8628 | fax: 202-785-1276

Please consider the environment before printing this email. Thank you.

From: Chamberlin, Anna (DDOT) [<mailto:anna.chamberlin@dc.gov>]
Sent: Wednesday, May 23, 2012 10:21 AM
To: Christopher L. Bowyer
Subject: RE: Field School Scoping

Did I not send the comments already? Thought I did.

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From: Christopher L. Bowyer [\[mailto:chris.bowyer@goroveslade.com\]](mailto:chris.bowyer@goroveslade.com)

Sent: Wednesday, May 23, 2012 10:23 AM

To: Chamberlin, Anna (DDOT)

Subject: Field School Scoping

Anna,

I wanted to touch base with you regarding the scoping for The Field School. As the school year is closely approaching there is only a few more days for accurate data collection and we wanted to make sure we had all of the information needed before the summer. If you have any questions on the scope or feel there are data needs we are missing, could you please give me a call to discuss. Just want to make sure we don't get held up.

Thanks,

-Chris

Christopher L. Bowyer, LEED® Green Associate

Project Manager

Gorove/Slade Associates, Inc.

Transportation Planners and Engineers

direct: 202-296-8628 | main: 202-296-8625 | fax: 202-785-1276

1140 Connecticut Avenue, NW, Suite 600 | Washington, DC 20036

chris.bowyer@goroveslade.com | www.goroveslade.com

Please consider the environment before printing this email. Thank you.

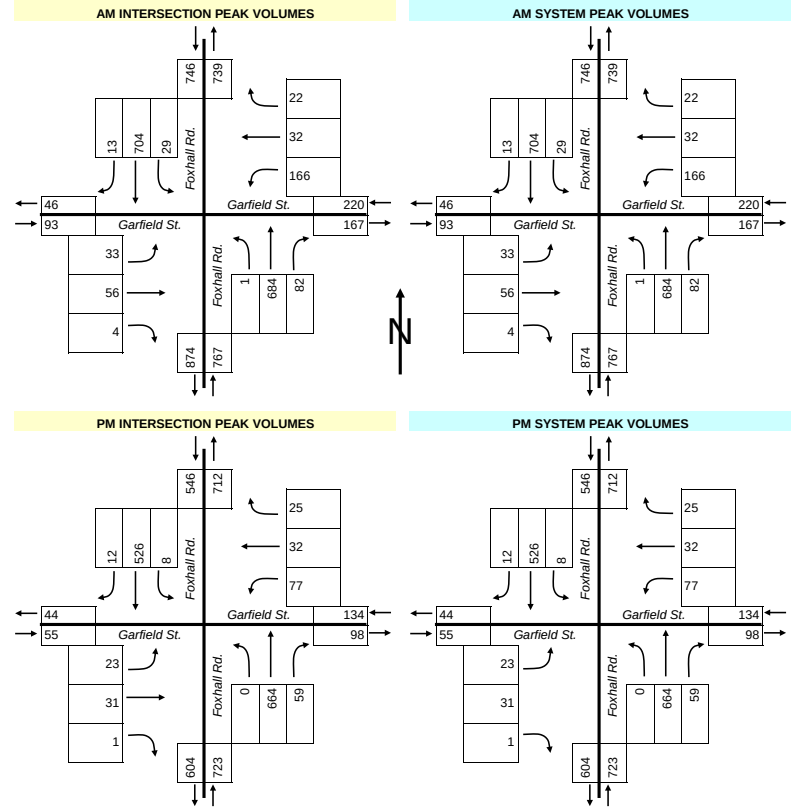
APPENDIX B

TURNING MOVEMENT COUNTS

Project Name : The Fields School
 Project # : 0
 Location : DC
 Data Source: Gorove/Slade Associates, Inc.

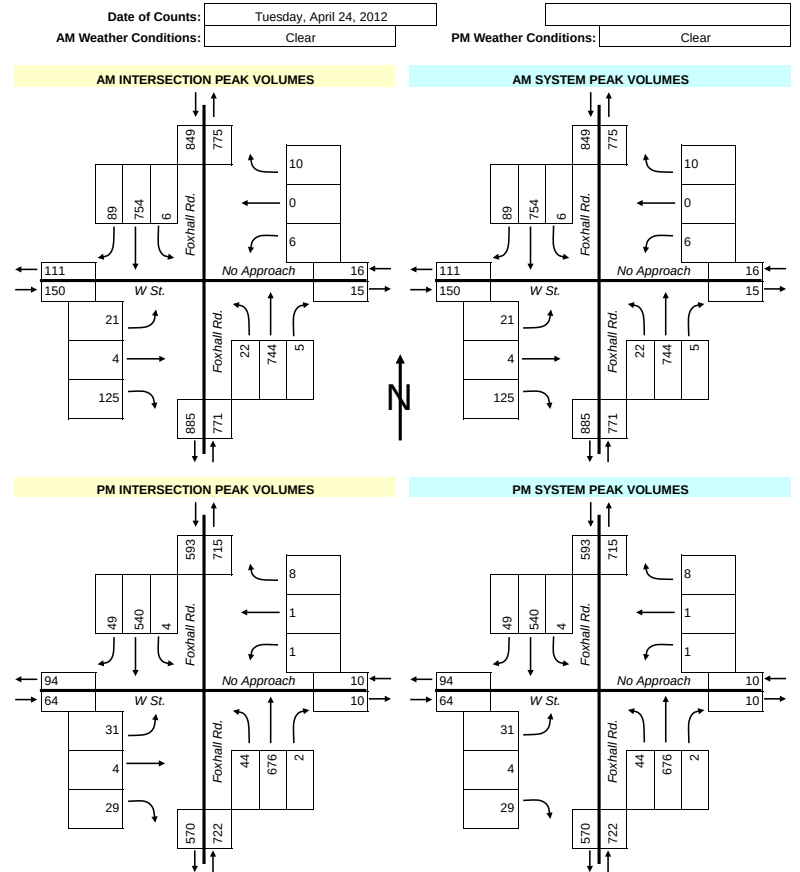
Intersection:		Garfield Street at Foxhall Road															
AM PEAK		Southbound				Westbound				Northbound				Eastbound			
Direction:		Foxhall Rd.				Garfield St.				Foxhall Rd.				Garfield St.			
Roadway:		Foxhall Rd.				Garfield St.				Foxhall Rd.				Garfield St.			
Movement:		Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
6:00 AM to 6:15 AM		0	17	0	0	0	0	4	1	4	49	0	0	1	0	1	1
6:15 AM to 6:30 AM		0	40	2	1	0	0	4	2	2	62	0	2	0	0	1	0
6:30 AM to 6:45 AM		1	58	1	1	3	1	5	0	6	89	0	0	1	0	1	1
6:45 AM to 7:00 AM		1	71	2	1	2	4	7	0	12	103	0	0	0	2	0	0
7:00 AM to 7:15 AM		4	100	5	0	2	2	18	0	10	113	0	0	0	1	3	1
7:15 AM to 7:30 AM		5	146	6	0	4	3	16	0	13	156	0	1	0	8	5	0
7:30 AM to 7:45 AM		2	143	12	1	8	10	39	0	28	169	0	0	1	19	8	2
7:45 AM to 8:00 AM		4	211	4	0	8	3	62	0	17	162	1	0	1	15	7	0
8:00 AM to 8:15 AM		6	187	5	0	4	10	45	0	19	189	0	1	1	11	9	1
8:15 AM to 8:30 AM		1	163	8	0	2	9	20	0	18	164	0	0	1	11	9	0
8:30 AM to 8:45 AM		2	139	9	1	4	11	29	2	12	137	0	0	0	19	8	0
8:45 AM to 9:00 AM		2	127	9	4	1	5	17	0	24	155	1	0	0	11	7	0
PM PEAK		Southbound				Westbound				Northbound				Eastbound			
Direction:		Foxhall Rd.				Garfield St.				Foxhall Rd.				Garfield St.			
Roadway:		Foxhall Rd.				Garfield St.				Foxhall Rd.				Garfield St.			
Movement:		Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
4:00 PM to 4:15 PM		7	120	0	1	2	6	21	1	9	136	0	2	2	10	8	1
4:15 PM to 4:30 PM		3	127	3	2	3	8	20	2	13	127	2	1	1	13	13	2
4:30 PM to 4:45 PM		6	104	2	0	3	7	26	7	13	120	0	1	1	4	8	0
4:45 PM to 5:00 PM		7	150	4	1	3	6	16	0	11	134	0	0	1	6	6	0
5:00 PM to 5:15 PM		4	142	1	1	9	6	20	0	17	171	0	0	0	9	7	0
5:15 PM to 5:30 PM		5	137	1	0	4	6	22	1	10	147	0	3	0	14	5	1
5:30 PM to 5:45 PM		2	127	5	1	4	12	19	0	12	180	0	1	0	4	4	0
5:45 PM to 6:00 PM		1	120	1	0	8	8	16	0	20	166	0	3	1	4	7	0
6:00 PM to 6:15 PM		3	137	2	2	3	8	18	0	17	148	0	5	0	10	4	0
6:15 PM to 6:30 PM		5	102	0	1	7	12	16	0	18	150	0	2	0	8	4	2
6:30 PM to 6:45 PM		1	131	1	1	6	8	16	0	16	150	1	0	2	3	3	0
6:45 PM to 7:00 PM		5	120	2	1	1	10	24	0	10	142	2	0	1	5	4	0
PEAK HOURS		Southbound				Westbound				Northbound				Eastbound			
Direction:		Foxhall Rd.				Garfield St.				Foxhall Rd.				Garfield St.			
Roadway:		Foxhall Rd.				Garfield St.				Foxhall Rd.				Garfield St.			
Movement:		Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
AM INTERSECTION PEAK HOUR		13	704	29	1	22	32	166	0	82	684	1	1	4	56	33	3
PM INTERSECTION PEAK HOUR		12	526	8	2	25	32	77	1	59	664	0	7	1	31	23	1
AM SYSTEM PEAK HOUR		13	704	29	1	22	32	166	0	82	684	1	1	4	56	33	3
PM SYSTEM PEAK HOUR		12	526	8	2	25	32	77	1	59	664	0	7	1	31	23	1
PEAK HOUR FACTORS		Southbound				Westbound				Northbound				Eastbound			
		Foxhall Rd.				Garfield St.				Foxhall Rd.				Garfield St.			
AM Peak Hour		Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach
AM PEAK HOUR		0.54	0.83	0.60	0.85	0.69	0.80	0.67	0.75	0.73	0.90	0.25	0.92	1.00	0.74	0.92	0.83
PM Peak Hour		Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach
PM PEAK HOUR		0.60	0.93	0.40	0.93	0.69	0.67	0.88	0.96	0.74	0.92	0.00	0.94	0.25	0.55	0.82	0.72
Overall AM PEAK HOUR FACTOR						= 0.92				Overall PM PEAK HOUR FACTOR				= 0.94			
AM Period Intersection Volume:		3732				PM Period Intersection Volume:				4086							

Date of Counts: Tuesday, April 24, 2012
 AM Weather Conditions: Clear PM Weather Conditions: Clear



Project Name : The Fields School
 Project # : 0
 Location : DC
 Data Source: Gorove/Slade Associates, Inc.

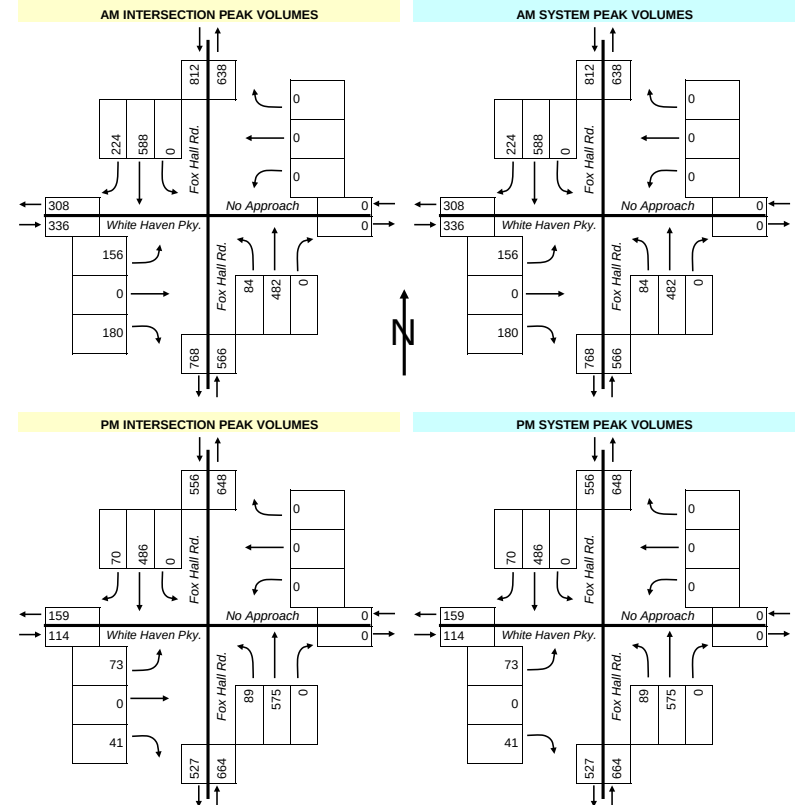
Intersection:		Foxhall Road at W Street Northwest															
AM PEAK		Southbound				Westbound				Northbound				Eastbound			
Direction:		Foxhall Rd.				No Approach				Foxhall Rd.				W St.			
Roadway:		Foxhall Rd.				No Approach				Foxhall Rd.				W St.			
Movement:		Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
6:00 AM	to 6:15 AM	0	20	0	0	0	0	0	0	0	53	0	0	0	0	1	0
6:15 AM	to 6:30 AM	1	31	0	0	0	0	1	0	1	66	3	2	3	2	0	2
6:30 AM	to 6:45 AM	3	55	2	0	0	0	1	2	0	89	0	1	3	0	0	1
6:45 AM	to 7:00 AM	3	75	1	0	0	1	1	0	1	131	2	0	5	0	1	0
7:00 AM	to 7:15 AM	9	96	4	0	0	1	2	0	1	123	3	2	11	1	2	0
7:15 AM	to 7:30 AM	7	124	1	0	1	0	1	0	0	174	5	1	7	1	1	0
7:30 AM	to 7:45 AM	10	166	0	0	4	0	1	0	1	184	1	0	29	1	2	1
7:45 AM	to 8:00 AM	34	202	3	0	4	0	3	0	3	181	9	1	31	0	5	1
8:00 AM	to 8:15 AM	27	220	2	0	0	0	1	0	1	193	5	2	40	1	4	4
8:15 AM	to 8:30 AM	18	166	1	0	2	0	1	0	0	186	7	1	25	2	10	0
8:30 AM	to 8:45 AM	12	138	3	0	1	2	2	0	0	148	9	1	20	0	12	1
8:45 AM	to 9:00 AM	13	147	0	0	3	1	0	0	1	159	7	0	25	1	11	0
PM PEAK		Southbound				Westbound				Northbound				Eastbound			
Direction:		Foxhall Rd.				No Approach				Foxhall Rd.				W St.			
Roadway:		Foxhall Rd.				No Approach				Foxhall Rd.				W St.			
Movement:		Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
4:00 PM	to 4:15 PM	6	135	0	0	2	0	0	0	0	137	6	13	11	0	4	15
4:15 PM	to 4:30 PM	17	138	0	0	0	1	1	0	0	124	14	4	5	0	7	4
4:30 PM	to 4:45 PM	13	122	0	0	2	0	0	0	1	134	7	3	4	1	9	2
4:45 PM	to 5:00 PM	12	154	2	0	0	0	1	0	1	129	6	1	9	0	14	0
5:00 PM	to 5:15 PM	17	150	2	0	2	0	1	0	1	170	8	2	9	3	8	0
5:15 PM	to 5:30 PM	14	134	0	0	3	1	0	0	0	147	12	1	9	1	3	1
5:30 PM	to 5:45 PM	10	130	1	0	2	0	0	0	1	192	10	2	3	0	11	1
5:45 PM	to 6:00 PM	8	126	1	0	1	0	0	0	0	167	14	1	8	0	9	1
6:00 PM	to 6:15 PM	11	143	4	0	0	0	2	0	2	145	15	5	7	0	11	4
6:15 PM	to 6:30 PM	10	94	3	0	1	0	2	0	6	168	11	6	5	0	11	5
6:30 PM	to 6:45 PM	17	137	4	0	3	1	0	0	1	144	14	4	7	1	9	4
6:45 PM	to 7:00 PM	14	125	0	0	1	2	1	0	2	147	12	3	5	1	11	4
PEAK HOURS		Southbound				Westbound				Northbound				Eastbound			
Direction:		Foxhall Rd.				No Approach				Foxhall Rd.				W St.			
Roadway:		Foxhall Rd.				No Approach				Foxhall Rd.				W St.			
Movement:		Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
AM INTERSECTION PEAK HOUR		89	754	6	0	10	0	6	0	5	744	22	4	125	4	21	6
PM INTERSECTION PEAK HOUR		49	540	4	0	8	1	1	0	2	676	44	6	29	4	31	3
AM SYSTEM PEAK HOUR		89	754	6	0	10	0	6	0	5	744	22	4	125	4	21	6
PM SYSTEM PEAK HOUR		49	540	4	0	8	1	1	0	2	676	44	6	29	4	31	3
PEAK HOUR FACTORS		Southbound				Westbound				Northbound				Eastbound			
		Foxhall Rd.				No Approach				Foxhall Rd.				W St.			
AM Peak Hour		Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach
AM PEAK HOUR		0.65	0.86	0.50	0.85	0.63	0.00	0.50	0.57	0.42	0.96	0.61	0.97	0.78	0.50	0.53	0.83
PM Peak Hour		Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach
PM PEAK HOUR		0.72	0.90	0.50	0.88	0.67	0.25	0.25	0.63	0.50	0.88	0.79	0.89	0.81	0.33	0.70	0.80
Overall AM PEAK HOUR FACTOR						= 0.90				Overall PM PEAK HOUR FACTOR				= 0.94			
AM Period Intersection Volume:		3632				PM Period Intersection Volume:				3928							



Project Name : The Fields School
 Project # : 0
 Location : DC
 Data Source: Gorove/Slade Associates, Inc.

Intersection:		Whitehaven Parkway at Foxhall Road															
AM PEAK		Southbound				Westbound				Northbound				Eastbound			
Direction:		Fox Hall Rd.				No Approach				Fox Hall Rd.				White Haven Pky.			
Roadway:		Fox Hall Rd.				No Approach				Fox Hall Rd.				White Haven Pky.			
Movement:		Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
6:00 AM	to 6:15 AM	2	19	0	0	0	0	0	0	0	52	2	0	1	0	2	0
6:15 AM	to 6:30 AM	2	32	0	0	0	0	0	1	0	65	4	0	3	0	0	0
6:30 AM	to 6:45 AM	7	48	0	2	0	0	0	0	0	93	5	0	3	0	7	1
6:45 AM	to 7:00 AM	8	67	0	0	0	0	0	0	0	117	6	0	2	0	3	0
7:00 AM	to 7:15 AM	15	92	0	0	0	0	0	3	0	123	11	1	9	0	7	2
7:15 AM	to 7:30 AM	20	116	0	0	0	0	0	0	0	148	15	0	15	0	18	0
7:30 AM	to 7:45 AM	48	142	0	0	0	0	0	0	0	124	22	1	25	0	45	1
7:45 AM	to 8:00 AM	79	142	0	0	0	0	0	1	0	108	22	0	39	0	43	5
8:00 AM	to 8:15 AM	71	151	0	0	0	0	0	1	0	123	21	0	53	0	42	1
8:15 AM	to 8:30 AM	26	153	0	0	0	0	0	1	0	127	19	0	63	0	26	1
8:30 AM	to 8:45 AM	7	143	0	0	0	0	0	0	0	127	12	0	41	0	17	3
8:45 AM	to 9:00 AM	22	127	0	0	0	0	0	0	0	102	10	0	57	0	28	1
PM PEAK		Southbound				Westbound				Northbound				Eastbound			
Direction:		Fox Hall Rd.				No Approach				Fox Hall Rd.				White Haven Pky.			
Roadway:		Fox Hall Rd.				No Approach				Fox Hall Rd.				White Haven Pky.			
Movement:		Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
4:00 PM	to 4:15 PM	28	114	0	1	0	0	0	2	0	106	24	0	15	0	31	2
4:15 PM	to 4:30 PM	28	99	0	1	0	0	0	0	1	81	22	3	14	0	20	9
4:30 PM	to 4:45 PM	19	110	0	0	0	0	0	0	0	99	8	0	13	0	17	5
4:45 PM	to 5:00 PM	22	143	0	0	0	0	0	0	0	123	11	5	12	0	9	17
5:00 PM	to 5:15 PM	18	142	0	1	0	0	0	0	0	131	11	0	11	0	28	1
5:15 PM	to 5:30 PM	11	118	0	0	0	0	0	0	0	120	20	0	12	0	12	0
5:30 PM	to 5:45 PM	20	114	0	2	0	0	0	0	0	173	35	0	9	0	14	0
5:45 PM	to 6:00 PM	21	112	0	0	0	0	0	1	0	151	23	0	9	0	19	1
6:00 PM	to 6:15 PM	8	116	0	0	0	0	0	0	0	122	17	0	13	0	15	0
6:15 PM	to 6:30 PM	8	83	0	1	0	0	0	0	0	124	19	0	12	0	22	3
6:30 PM	to 6:45 PM	12	134	0	0	0	0	0	0	0	123	13	0	13	0	12	3
6:45 PM	to 7:00 PM	10	116	0	0	0	0	0	0	0	139	13	0	10	0	2	1
PEAK HOURS		Southbound				Westbound				Northbound				Eastbound			
Direction:		Fox Hall Rd.				No Approach				Fox Hall Rd.				White Haven Pky.			
Roadway:		Fox Hall Rd.				No Approach				Fox Hall Rd.				White Haven Pky.			
Movement:		Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
AM INTERSECTION PEAK HOUR		224	588	0	0	0	0	0	3	0	482	84	1	180	0	156	8
PM INTERSECTION PEAK HOUR		70	486	0	3	0	0	0	1	0	575	89	0	41	0	73	2
AM SYSTEM PEAK HOUR		224	588	0	0	0	0	0	3	0	482	84	1	180	0	156	8
PM SYSTEM PEAK HOUR		70	486	0	3	0	0	0	1	0	575	89	0	41	0	73	2
PEAK HOUR FACTORS		Southbound				Westbound				Northbound				Eastbound			
		Fox Hall Rd.				No Approach				Fox Hall Rd.				White Haven Pky.			
AM Peak Hour		Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach
AM PEAK HOUR		0.71	0.96	0.00	0.91	0.00	0.00	0.00	#DIV/0!	0.00	0.95	0.95	0.97	0.71	0.00	0.87	0.88
PM Peak Hour		Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach
PM PEAK HOUR		0.83	0.86	0.00	0.87	0.00	0.00	0.00	#DIV/0!	0.00	0.83	0.64	0.80	0.85	0.00	0.65	0.73
Overall AM PEAK HOUR FACTOR						= 0.93				Overall PM PEAK HOUR FACTOR				= 0.91			
AM Period Intersection Volume:		3546				PM Period Intersection Volume:				3659							

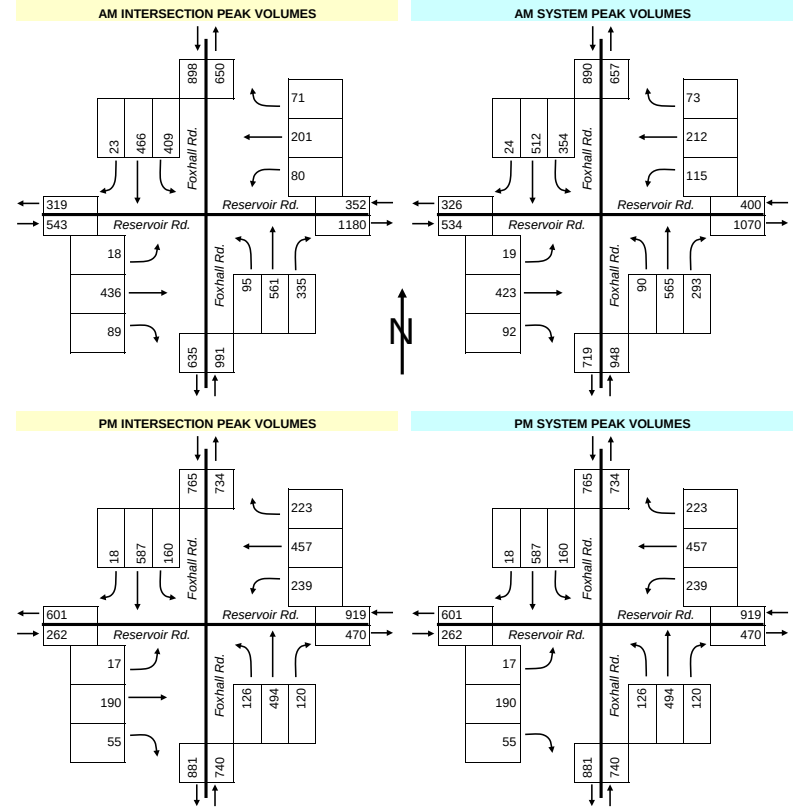
Date of Counts: Tuesday, April 24, 2012
 AM Weather Conditions: Clear PM Weather Conditions: Clear



Project Name : The Fields School
 Project # : 0
 Location : DC
 Data Source: Gorove/Slade Associates, Inc.

Intersection:		Foxhall Road at Reservoir Road and Salem Lane(Salem Lane data on Tab 2)															
AM PEAK		Southbound				Westbound				Northbound				Eastbound			
Direction:		Foxhall Rd.				Reservoir Rd.				Foxhall Rd.				Reservoir Rd.			
Roadway:		Foxhall Rd.				Reservoir Rd.				Foxhall Rd.				Reservoir Rd.			
Movement:		Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
6:00 AM	to 6:15 AM	1	27	11	0	2	9	8	0	42	53	5	0	2	49	2	0
6:15 AM	to 6:30 AM	0	22	14	0	5	12	13	0	56	71	14	0	5	60	0	2
6:30 AM	to 6:45 AM	1	29	10	0	3	11	18	0	74	87	16	0	0	66	1	0
6:45 AM	to 7:00 AM	2	49	21	0	6	11	14	1	89	109	7	0	5	69	2	1
7:00 AM	to 7:15 AM	3	70	20	0	10	19	17	0	66	121	8	0	6	72	2	0
7:15 AM	to 7:30 AM	3	93	42	0	11	43	22	0	59	140	4	0	9	92	5	2
7:30 AM	to 7:45 AM	5	122	53	0	12	65	45	0	56	152	12	0	8	110	3	2
7:45 AM	to 8:00 AM	3	138	79	0	31	42	32	0	74	146	19	0	23	84	3	22
8:00 AM	to 8:15 AM	5	154	114	0	20	69	23	0	66	142	40	1	40	121	5	18
8:15 AM	to 8:30 AM	11	98	108	0	10	36	15	0	97	125	19	7	21	108	8	13
8:30 AM	to 8:45 AM	4	76	108	0	10	54	10	0	98	148	17	1	5	123	2	5
8:45 AM	to 9:00 AM	5	86	131	0	9	30	16	0	91	126	9	0	10	75	2	0
PM PEAK		Southbound				Westbound				Northbound				Eastbound			
Direction:		Foxhall Rd.				Reservoir Rd.				Foxhall Rd.				Reservoir Rd.			
Roadway:		Foxhall Rd.				Reservoir Rd.				Foxhall Rd.				Reservoir Rd.			
Movement:		Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
4:00 PM	to 4:15 PM	5	114	32	0	37	93	50	0	25	98	21	0	14	51	6	0
4:15 PM	to 4:30 PM	2	135	30	0	32	75	64	0	18	105	13	0	12	35	2	0
4:30 PM	to 4:45 PM	4	107	38	0	22	95	61	0	35	91	21	0	5	36	3	0
4:45 PM	to 5:00 PM	2	120	42	0	26	83	57	0	36	106	26	0	7	54	4	0
5:00 PM	to 5:15 PM	5	161	55	0	37	97	60	0	32	113	24	0	15	44	3	0
5:15 PM	to 5:30 PM	3	137	47	0	42	124	72	0	27	115	37	0	9	47	6	0
5:30 PM	to 5:45 PM	5	154	33	0	68	122	58	0	28	140	38	1	17	55	6	0
5:45 PM	to 6:00 PM	5	135	25	0	76	114	49	0	33	126	27	0	14	44	2	0
6:00 PM	to 6:15 PM	4	127	35	0	53	101	54	0	40	104	27	0	15	48	7	0
6:15 PM	to 6:30 PM	5	144	41	0	61	107	50	0	35	110	23	0	11	43	2	0
6:30 PM	to 6:45 PM	1	140	49	0	51	102	34	0	49	109	30	0	8	44	7	0
6:45 PM	to 7:00 PM	1	131	34	0	55	98	32	0	37	92	21	0	9	38	4	0
PEAK HOURS		Southbound				Westbound				Northbound				Eastbound			
Direction:		Foxhall Rd.				Reservoir Rd.				Foxhall Rd.				Reservoir Rd.			
Roadway:		Foxhall Rd.				Reservoir Rd.				Foxhall Rd.				Reservoir Rd.			
Movement:		Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
AM INTERSECTION PEAK HOUR		23	466	409	0	71	201	80	0	335	561	95	9	89	436	18	58
PM INTERSECTION PEAK HOUR		18	587	160	0	223	457	239	0	120	494	126	1	55	190	17	0
AM SYSTEM PEAK HOUR		24	512	354	0	73	212	115	0	293	565	90	8	92	423	19	55
PM SYSTEM PEAK HOUR		18	587	160	0	223	457	239	0	120	494	126	1	55	190	17	0
PEAK HOUR FACTORS		Southbound				Westbound				Northbound				Eastbound			
		Foxhall Rd.				Reservoir Rd.				Foxhall Rd.				Reservoir Rd.			
		Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach
AM PEAK HOUR		0.55	0.83	0.78	0.82	0.59	0.77	0.64	0.82	0.76	0.93	0.56	0.96	0.58	0.87	0.59	0.80
PM PEAK HOUR		0.90	0.91	0.73	0.87	0.73	0.92	0.83	0.93	0.91	0.88	0.83	0.90	0.81	0.86	0.71	0.84
Overall AM PEAK HOUR FACTOR						= 0.87				Overall PM PEAK HOUR FACTOR				= 0.93			
AM Period Intersection Volume:		6137				PM Period Intersection Volume:				7259							

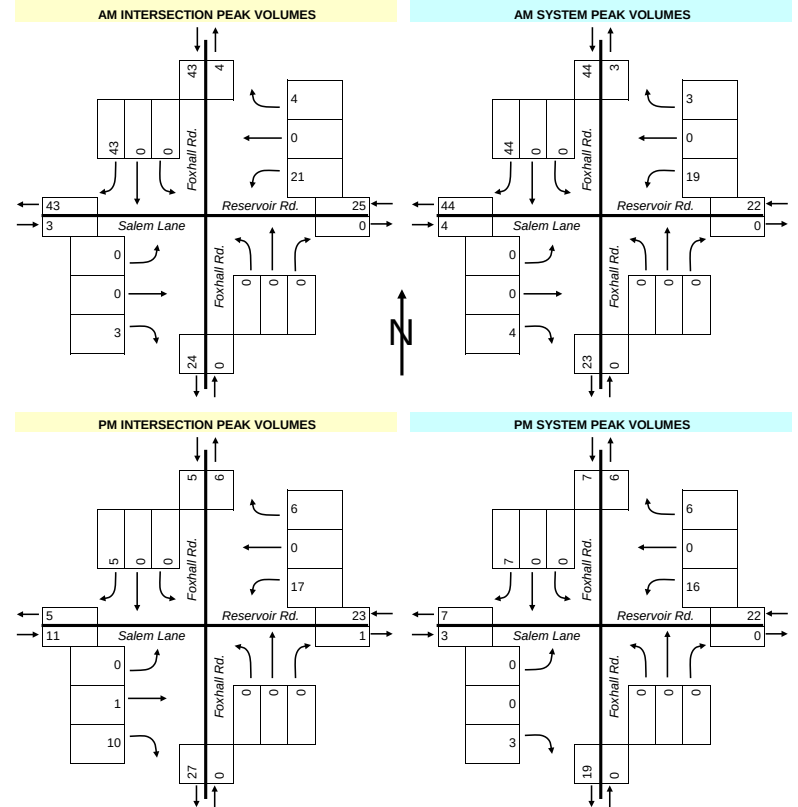
Date of Counts: Tuesday, April 24, 2012
 AM Weather Conditions: Clear PM Weather Conditions: Clear



Project Name : The Fields School
 Project # : 0
 Location : DC
 Data Source: Gorove/Slade Associates, Inc.

Intersection:		Salem Lane at Foxhall Road																			
AM PEAK		Southbound								Northbound				Eastbound							
		Direction:																			
		Roadway:				Reservoir Rd.				Foxhall Rd.				Salem Lane							
Movement:		Right	Thru	Left	Peds	From EB	From WB	Right	Thru	Left	Bikes	Right	Thru	Left	Hard Left						
6:00 AM	to 6:15 AM	1			0	0	0	0	0	0	0	0	0	0	0						
6:15 AM	to 6:30 AM	1			1	2	0	0	0	0	0	1	0	0	0						
6:30 AM	to 6:45 AM	1			2	0	0	0	0	0	1	0	0	0	0						
6:45 AM	to 7:00 AM	0			3	0	0	0	0	0	0	0	0	0	0						
7:00 AM	to 7:15 AM	0			0	0	0	0	0	0	0	0	0	0	0						
7:15 AM	to 7:30 AM	0			1	1	3	0	0	0	0	0	0	0	0						
7:30 AM	to 7:45 AM	11			6	1	3	0	0	0	0	1	0	0	0						
7:45 AM	to 8:00 AM	17			1	1	9	0	0	0	0	1	0	0	0						
8:00 AM	to 8:15 AM	15			1	1	6	0	0	0	1	1	0	0	0						
8:15 AM	to 8:30 AM	1			4	0	1	0	0	0	0	1	0	0	0						
8:30 AM	to 8:45 AM	0			2	0	0	0	0	0	0	1	0	0	0						
8:45 AM	to 9:00 AM	7			2	2	2	0	0	0	0	0	0	0	0						
PM PEAK		Southbound				Westbound				Northbound				Eastbound							
		Direction:																			
		Roadway:				Reservoir Rd.				Foxhall Rd.				Salem Lane							
Movement:		Right	Thru	Left	Peds	From EB	From WB	Right	Thru	Left	Bikes	Right	Thru	Left	Hard Left						
4:00 PM	to 4:15 PM	2			1	1	2	0	0	0	0	4	1	0	0						
4:15 PM	to 4:30 PM	1			2	2	3	0	0	0	0	2	0	0	0						
4:30 PM	to 4:45 PM	2			1	0	3	0	0	1	0	2	0	0	0						
4:45 PM	to 5:00 PM	0			3	0	3	0	0	0	0	1	0	0	0						
5:00 PM	to 5:15 PM	2			1	1	3	0	0	0	0	1	0	0	0						
5:15 PM	to 5:30 PM	2			0	1	6	0	0	0	0	0	0	0	0						
5:30 PM	to 5:45 PM	2			3	3	5	0	0	0	0	0	0	0	0						
5:45 PM	to 6:00 PM	1			2	1	2	0	0	0	0	2	0	0	0						
6:00 PM	to 6:15 PM	1			5	2	1	0	0	0	0	6	1	0	0						
6:15 PM	to 6:30 PM	1			3	0	9	0	0	0	0	2	0	0	0						
6:30 PM	to 6:45 PM	4			2	2	2	0	0	0	0	0	0	0	0						
6:45 PM	to 7:00 PM	2			0	0	2	0	0	0	2	1	0	0	0						
PEAK HOURS		Southbound				Westbound				Northbound				Eastbound							
		Foxhall Rd.				Reservoir Rd.				Foxhall Rd.				Salem Lane							
Direction:		Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds				
Roadway:																					
Movement:																					
AM INTERSECTION PEAK HOUR		7:15 AM	to 8:15 AM	43	0	0	9	4	0	21	0	0	0	0	1	3	0	0	0		
PM INTERSECTION PEAK HOUR		5:30 PM	to 6:30 PM	5	0	0	13	6	0	17	0	0	0	0	0	10	1	0	0		
AM SYSTEM PEAK HOUR		7:30 AM	to 8:30 AM	44	0	0	12	3	0	19	0	0	0	0	1	4	0	0	0		
PM SYSTEM PEAK HOUR		5:00 PM	to 6:00 PM	7	0	0	6	6	0	16	0	0	0	0	0	3	0	0	0		
PEAK HOUR FACTORS		Southbound				Westbound				Northbound				Eastbound							
		Foxhall Rd.				Reservoir Rd.				Foxhall Rd.				Salem Lane							
AM Peak Hour		Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach				
AM PEAK HOUR		0.65	0.00	0.00	0.65	0.75	0.00	0.53	0.55	0.00	0.00	0.00	#DIV/0!	1.00	0.00	0.00	1.00				
PM Peak Hour		Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach				
PM PEAK HOUR		0.88	0.00	0.00	0.88	0.50	0.00	0.67	0.69	0.00	0.00	0.00	#DIV/0!	0.38	0.00	0.00	0.38				
Overall AM PEAK HOUR FACTOR					=	0.63					Overall PM PEAK HOUR FACTOR					=	0.80				
AM Period Intersection Volume:					92					PM Period Intersection Volume:					98						

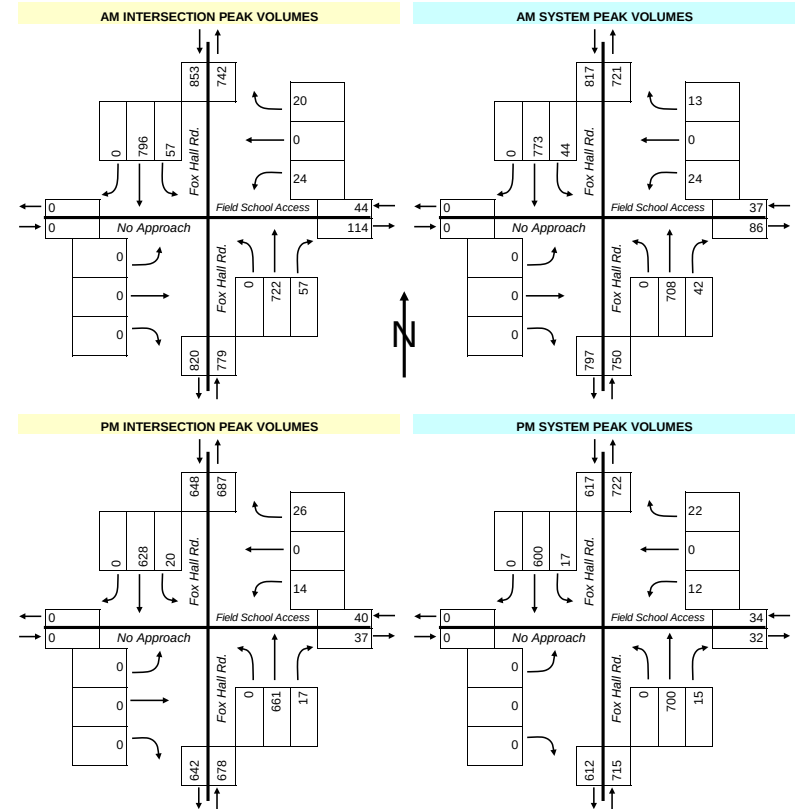
Date of Counts: Tuesday, April 24, 2012
 AM Weather Conditions: Clear PM Weather Conditions: Clear



Project Name : The Fields School
 Project # : 0
 Location : DC
 Data Source: Gorove/Slade Associates, Inc.

Intersection:		Field School Access at Fox Hall Road																
AM PEAK		Southbound				Westbound				Northbound				Eastbound				
		Fox Hall Rd.				Field School Access				Fox Hall Rd.				No Approach				
		Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
6:00 AM	to 6:15 AM	0	15	0	0	0	0	0	0	0	39	0	0	0	0	0	0	0
6:15 AM	to 6:30 AM	0	18	0	0	0	0	0	0	0	47	0	0	0	0	0	0	0
6:30 AM	to 6:45 AM	0	38	1	0	0	0	0	2	0	64	0	0	0	0	0	0	0
6:45 AM	to 7:00 AM	0	63	1	0	0	1	1	1	0	108	0	0	0	0	0	0	0
7:00 AM	to 7:15 AM	0	74	1	0	0	0	0	0	0	112	0	0	0	0	0	0	0
7:15 AM	to 7:30 AM	0	113	6	0	0	0	0	1	1	138	0	0	0	0	0	0	2
7:30 AM	to 7:45 AM	0	141	11	0	0	0	2	0	4	162	0	0	0	0	0	0	0
7:45 AM	to 8:00 AM	0	177	5	0	2	0	5	1	8	211	0	0	0	0	0	0	0
8:00 AM	to 8:15 AM	0	238	20	0	9	0	13	0	23	163	0	0	0	0	0	0	1
8:15 AM	to 8:30 AM	0	217	8	0	2	0	4	0	7	172	0	0	0	0	0	0	0
8:30 AM	to 8:45 AM	0	164	24	0	7	0	2	0	19	176	0	0	0	0	0	0	0
8:45 AM	to 9:00 AM	0	126	27	0	12	0	28	0	22	137	0	0	0	0	0	0	1
PM PEAK		Southbound				Westbound				Northbound				Eastbound				
		Fox Hall Rd.				Field School Access				Fox Hall Rd.				No Approach				
		Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
4:00 PM	to 4:15 PM	0	139	9	0	6	0	6	0	1	130	0	0	0	0	0	0	0
4:15 PM	to 4:30 PM	0	149	3	0	11	0	11	1	5	130	0	0	0	0	0	0	1
4:30 PM	to 4:45 PM	0	129	4	0	7	0	14	2	5	133	0	0	0	0	0	0	1
4:45 PM	to 5:00 PM	0	167	6	0	5	0	4	0	5	140	0	0	0	0	0	0	0
5:00 PM	to 5:15 PM	0	167	9	0	14	0	7	3	8	175	0	0	0	0	0	0	2
5:15 PM	to 5:30 PM	0	148	5	0	5	0	2	0	2	159	0	0	0	0	0	0	1
5:30 PM	to 5:45 PM	0	146	0	0	2	0	1	0	2	187	0	0	0	0	0	0	2
5:45 PM	to 6:00 PM	0	139	3	0	1	0	2	0	3	179	0	0	0	0	0	0	1
6:00 PM	to 6:15 PM	0	153	6	0	8	0	10	0	2	153	0	0	0	0	0	0	1
6:15 PM	to 6:30 PM	0	106	4	1	5	0	4	2	6	163	0	0	1	0	0	0	1
6:30 PM	to 6:45 PM	0	155	6	0	4	0	3	1	3	156	0	0	0	0	0	0	0
6:45 PM	to 7:00 PM	0	136	3	0	3	0	0	3	4	148	0	0	0	0	0	0	0
PEAK HOURS		Southbound				Westbound				Northbound				Eastbound				
		Fox Hall Rd.				Field School Access				Fox Hall Rd.				No Approach				
		Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
AM INTERSECTION PEAK HOUR		7:45 AM	to 8:45 AM	0	796	57	0	20	0	24	1	57	722	0	0	0	0	1
PM INTERSECTION PEAK HOUR		4:45 PM	to 5:45 PM	0	628	20	0	26	0	14	3	17	661	0	0	0	0	5
AM SYSTEM PEAK HOUR		7:30 AM	to 8:30 AM	0	773	44	0	13	0	24	1	42	708	0	0	0	0	1
PM SYSTEM PEAK HOUR		5:00 PM	to 6:00 PM	0	600	17	0	22	0	12	3	15	700	0	0	0	0	6
PEAK HOUR FACTORS		Southbound				Westbound				Northbound				Eastbound				
		Fox Hall Rd.				Field School Access				Fox Hall Rd.				No Approach				
		Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach	
AM Peak Hour		0.00	0.81	0.55	0.79	0.36	0.00	0.46	0.42	0.46	0.84	0.00	0.86	0.00	0.00	0.00	0.00	#DIV/0!
PM Peak Hour		0.00	0.90	0.47	0.88	0.39	0.00	0.43	0.40	0.47	0.94	0.00	0.95	0.00	0.00	0.00	0.00	#DIV/0!
Overall AM PEAK HOUR FACTOR						= 0.86				Overall PM PEAK HOUR FACTOR				= 0.90				
AM Period Intersection Volume:		3189				PM Period Intersection Volume:				3827								

Date of Counts: Tuesday, April 24, 2012
 AM Weather Conditions: Clear PM Weather Conditions: Clear

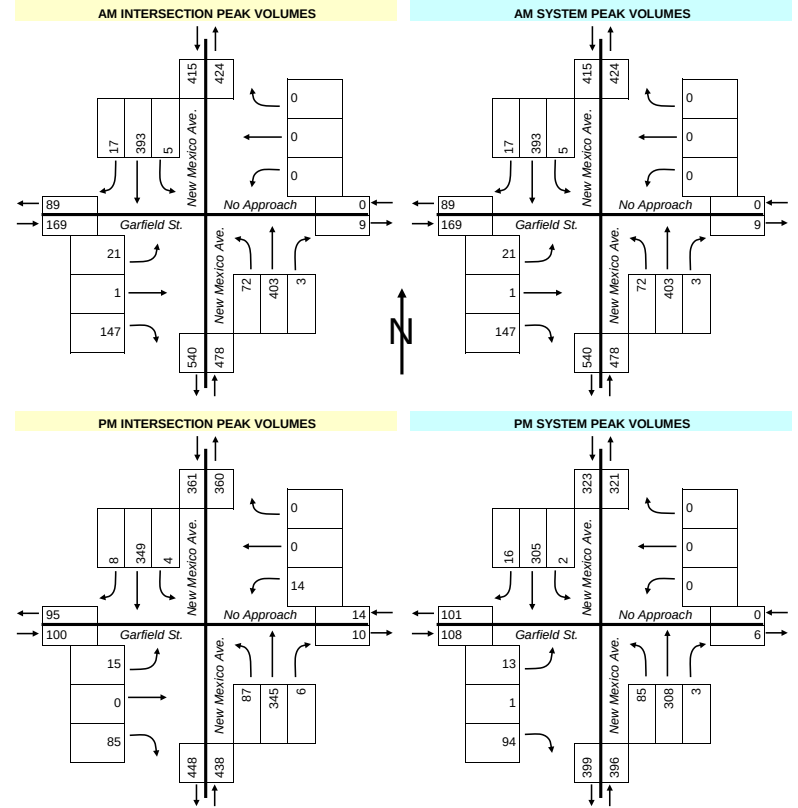


Project Name :
Project # :
Location :
Data Source:

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Gorove/Slade Associates, Inc.

Intersection:				New Mexico Avenue at Garfield Street Northwest															
AM PEAK				Southbound				Westbound				Northbound				Eastbound			
				New Mexico Ave.				No Approach				New Mexico Ave.				Garfield St.			
				Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
6:00 AM	to	6:15 AM		1	9	0	0	0	0	0	2	1	13	1	8	3	0	3	1
6:15 AM	to	6:30 AM		0	10	0	4	0	0	0	1	0	21	6	5	2	0	1	1
6:30 AM	to	6:45 AM		1	23	0	2	0	0	0	0	0	27	2	6	4	0	2	0
6:45 AM	to	7:00 AM		2	25	0	4	0	0	0	2	0	42	11	6	13	0	2	0
7:00 AM	to	7:15 AM		1	34	1	1	0	0	0	0	0	51	8	5	20	0	5	4
7:15 AM	to	7:30 AM		4	43	1	4	0	0	0	1	0	81	14	3	20	0	6	3
7:30 AM	to	7:45 AM		7	74	1	2	0	0	0	3	1	81	32	5	54	0	3	0
7:45 AM	to	8:00 AM		3	111	2	1	0	0	0	0	0	100	26	3	35	1	6	0
8:00 AM	to	8:15 AM		5	97	0	2	0	0	0	0	2	100	14	0	40	0	4	0
8:15 AM	to	8:30 AM		2	86	0	7	0	0	0	2	1	92	14	6	33	0	6	0
8:30 AM	to	8:45 AM		7	99	3	8	0	0	0	3	0	111	18	3	39	0	5	0
8:45 AM	to	9:00 AM		3	91	2	7	0	0	0	1	1	79	15	4	40	0	3	3
PM PEAK				Southbound				Westbound				Northbound				Eastbound			
				New Mexico Ave.				No Approach				New Mexico Ave.				Garfield St.			
				Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
4:00 PM	to	4:15 PM		5	65	0	1	0	0	0	0	0	74	30	4	18	0	6	0
4:15 PM	to	4:30 PM		4	70	1	3	0	0	0	0	2	78	17	6	23	0	2	0
4:30 PM	to	4:45 PM		3	73	0	2	0	0	0	0	1	67	22	2	20	0	6	1
4:45 PM	to	5:00 PM		4	73	1	2	0	0	0	2	0	76	26	7	27	0	3	0
5:00 PM	to	5:15 PM		5	89	0	4	0	0	0	2	0	87	20	4	24	1	2	1
5:15 PM	to	5:30 PM		2	87	3	12	0	0	0	0	0	79	30	4	25	0	4	0
5:30 PM	to	5:45 PM		3	60	0	6	0	0	0	3	1	86	29	8	31	0	6	0
5:45 PM	to	6:00 PM		0	97	3	7	0	0	0	1	3	82	19	7	22	0	4	0
6:00 PM	to	6:15 PM		4	91	1	9	0	0	2	2	2	92	20	10	16	0	3	0
6:15 PM	to	6:30 PM		1	101	0	2	0	0	12	1	0	85	19	13	16	0	2	3
6:30 PM	to	6:45 PM		3	95	0	5	0	1	1	2	1	80	13	11	18	0	2	9
6:45 PM	to	7:00 PM																	
PEAK HOURS				Southbound				Westbound				Northbound				Eastbound			
				New Mexico Ave.				No Approach				New Mexico Ave.				Garfield St.			
Direction: Roadway: Movement:				Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
AM INTERSECTION PEAK HOUR																			
7:45 AM	to	8:45 AM		17	393	5	18	0	0	0	5	3	403	72	12	147	1	21	0
PM INTERSECTION PEAK HOUR																			
5:30 PM	to	6:30 PM		8	349	4	24	0	0	14	7	6	345	87	38	85	0	15	3
AM SYSTEM PEAK HOUR																			
7:45 AM	to	8:45 AM		17	393	5	18	0	0	0	5	3	403	72	12	147	1	21	0
PM SYSTEM PEAK HOUR																			
4:15 PM	to	5:15 PM		16	305	2	11	0	0	0	4	3	308	85	19	94	1	13	2
PEAK HOUR FACTORS				Southbound				Westbound				Northbound				Eastbound			
				New Mexico Ave.				No Approach				New Mexico Ave.				Garfield St.			
AM Peak Hour				Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach
AM PEAK HOUR				0.61	0.89	0.42	0.89	0.00	0.00	0.00	#DIV/0!	0.38	0.91	0.69	0.93	0.92	0.25	0.88	0.96
				Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach
PM PEAK HOUR				0.80	0.86	0.50	0.86	0.00	0.00	0.00	#DIV/0!	0.38	0.89	0.82	0.93	0.87	0.25	0.54	0.90
Overall AM PEAK HOUR FACTOR = 0.93												Overall PM PEAK HOUR FACTOR = 0.91							
AM Period Intersection Volume: 2063								PM Period Intersection Volume: 2382											

Date of Counts: Thursday, May 24, 2012
AM Weather Conditions: Clear PM Weather Conditions: Clear

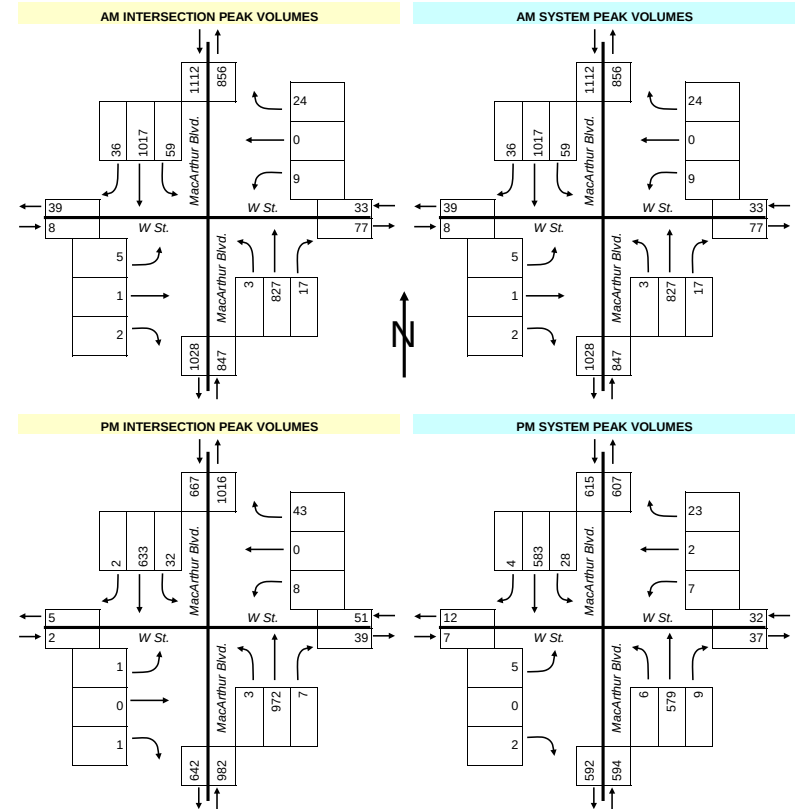


Project Name :
Project # :
Location :
Data Source:

0
0
0
Gorove/Slade Associates, Inc.

Intersection:		W Street at MacArthur Boulevard Northwest															
AM PEAK		Southbound				Westbound				Northbound				Eastbound			
Direction:		MacArthur Blvd.				W St.				MacArthur Blvd.				W St.			
Roadway:		MacArthur Blvd.				W St.				MacArthur Blvd.				W St.			
Movement:		Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
6:00 AM	to 6:15 AM	0	17	0	2	1	0	0	0	0	36	0	2	0	0	0	0
6:15 AM	to 6:30 AM	1	33	0	4	0	0	0	1	1	60	0	3	0	0	0	0
6:30 AM	to 6:45 AM	0	55	1	2	1	0	0	2	1	74	0	3	0	0	1	0
6:45 AM	to 7:00 AM	0	50	1	2	0	0	0	0	0	103	0	12	0	0	0	0
7:00 AM	to 7:15 AM	1	109	1	1	3	0	0	0	0	123	0	10	0	0	0	0
7:15 AM	to 7:30 AM	1	161	5	2	0	0	2	1	2	123	1	1	1	0	0	0
7:30 AM	to 7:45 AM	0	240	10	1	3	0	0	0	3	173	1	2	1	0	0	0
7:45 AM	to 8:00 AM	11	307	17	1	1	0	2	0	3	171	2	3	1	1	0	0
8:00 AM	to 8:15 AM	25	229	12	3	5	0	2	1	3	205	1	4	1	0	1	0
8:15 AM	to 8:30 AM	0	257	21	2	2	0	3	0	5	212	0	9	0	0	1	0
8:30 AM	to 8:45 AM	0	224	9	4	16	0	2	1	6	239	0	0	0	0	3	0
8:45 AM	to 9:00 AM	1	211	12	3	7	0	0	0	6	198	0	7	1	0	0	0
PM PEAK		Southbound				Westbound				Northbound				Eastbound			
Direction:		MacArthur Blvd.				W St.				MacArthur Blvd.				W St.			
Roadway:		MacArthur Blvd.				W St.				MacArthur Blvd.				W St.			
Movement:		Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
4:00 PM	to 4:15 PM	0	155	4	3	12	0	5	2	3	137	1	3	0	0	1	0
4:15 PM	to 4:30 PM	2	165	10	3	10	0	5	3	1	120	0	5	0	0	2	0
4:30 PM	to 4:45 PM	1	138	8	3	4	0	0	7	2	155	2	0	0	0	1	0
4:45 PM	to 5:00 PM	1	134	8	8	3	1	1	3	4	157	1	2	0	0	2	1
5:00 PM	to 5:15 PM	0	146	2	0	6	1	1	4	2	147	3	11	2	0	0	0
5:15 PM	to 5:30 PM	0	181	9	4	11	0	4	5	3	181	2	6	0	0	0	0
5:30 PM	to 5:45 PM	1	168	7	2	8	0	0	2	3	214	0	5	0	0	0	0
5:45 PM	to 6:00 PM	1	146	4	2	15	0	0	2	1	218	0	10	0	0	0	0
6:00 PM	to 6:15 PM	0	150	8	0	7	0	4	4	4	273	0	4	0	0	1	0
6:15 PM	to 6:30 PM	0	175	10	4	9	0	3	4	0	245	1	5	0	0	0	1
6:30 PM	to 6:45 PM	1	162	10	1	12	0	1	5	2	236	2	11	1	0	0	0
6:45 PM	to 7:00 PM	0	181	0	3	10	0	4	3	0	253	0	7	0	0	0	0
PEAK HOURS		Southbound MacArthur Blvd.				Westbound W St.				Northbound MacArthur Blvd.				Eastbound W St.			
Direction:		MacArthur Blvd.				W St.				MacArthur Blvd.				W St.			
Roadway:		MacArthur Blvd.				W St.				MacArthur Blvd.				W St.			
Movement:		Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
AM INTERSECTION PEAK HOUR		36	1017	59	10	24	0	9	2	17	827	3	16	2	1	5	0
PM INTERSECTION PEAK HOUR		2	633	32	7	43	0	8	15	7	972	3	30	1	0	1	1
AM SYSTEM PEAK HOUR		36	1017	59	10	24	0	9	2	17	827	3	16	2	1	5	0
PM SYSTEM PEAK HOUR		4	583	28	14	23	2	7	17	9	579	6	18	2	0	5	1
PEAK HOUR FACTORS		Southbound MacArthur Blvd.				Westbound W St.				Northbound MacArthur Blvd.				Eastbound W St.			
Direction:		MacArthur Blvd.				W St.				MacArthur Blvd.				W St.			
Roadway:		MacArthur Blvd.				W St.				MacArthur Blvd.				W St.			
Movement:		Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach
AM PEAK HOUR		0.36	0.83	0.70	0.83	0.38	0.00	0.75	0.46	0.71	0.87	0.38	0.86	0.50	0.25	0.42	0.67
PM PEAK HOUR		0.50	0.88	0.70	0.87	0.58	0.50	0.35	0.53	0.56	0.92	0.50	0.92	0.25	0.00	0.63	0.88
Overall AM PEAK HOUR FACTOR						= 0.97								Overall PM PEAK HOUR FACTOR = 0.99			
AM Period Intersection Volume:		3836				PM Period Intersection Volume:				4508							

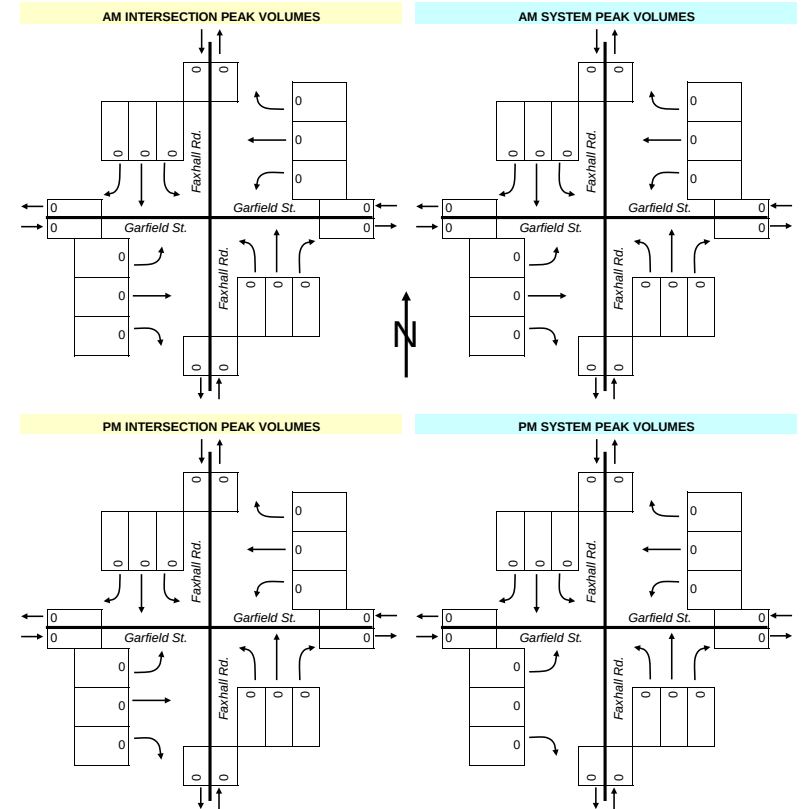
Date of Counts: Thursday, May 24, 2012
AM Weather Conditions: Clear PM Weather Conditions: Clear



Project Name :
 Project # :
 Location :
 Data Source: Gorove/Slade Associates, Inc.

Intersection: Foxhall Road at Garfield Street Northwest													
AM PEAK		Direction:				Southbound				Westbound			
		Roadway:				Faxhall Rd.				Garfield St.			
		Movement:				Right	Thru	Left	Peds	Right	Thru	Left	Peds
6:00 AM	to 6:15 AM												
6:15 AM	to 6:30 AM												
6:30 AM	to 6:45 AM												
6:45 AM	to 7:00 AM												
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												
8:00 AM	to 8:15 AM												
8:15 AM	to 8:30 AM												
8:30 AM	to 8:45 AM												
8:45 AM	to 9:00 AM												
PM PEAK		Direction:				Southbound				Westbound			
		Roadway:				Faxhall Rd.				Garfield St.			
		Movement:				Right	Thru	Left	Peds	Right	Thru	Left	Peds
2:30 PM	to 2:45 PM					0	0	0	0	0	0	0	0
2:45 PM	to 3:00 PM					0	0	0	0	0	0	0	0
3:00 PM	to 3:15 PM					0	0	0	0	0	0	0	0
3:15 PM	to 3:30 PM					0	0	0	0	0	0	0	0
3:30 PM	to 3:45 PM					0	0	0	0	0	0	0	0
3:45 PM	to 4:00 PM					0	0	0	0	0	0	0	0
4:00 PM	to 4:15 PM					0	0	0	0	0	0	0	0
4:15 PM	to 4:30 PM					0	0	0	0	0	0	0	0
4:30 PM	to 4:45 PM					0	0	0	0	0	0	0	0
4:45 PM	to 5:00 PM					0	0	0	0	0	0	0	0
5:00 PM	to 5:15 PM					0	0	0	0	0	0	0	0
5:15 PM	to 5:30 PM					0	0	0	0	0	0	0	0
PEAK HOURS		Direction:				Southbound				Westbound			
		Roadway:				Faxhall Rd.				Garfield St.			
		Movement:				Right	Thru	Left	Peds	Right	Thru	Left	Peds
AM INTERSECTION PEAK HOUR		6:00 AM	to 7:00 AM	0	0	0	0	0	0	0	0	0	0
PM INTERSECTION PEAK HOUR		2:30 PM	to 3:30 PM	0	0	0	0	0	0	0	0	0	0
AM SYSTEM PEAK HOUR		7:45 AM	to 8:45 AM	0	0	0	0	0	0	0	0	0	0
PM SYSTEM PEAK HOUR		5:30 PM	to 6:30 PM	0	0	0	0	0	0	0	0	0	0
PEAK HOUR FACTORS		Southbound				Westbound				Northbound			
		Faxhall Rd.				Garfield St.				Faxhall Rd.			
		Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach
AM Peak Hour		0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!
AM PEAK HOUR		0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!
PM Peak Hour		0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!
PM PEAK HOUR		0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!
Overall AM PEAK HOUR FACTOR													
AM Period Intersection Volume:		0				0				0			
Overall PM PEAK HOUR FACTOR													
PM Period Intersection Volume:		0				0				0			

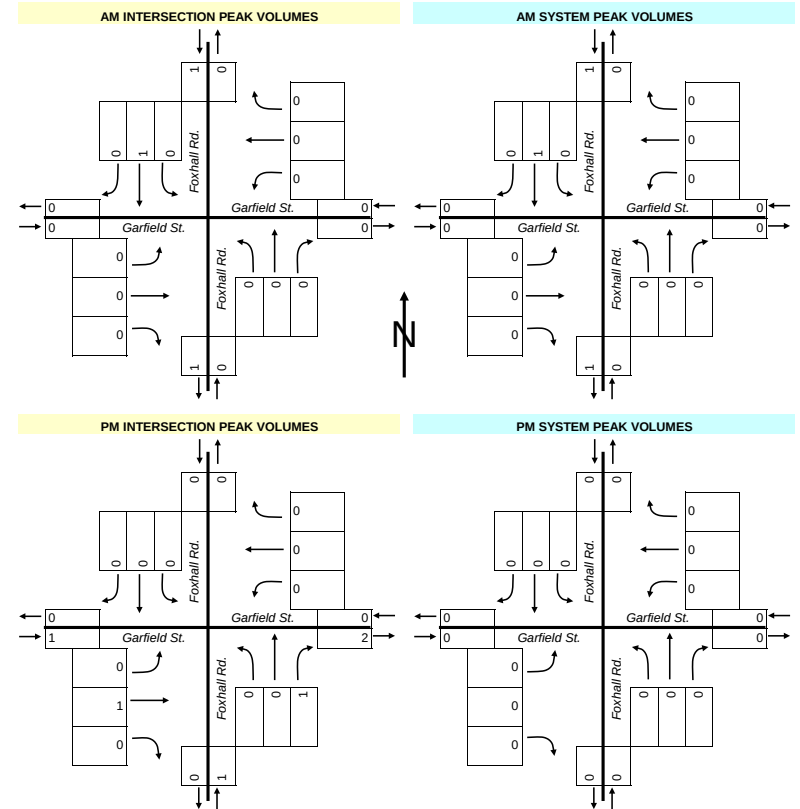
Date of Counts: Thursday, May 24, 2012
 AM Weather Conditions: Clear PM Weather Conditions: Clear



Project Name : The Fields School
 Project # : 0
 Location : DC
 Data Source: Gorove/Slade Associates, Inc.

Intersection:		Garfield Street at Foxhall Road																	
AM PEAK		Southbound				Westbound				Northbound				Eastbound					
		Foxhall Rd.				Garfield St.				Foxhall Rd.				Garfield St.					
		Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds		
6:00 AM	to 6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:15 AM	to 6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:30 AM	to 6:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:45 AM	to 7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 AM	to 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	to 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM	to 7:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	to 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 AM	to 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 AM	to 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	to 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM	to 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	
PM PEAK		Southbound				Westbound				Northbound				Eastbound					
		Foxhall Rd.				Garfield St.				Foxhall Rd.				Garfield St.					
		Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds		
4:00 PM	to 4:15 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	
4:15 PM	to 4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 PM	to 4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	
4:45 PM	to 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:00 PM	to 5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:15 PM	to 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:30 PM	to 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:45 PM	to 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:00 PM	to 6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:15 PM	to 6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	
6:30 PM	to 6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:45 PM	to 7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	
PEAK HOURS		Southbound				Westbound				Northbound				Eastbound					
		Foxhall Rd.				Garfield St.				Foxhall Rd.				Garfield St.					
		Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds		
AM INTERSECTION PEAK HOUR		6:00 AM	to 7:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM INTERSECTION PEAK HOUR		4:00 PM	to 5:00 PM	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	
AM SYSTEM PEAK HOUR		6:45 AM	to 7:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
PM SYSTEM PEAK HOUR		4:45 PM	to 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PEAK HOUR FACTORS		Southbound				Westbound				Northbound				Eastbound					
		Foxhall Rd.				Garfield St.				Foxhall Rd.				Garfield St.					
		Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach		
AM Peak Hour		0.00	0.25	0.00	0.25	0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!	#DIV/0!	
PM Peak Hour		0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!	#DIV/0!	
Overall AM PEAK HOUR FACTOR						= 0.25				Overall PM PEAK HOUR FACTOR				= #DIV/0!					
AM Period Intersection Volume:		3				PM Period Intersection Volume:				4									

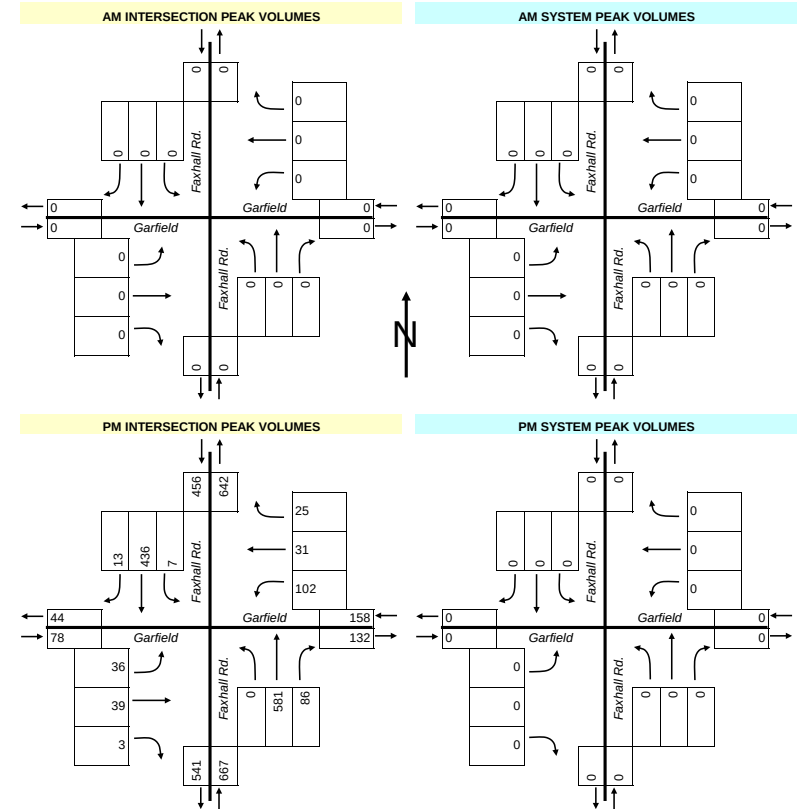
Date of Counts: Tuesday, April 24, 2012
 AM Weather Conditions: Clear PM Weather Conditions: Clear



Project Name :
 Project # :
 Location :
 Data Source: Gorove/Slade Associates, Inc.

Intersection: Foxhall Road at Garfield Street Northwest													
AM PEAK		Southbound				Westbound				Northbound			
		Faxhall Rd.				Garfield				Faxhall Rd.			
		Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
6:00 AM	to 6:15 AM												
6:15 AM	to 6:30 AM												
6:30 AM	to 6:45 AM												
6:45 AM	to 7:00 AM												
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												
8:00 AM	to 8:15 AM												
8:15 AM	to 8:30 AM												
8:30 AM	to 8:45 AM												
8:45 AM	to 9:00 AM												
PM PEAK		Southbound				Westbound				Northbound			
		Faxhall Rd.				Garfield				Faxhall Rd.			
		Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
2:30 PM	to 2:45 PM	3	89	1	0	2	2	17	0	6	98	0	1
2:45 PM	to 3:00 PM	0	117	0	0	6	8	34	0	8	94	0	0
3:00 PM	to 3:15 PM	3	122	2	0	5	9	30	0	19	176	0	0
3:15 PM	to 3:30 PM	3	104	1	0	5	7	18	0	24	143	0	0
3:30 PM	to 3:45 PM	4	109	2	0	10	7	30	0	28	130	0	2
3:45 PM	to 4:00 PM	3	101	2	0	5	8	24	1	15	132	0	0
4:00 PM	to 4:15 PM												
4:15 PM	to 4:30 PM												
4:30 PM	to 4:45 PM												
4:45 PM	to 5:00 PM												
5:00 PM	to 5:15 PM												
5:15 PM	to 5:30 PM												
PEAK HOURS		Southbound				Westbound				Northbound			
		Faxhall Rd.				Garfield				Faxhall Rd.			
		Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
AM INTERSECTION PEAK HOUR													
6:00 AM	to 7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
PM INTERSECTION PEAK HOUR													
3:00 PM	to 4:00 PM	13	436	7	0	25	31	102	1	86	581	0	2
AM SYSTEM PEAK HOUR													
7:45 AM	to 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
PM SYSTEM PEAK HOUR													
4:15 PM	to 5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HOUR FACTORS		Southbound				Westbound				Northbound			
		Faxhall Rd.				Garfield				Faxhall Rd.			
		Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach
AM Peak Hour													
AM PEAK HOUR		0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!
PM Peak Hour													
PM PEAK HOUR		0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!
Overall AM PEAK HOUR FACTOR						= #DIV/0!				Overall PM PEAK HOUR FACTOR = #DIV/0!			
AM Period Intersection Volume:		0				PM Period Intersection Volume: 1878							

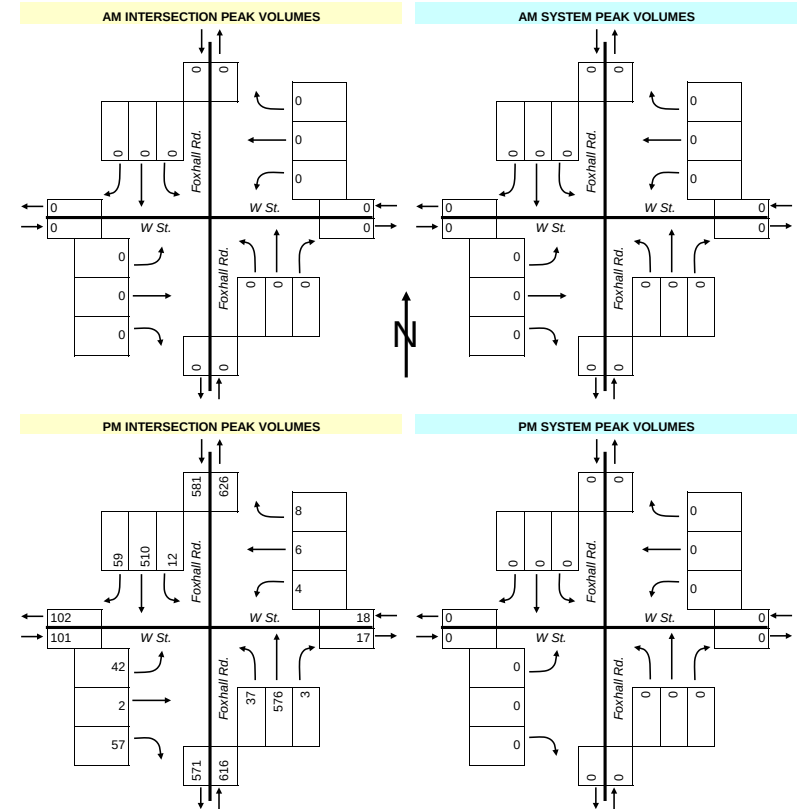
Date of Counts: Thursday, May 24, 2012
 AM Weather Conditions: Clear PM Weather Conditions: Clear



Project Name :
 Project # :
 Location :
 Data Source: Gorove/Slade Associates, Inc.

Intersection:		W Street at Foxhall Road Northwest																							
AM PEAK		Southbound				Westbound				Northbound				Eastbound											
		Foxhall Rd.				W St.				Foxhall Rd.				W St.											
		Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds								
6:00 AM	to 6:15 AM																								
6:15 AM	to 6:30 AM																								
6:30 AM	to 6:45 AM																								
6:45 AM	to 7:00 AM																								
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																								
8:00 AM	to 8:15 AM																								
8:15 AM	to 8:30 AM																								
8:30 AM	to 8:45 AM																								
8:45 AM	to 9:00 AM																								
PM PEAK		Southbound				Westbound				Northbound				Eastbound											
		Foxhall Rd.				W St.				Foxhall Rd.				W St.											
		Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds								
2:30 PM	to 2:45 PM	23	136	7	1	2	1	1	4	1	124	6	8	16	0	9	8								
2:45 PM	to 3:00 PM	18	140	2	0	3	0	0	2	2	148	14	11	23	1	13	6								
3:00 PM	to 3:15 PM	7	117	1	1	2	4	1	0	0	154	11	8	13	0	12	4								
3:15 PM	to 3:30 PM	11	117	2	0	1	1	2	0	0	150	6	10	5	1	8	5								
3:30 PM	to 3:45 PM	12	102	3	0	3	1	0	0	0	122	15	4	9	0	4	4								
3:45 PM	to 4:00 PM																								
4:00 PM	to 4:15 PM																								
4:15 PM	to 4:30 PM																								
4:30 PM	to 4:45 PM																								
4:45 PM	to 5:00 PM																								
5:00 PM	to 5:15 PM																								
5:15 PM	to 5:30 PM																								
PEAK HOURS		Southbound Foxhall Rd.				Westbound W St.				Northbound Foxhall Rd.				Eastbound W St.											
		Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds								
AM INTERSECTION PEAK HOUR		6:00 AM	to 7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
PM INTERSECTION PEAK HOUR		2:30 PM	to 3:30 PM	59	510	12	2	8	6	4	6	3	576	37	37	57	2	42	23						
AM SYSTEM PEAK HOUR		7:45 AM	to 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
PM SYSTEM PEAK HOUR		4:15 PM	to 5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
PEAK HOUR FACTORS		Southbound				Westbound				Northbound				Eastbound											
		Foxhall Rd.				W St.				Foxhall Rd.				W St.											
AM Peak Hour		Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach								
AM PEAK HOUR		0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!								
PM Peak Hour		Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach								
PM PEAK HOUR		0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!								
Overall AM PEAK HOUR FACTOR						=				#DIV/0!				Overall PM PEAK HOUR FACTOR				=				#DIV/0!			
AM Period Intersection Volume:		0				PM Period Intersection Volume:				1587															

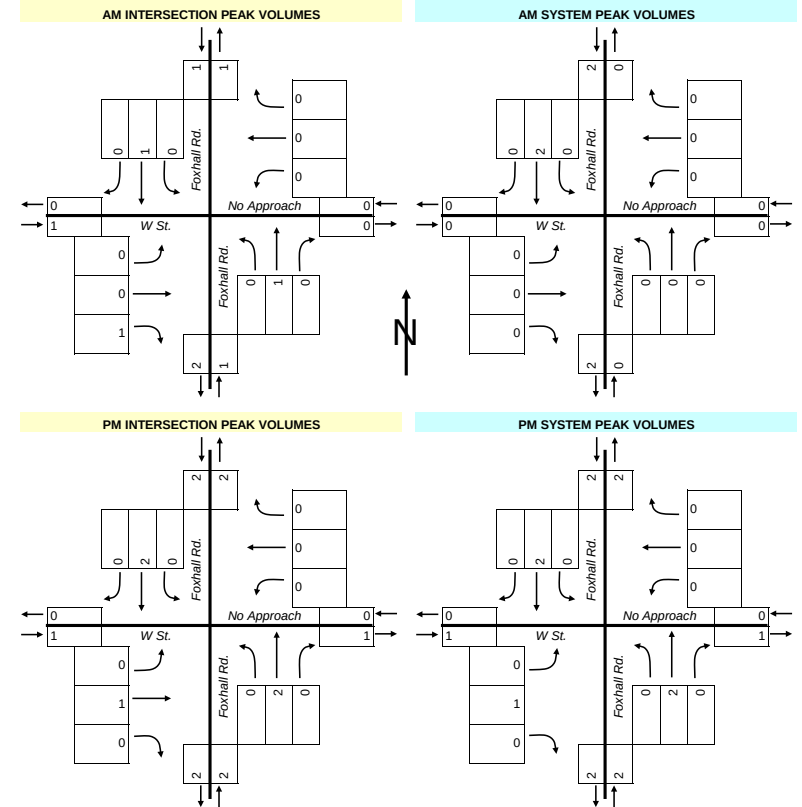
Date of Counts: Thursday, May 24, 2012
 AM Weather Conditions: Clear
 PM Weather Conditions: Clear



Project Name : The Fields School
 Project # : 0
 Location : DC
 Data Source: Gorove/Slade Associates, Inc.

Intersection: Foxhall Road at W Street Northwest													
AM PEAK		Direction:				Southbound				Westbound			
		Roadway:				Foxhall Rd.				No Approach			
		Movement:				Right	Thru	Left	Peds	Right	Thru	Left	Peds
6:00 AM	to 6:15 AM												
6:15 AM	to 6:30 AM												
6:30 AM	to 6:45 AM					1							
6:45 AM	to 7:00 AM					1							
7:00 AM	to 7:15 AM												
7:15 AM	to 7:30 AM												
7:30 AM	to 7:45 AM					1							
7:45 AM	to 8:00 AM												
8:00 AM	to 8:15 AM												
8:15 AM	to 8:30 AM											1	
8:30 AM	to 8:45 AM												
8:45 AM	to 9:00 AM												
PM PEAK		Direction:				Southbound				Westbound			
		Roadway:				Foxhall Rd.				No Approach			
		Movement:				Right	Thru	Left	Peds	Right	Thru	Left	Peds
4:00 PM	to 4:15 PM												
4:15 PM	to 4:30 PM					1	1						
4:30 PM	to 4:45 PM												
4:45 PM	to 5:00 PM												
5:00 PM	to 5:15 PM												
5:15 PM	to 5:30 PM												
5:30 PM	to 5:45 PM					2							
5:45 PM	to 6:00 PM												
6:00 PM	to 6:15 PM					1							
6:15 PM	to 6:30 PM												
6:30 PM	to 6:45 PM												
6:45 PM	to 7:00 PM												
PEAK HOURS		Direction:				Southbound				Westbound			
		Roadway:				Foxhall Rd.				No Approach			
		Movement:				Right	Thru	Left	Peds	Right	Thru	Left	Peds
AM INTERSECTION PEAK HOUR		7:30 AM	to 8:30 AM	0	1	0	0	0	0	0	0	0	0
PM INTERSECTION PEAK HOUR		4:45 PM	to 5:45 PM	0	2	0	0	0	0	0	0	0	0
AM SYSTEM PEAK HOUR		6:45 AM	to 7:45 AM	0	2	0	0	0	0	0	0	0	0
PM SYSTEM PEAK HOUR		4:45 PM	to 5:45 PM	0	2	0	0	0	0	0	0	0	0
PEAK HOUR FACTORS		Southbound				Westbound				Northbound			
		Foxhall Rd.				No Approach				Foxhall Rd.			
		Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach
AM Peak Hour		0.00	0.50	0.00	0.50	0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!
AM PEAK HOUR		0.00	0.50	0.00	0.50	0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!
PM Peak Hour		0.00	0.25	0.00	0.25	0.00	0.00	0.00	#DIV/0!	0.00	0.50	0.00	0.50
PM PEAK HOUR		0.00	0.25	0.00	0.25	0.00	0.00	0.00	#DIV/0!	0.00	0.50	0.00	0.50
Overall AM PEAK HOUR FACTOR						= 0.50				Overall PM PEAK HOUR FACTOR = 0.63			
AM Period Intersection Volume:		5				PM Period Intersection Volume:				11			

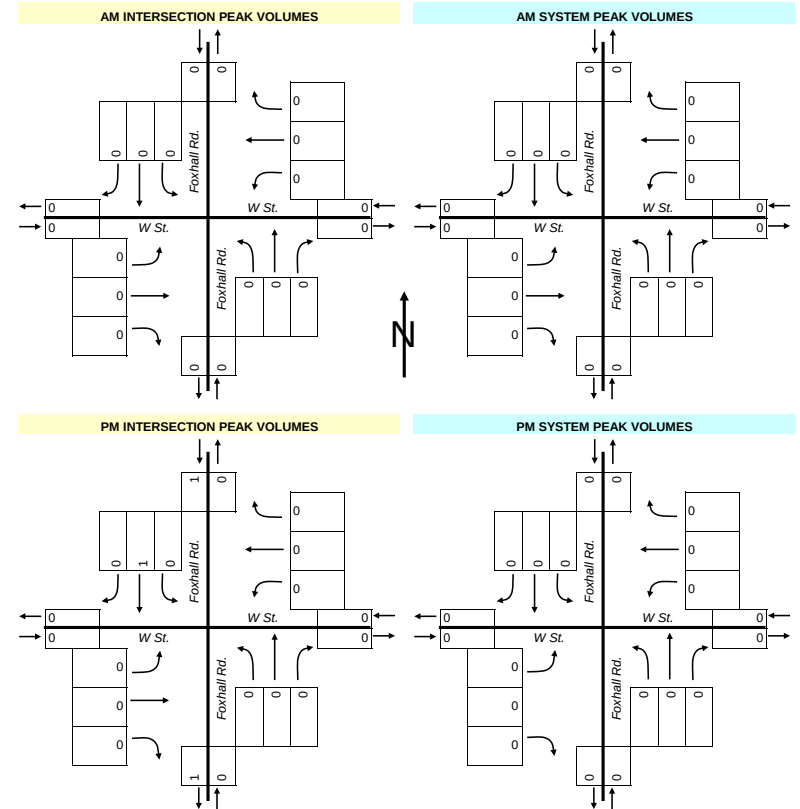
Date of Counts: Tuesday, April 24, 2012
 AM Weather Conditions: Clear PM Weather Conditions: Clear



Project Name :
 Project # :
 Location :
 Data Source: Gorove/Slade Associates, Inc.

Intersection:		W Street at Foxhall Road Northwest																				
AM PEAK		Direction:				Southbound				Westbound				Northbound				Eastbound				
		Roadway:				Foxhall Rd.				W St.				Foxhall Rd.				W St.				
		Movement:				Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
6:00 AM	to 6:15 AM																					
6:15 AM	to 6:30 AM																					
6:30 AM	to 6:45 AM																					
6:45 AM	to 7:00 AM																					
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																					
8:00 AM	to 8:15 AM																					
8:15 AM	to 8:30 AM																					
8:30 AM	to 8:45 AM																					
8:45 AM	to 9:00 AM																					
PM PEAK		Direction:				Southbound				Westbound				Northbound				Eastbound				
		Roadway:				Foxhall Rd.				W St.				Foxhall Rd.				W St.				
		Movement:				Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
2:30 PM	to 2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:45 PM	to 3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:00 PM	to 3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:15 PM	to 3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:30 PM	to 3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	
3:45 PM	to 4:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:00 PM	to 4:15 PM																					
4:15 PM	to 4:30 PM																					
4:30 PM	to 4:45 PM																					
4:45 PM	to 5:00 PM																					
5:00 PM	to 5:15 PM																					
5:15 PM	to 5:30 PM																					
PEAK HOURS		Direction:				Southbound				Westbound				Northbound				Eastbound				
		Roadway:				Foxhall Rd.				W St.				Foxhall Rd.				W St.				
		Movement:				Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
AM INTERSECTION PEAK HOUR		6:00 AM	to 7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM INTERSECTION PEAK HOUR		3:00 PM	to 4:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
AM SYSTEM PEAK HOUR		7:45 AM	to 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM SYSTEM PEAK HOUR		5:30 PM	to 6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HOUR FACTORS		Southbound				Westbound				Northbound				Eastbound								
		Foxhall Rd.				W St.				Foxhall Rd.				W St.								
AM Peak Hour		Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach					
AM PEAK HOUR		0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!					
		Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach					
PM PEAK HOUR		0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!					
		Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach					
Overall AM PEAK HOUR FACTOR																		= #DIV/0!				
AM Period Intersection Volume:		0																PM Period Intersection Volume: 1				
Overall PM PEAK HOUR FACTOR																		= #DIV/0!				

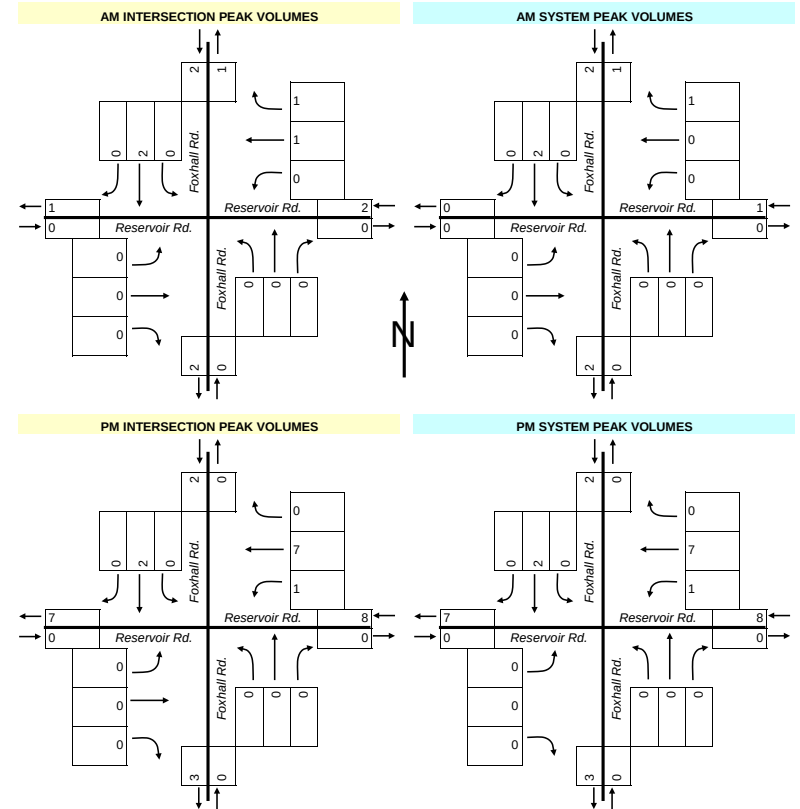
Date of Counts: Thursday, May 24, 2012
 AM Weather Conditions: Clear PM Weather Conditions: Clear



Project Name : The Fields School
 Project # : 0
 Location : DC
 Data Source: Gorove/Slade Associates, Inc.

Intersection:		Foxhall Road at Reservoir Road and Salem Lane															
AM PEAK		Southbound				Westbound				Northbound				Eastbound			
		Direction:				Direction:				Direction:				Direction:			
		Roadway:				Roadway:				Roadway:				Roadway:			
Movement:		Foxhall Rd.				Reservoir Rd.				Foxhall Rd.				Reservoir Rd.			
		Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
6:00 AM	to 6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	to 6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	to 6:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	to 7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	to 7:15 AM	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1
7:15 AM	to 7:30 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	to 7:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:45 AM	to 8:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
8:00 AM	to 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1
8:15 AM	to 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	to 8:45 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1
8:45 AM	to 9:00 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1
PM PEAK		Southbound				Westbound				Northbound				Eastbound			
		Direction:				Direction:				Direction:				Direction:			
		Roadway:				Roadway:				Roadway:				Roadway:			
Movement:		Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
4:00 PM	to 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:15 PM	to 4:30 PM	0	1	0	0	0	1	0	0	0	0	0	1	0	0	0	0
4:30 PM	to 4:45 PM	0	0	0	0	0	1	0	0	0	0	0	3	0	0	0	0
4:45 PM	to 5:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
5:00 PM	to 5:15 PM	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0
5:15 PM	to 5:30 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0
5:30 PM	to 5:45 PM	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	3
5:45 PM	to 6:00 PM	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0
6:00 PM	to 6:15 PM	0	0	1	0	0	3	0	0	0	0	0	1	0	0	0	0
6:15 PM	to 6:30 PM	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0
6:30 PM	to 6:45 PM	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0
6:45 PM	to 7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HOURS		Southbound				Westbound				Northbound				Eastbound			
		Direction:				Direction:				Direction:				Direction:			
		Roadway:				Roadway:				Roadway:				Roadway:			
Movement:		Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
AM INTERSECTION PEAK HOUR																	
7:00 AM	to 8:00 AM	0	2	0	0	1	1	0	0	0	0	0	1	0	0	0	4
PM INTERSECTION PEAK HOUR																	
4:45 PM	to 5:45 PM	0	2	0	0	0	7	1	0	0	0	0	7	0	0	0	3
AM SYSTEM PEAK HOUR																	
6:45 AM	to 7:45 AM	0	2	0	0	1	0	0	0	0	0	0	1	0	0	0	3
PM SYSTEM PEAK HOUR																	
4:45 PM	to 5:45 PM	0	2	0	0	0	7	1	0	0	0	0	7	0	0	0	3
PEAK HOUR FACTORS		Southbound				Westbound				Northbound				Eastbound			
		Foxhall Rd.				Reservoir Rd.				Foxhall Rd.				Reservoir Rd.			
		Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach
AM PEAK HOUR		0.00	0.50	0.00	0.50	0.25	0.00	0.00	0.25	0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!
PM PEAK HOUR		0.00	0.25	0.00	0.25	0.00	0.44	0.25	0.50	0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!
Overall AM PEAK HOUR FACTOR						= 0.75				Overall PM PEAK HOUR FACTOR				= 0.63			
AM Period Intersection Volume:		9				PM Period Intersection Volume:				23							

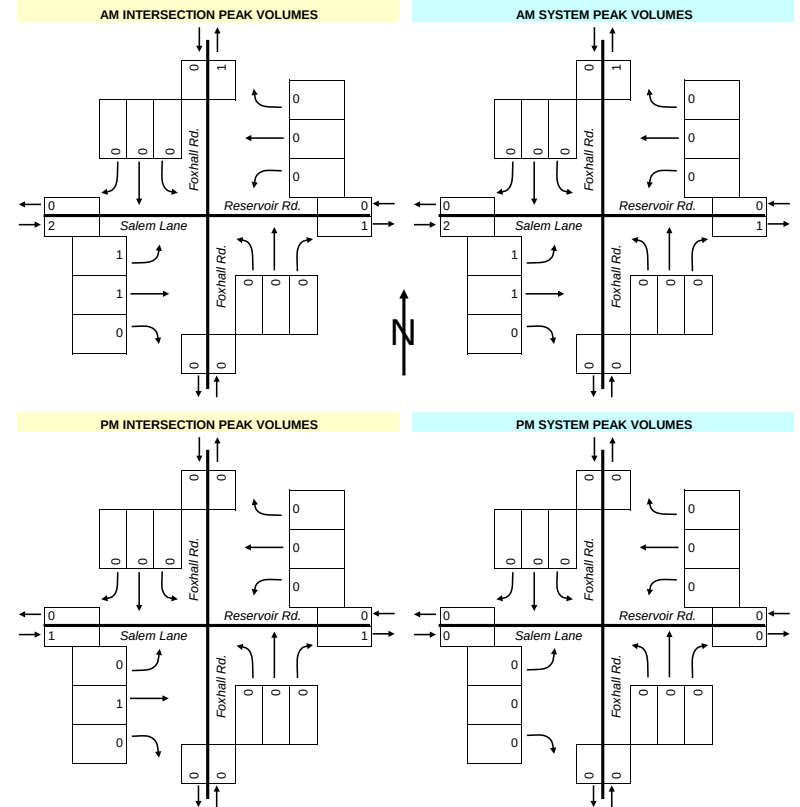
Date of Counts: Tuesday, April 24, 2012
 AM Weather Conditions: Clear PM Weather Conditions: Clear



Project Name : The Fields School
 Project # : 0
 Location : DC
 Data Source: Gorove/Slade Associates, Inc.

Intersection:						Salem Lane at Foxhall Road													
AM PEAK		Direction: Southbound								Northbound				Eastbound					
		Roadway: Foxhall Rd.				Reservoir Rd.				Foxhall Rd.				Salem Lane					
		Right	Thru	Left	Peds	From EB	From WB	Right	Thru	Left	Bikes	Right	Thru	Left	Hard Left				
6:00 AM	to																		
6:15 AM	to																		
6:30 AM	to																		
6:45 AM	to													1					
7:00 AM	to																		
7:15 AM	to																		
7:30 AM	to													1					
7:45 AM	to													1					
8:00 AM	to																		
8:15 AM	to																		
8:30 AM	to																		
8:45 AM	to																		
PM PEAK		Direction: Southbound				Westbound				Northbound				Eastbound					
		Roadway: Foxhall Rd.				Reservoir Rd.				Foxhall Rd.				Salem Lane					
		Right	Thru	Left	Peds	From EB	From WB	Right	Thru	Left	Bikes	Right	Thru	Left	Hard Left				
4:00 PM	to																		
4:15 PM	to																		
4:30 PM	to																		
4:45 PM	to																		
5:00 PM	to																		
5:15 PM	to																		
5:30 PM	to																		
5:45 PM	to																		
6:00 PM	to													1					
6:15 PM	to																		
6:30 PM	to																		
6:45 PM	to																		
PEAK HOURS		Direction: Southbound				Westbound				Northbound				Eastbound					
		Roadway: Foxhall Rd.				Reservoir Rd.				Foxhall Rd.				Salem Lane					
Movement:		Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds		
AM INTERSECTION PEAK HOUR																			
6:45 AM	to 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0		
PM INTERSECTION PEAK HOUR																			
5:15 PM	to 6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0		
AM SYSTEM PEAK HOUR																			
6:45 AM	to 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0		
PM SYSTEM PEAK HOUR																			
4:45 PM	to 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
PEAK HOUR FACTORS		Southbound				Westbound				Northbound				Eastbound					
		Foxhall Rd.				Reservoir Rd.				Foxhall Rd.				Salem Lane					
AM Peak Hour		Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach		
AM PEAK HOUR		0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!	0.00	0.25	0.25	0.50		
		Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach		
PM PEAK HOUR		0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!		
Overall AM PEAK HOUR FACTOR						= 0.50								Overall PM PEAK HOUR FACTOR = #DIV/0!					
AM Period Intersection Volume:		3				PM Period Intersection Volume:				1									

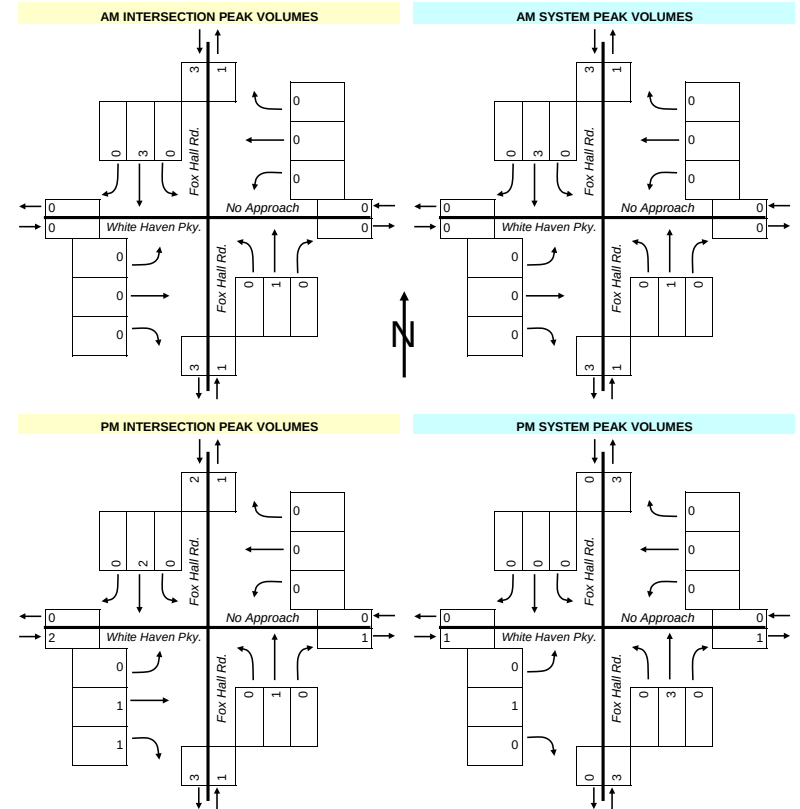
Date of Counts: Tuesday, April 24, 2012
 AM Weather Conditions: Clear PM Weather Conditions: Clear



Project Name : The Fields School
 Project # : 0
 Location : DC
 Data Source: Gorove/Slade Associates, Inc.

Intersection: Whitehaven Parkway at Foxhall Road													
AM PEAK		Direction:				Southbound				Westbound			
		Roadway:				Fox Hall Rd.				No Approach			
		Movement:				Right	Thru	Left	Peds	Right	Thru	Left	Peds
6:00 AM	to 6:15 AM												
6:15 AM	to 6:30 AM												
6:30 AM	to 6:45 AM												
6:45 AM	to 7:00 AM												
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												
8:00 AM	to 8:15 AM												
8:15 AM	to 8:30 AM												
8:30 AM	to 8:45 AM												
8:45 AM	to 9:00 AM												
PM PEAK		Direction:				Southbound				Westbound			
		Roadway:				Fox Hall Rd.				No Approach			
		Movement:				Right	Thru	Left	Peds	Right	Thru	Left	Peds
4:00 PM	to 4:15 PM												
4:15 PM	to 4:30 PM												
4:30 PM	to 4:45 PM												
4:45 PM	to 5:00 PM												
5:00 PM	to 5:15 PM												
5:15 PM	to 5:30 PM												
5:30 PM	to 5:45 PM												
5:45 PM	to 6:00 PM												
6:00 PM	to 6:15 PM												
6:15 PM	to 6:30 PM												
6:30 PM	to 6:45 PM												
6:45 PM	to 7:00 PM												
PEAK HOURS		Direction:				Southbound				Westbound			
		Roadway:				Fox Hall Rd.				No Approach			
		Movement:				Right	Thru	Left	Peds	Right	Thru	Left	Peds
AM INTERSECTION PEAK HOUR		6:45 AM	to 7:45 AM	0	3	0	0	0	0	0	0	0	0
PM INTERSECTION PEAK HOUR		5:30 PM	to 6:30 PM	0	2	0	0	0	0	0	0	0	0
AM SYSTEM PEAK HOUR		6:45 AM	to 7:45 AM	0	3	0	0	0	0	0	0	0	0
PM SYSTEM PEAK HOUR		4:45 PM	to 5:45 PM	0	0	0	0	0	0	0	0	0	0
PEAK HOUR FACTORS		Southbound				Westbound				Northbound			
		Fox Hall Rd.				No Approach				Fox Hall Rd.			
		Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach
AM Peak Hour		0.00	0.75	0.00	0.75	0.00	0.00	0.00	#DIV/0!	0.00	0.25	0.00	0.25
AM PEAK HOUR		0.00	0.75	0.00	0.75	0.00	0.00	0.00	#DIV/0!	0.00	0.25	0.00	0.25
PM Peak Hour		0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!	0.00	0.38	0.00	0.38
PM PEAK HOUR		0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!	0.00	0.38	0.00	0.38
Overall AM PEAK HOUR FACTOR													
AM Period Intersection Volume:													
Overall PM PEAK HOUR FACTOR													
PM Period Intersection Volume:													

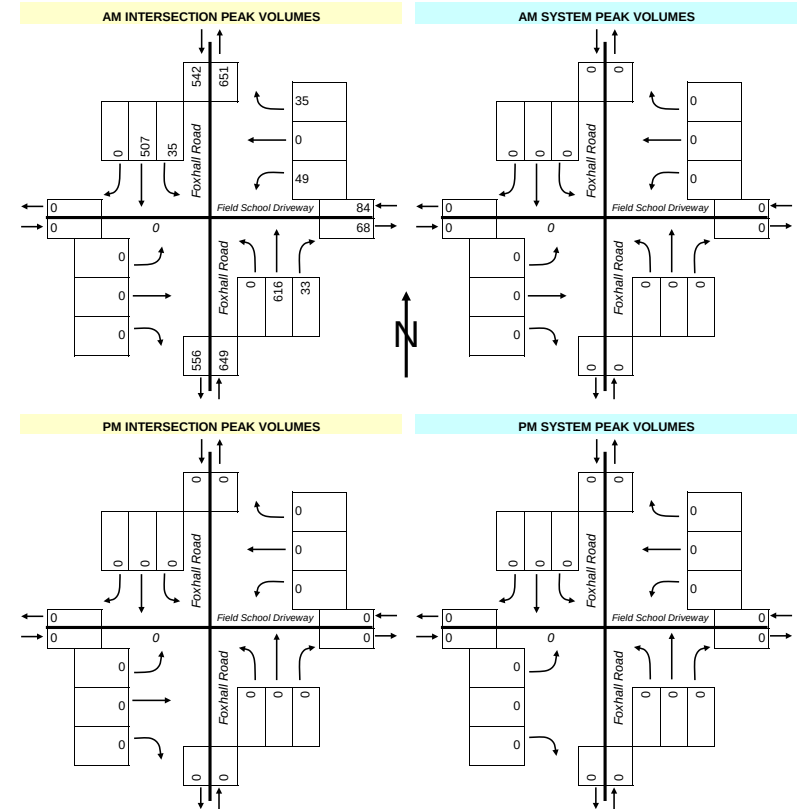
Date of Counts: Tuesday, April 24, 2012
 AM Weather Conditions: Clear PM Weather Conditions: Clear



Project Name : The Fields School
 Project # : 0
 Location : DC
 Data Source: Gorove/Slade Associates, Inc.

Intersection:													
AM PEAK		Southbound				Westbound				Northbound			
		Foxhall Road				Field School Driveway				Foxhall Road			
		Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
2:30 PM	to 2:45 PM	117	10			3	0			14	153		
2:45 PM	to 3:00 PM	117	11			17	30			12	141		
3:00 PM	to 3:15 PM	161	8			9	14			6	157		
3:15 PM	to 3:30 PM	112	6			6	5			1	165		
3:30 PM	to 3:45 PM	125	4			4	4			3	123		
3:45 PM	to 4:00 PM	146	6			16	7			3	139		
4:00 PM	to 4:15 PM												
4:15 PM	to 4:30 PM												
4:30 PM	to 4:45 PM												
4:45 PM	to 5:00 PM												
5:00 PM	to 5:15 PM												
5:15 PM	to 5:30 PM												
PM PEAK		Southbound				Westbound				Northbound			
		Foxhall Road				Field School Driveway				Foxhall Road			
		Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
4:00 PM	to 4:15 PM												
4:15 PM	to 4:30 PM												
4:30 PM	to 4:45 PM												
4:45 PM	to 5:00 PM												
5:00 PM	to 5:15 PM												
5:15 PM	to 5:30 PM												
5:30 PM	to 5:45 PM												
5:45 PM	to 6:00 PM												
6:00 PM	to 6:15 PM												
6:15 PM	to 6:30 PM												
6:30 PM	to 6:45 PM												
6:45 PM	to 7:00 PM												
PEAK HOURS		Southbound				Westbound				Northbound			
		Foxhall Road				Field School Driveway				Foxhall Road			
		Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
AM INTERSECTION PEAK HOUR		0	507	35	0	35	0	49	0	33	616	0	0
PM INTERSECTION PEAK HOUR		0	0	0	0	0	0	0	0	0	0	0	0
AM SYSTEM PEAK HOUR		0	0	0	0	0	0	0	0	0	0	0	0
PM SYSTEM PEAK HOUR		0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM to 6:00 PM		0	0	0	0	0	0	0	0	0	0	0	0
PEAK HOUR FACTORS		Southbound				Westbound				Northbound			
		Foxhall Road				Field School Driveway				Foxhall Road			
		Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach
AM Peak Hour		0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!
AM PEAK HOUR		0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!
PM Peak Hour		0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!
PM PEAK HOUR		0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!
Overall AM PEAK HOUR FACTOR													
AM Period Intersection Volume: 1855													
PM Period Intersection Volume: 0													
Overall PM PEAK HOUR FACTOR													

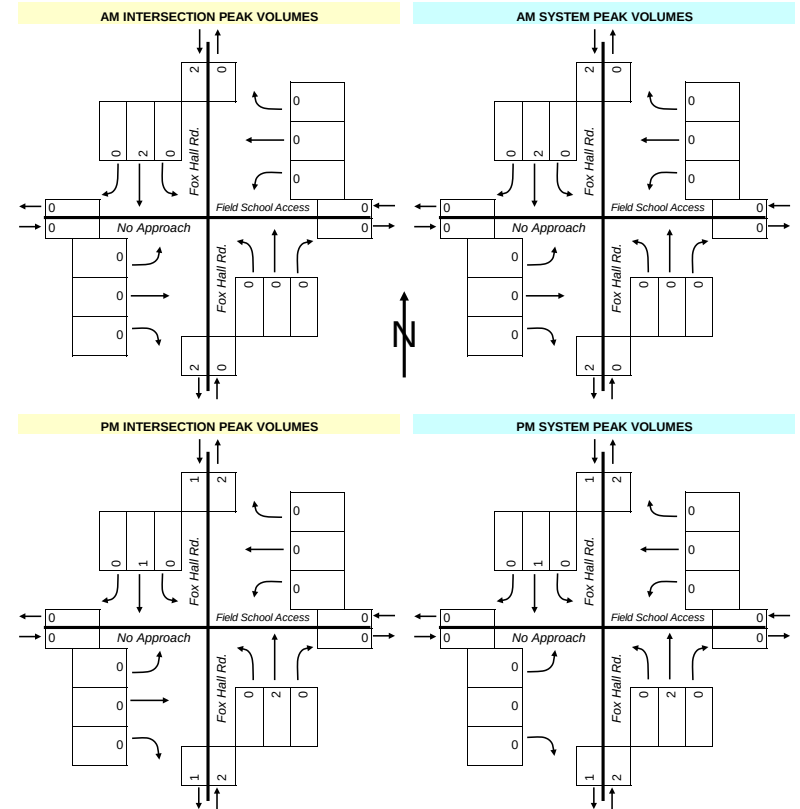
Date of Counts: Tuesday, April 24, 2012
 AM Weather Conditions: Clear PM Weather Conditions: Clear



Project Name : The Fields School
 Project # : 0
 Location : DC
 Data Source: Gorove/Slade Associates, Inc.

Intersection:		Field School Access at Fox Hall Road															
AM PEAK		Southbound				Westbound				Northbound				Eastbound			
		Direction:				Westbound				Northbound				Eastbound			
		Roadway:				Field School Access				Fox Hall Rd.				No Approach			
Movement:		Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
6:00 AM	to 6:15 AM		0								0						
6:15 AM	to 6:30 AM		0								0						
6:30 AM	to 6:45 AM		1								0						
6:45 AM	to 7:00 AM		1								0						
7:00 AM	to 7:15 AM		0								0						
7:15 AM	to 7:30 AM		0								0						
7:30 AM	to 7:45 AM		1								0						
7:45 AM	to 8:00 AM		0								0						
8:00 AM	to 8:15 AM		0								0						
8:15 AM	to 8:30 AM		0								0						
8:30 AM	to 8:45 AM		0								0						
8:45 AM	to 9:00 AM		0								0						
PM PEAK		Southbound				Westbound				Northbound				Eastbound			
		Direction:				Westbound				Northbound				Eastbound			
		Roadway:				Field School Access				Fox Hall Rd.				No Approach			
Movement:		Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
4:00 PM	to 4:15 PM		0								1						
4:15 PM	to 4:30 PM		1								0						
4:30 PM	to 4:45 PM		0								0						
4:45 PM	to 5:00 PM		0								0						
5:00 PM	to 5:15 PM		0								2						
5:15 PM	to 5:30 PM		0								0						
5:30 PM	to 5:45 PM		1								0						
5:45 PM	to 6:00 PM		0								0						
6:00 PM	to 6:15 PM		0								0						
6:15 PM	to 6:30 PM		0								0						
6:30 PM	to 6:45 PM		0								0						
6:45 PM	to 7:00 PM		0								0						
PEAK HOURS		Southbound				Westbound				Northbound				Eastbound			
		Direction:				Westbound				Northbound				Eastbound			
		Roadway:				Field School Access				Fox Hall Rd.				No Approach			
Movement:		Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
AM INTERSECTION PEAK HOUR		0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM INTERSECTION PEAK HOUR		0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0
AM SYSTEM PEAK HOUR		0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM SYSTEM PEAK HOUR		0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0
PEAK HOUR FACTORS		Southbound				Westbound				Northbound				Eastbound			
		Fox Hall Rd.				Field School Access				Fox Hall Rd.				No Approach			
AM Peak Hour		Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach
AM PEAK HOUR		0.00	0.50	0.00	0.50	0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	#DIV/0!
PM Peak Hour		Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach
PM PEAK HOUR		0.00	0.25	0.00	0.25	0.00	0.00	0.00	#DIV/0!	0.00	0.25	0.00	0.25	0.00	0.00	0.00	#DIV/0!
Overall AM PEAK HOUR FACTOR						= 0.50								Overall PM PEAK HOUR FACTOR = 0.38			
AM Period Intersection Volume:		3				PM Period Intersection Volume:				5							

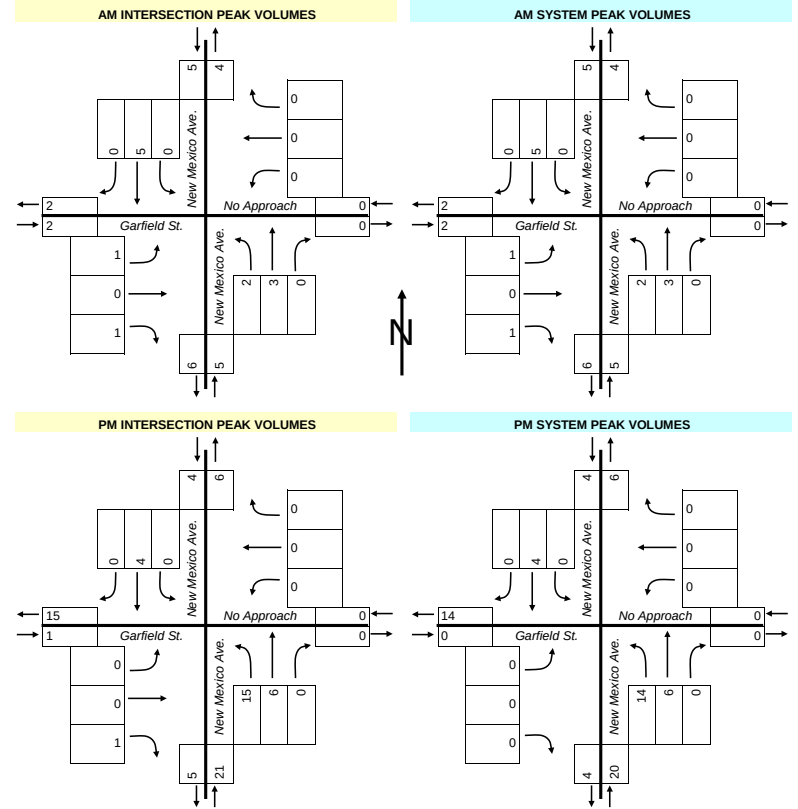
Date of Counts: Tuesday, April 24, 2012
 AM Weather Conditions: Clear PM Weather Conditions: Clear



Project Name :
 Project # :
 Location :
 Data Source :
 Grove/Slade Associates, Inc.

Intersection:		New Mexico Avenue at Garfield Street Northwest																			
AM PEAK		Southbound				Westbound				Northbound				Eastbound							
		New Mexico Ave.				No Approach				New Mexico Ave.				Garfield St.							
		Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds				
6:00 AM	to 6:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0			
6:15 AM	to 6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
6:30 AM	to 6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
6:45 AM	to 7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
7:00 AM	to 7:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
7:15 AM	to 7:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
7:30 AM	to 7:45 AM	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0			
7:45 AM	to 8:00 AM	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0			
8:00 AM	to 8:15 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0			
8:15 AM	to 8:30 AM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0			
8:30 AM	to 8:45 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0			
8:45 AM	to 9:00 AM	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0			
PM PEAK		Southbound				Westbound				Northbound				Eastbound							
		New Mexico Ave.				No Approach				New Mexico Ave.				Garfield St.							
		Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds				
4:00 PM	to 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
4:15 PM	to 4:30 PM	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0			
4:30 PM	to 4:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0			
4:45 PM	to 5:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
5:00 PM	to 5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0			
5:15 PM	to 5:30 PM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
5:30 PM	to 5:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0			
5:45 PM	to 6:00 PM	0	3	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0			
6:00 PM	to 6:15 PM	0	1	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0			
6:15 PM	to 6:30 PM	0	0	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0			
6:30 PM	to 6:45 PM	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0			
6:45 PM	to 7:00 PM																				
PEAK HOURS		Southbound				Westbound				Northbound				Eastbound							
		New Mexico Ave.				No Approach				New Mexico Ave.				Garfield St.							
		Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds				
AM INTERSECTION PEAK HOUR																					
7:45 AM	to 8:45 AM	0	5	0	0	0	0	0	0	0	3	2	0	1	0	1	0	0			
PM INTERSECTION PEAK HOUR																					
5:45 PM	to 6:45 PM	0	4	0	0	0	0	0	0	0	6	15	0	1	0	0	0	0			
AM SYSTEM PEAK HOUR																					
7:45 AM	to 8:45 AM	0	5	0	0	0	0	0	0	0	3	2	0	1	0	1	0	0			
PM SYSTEM PEAK HOUR																					
5:30 PM	to 6:30 PM	0	4	0	0	0	0	0	0	0	6	14	0	0	0	0	0	0			
PEAK HOUR FACTORS		Southbound				Westbound				Northbound				Eastbound							
		New Mexico Ave.				No Approach				New Mexico Ave.				Garfield St.							
		Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach				
AM Peak Hour		0.00	0.42	0.00	0.42	0.00	0.00	0.00	#DIV/0!	0.00	0.38	0.50	0.63	0.25	0.00	0.25	0.50				
PM Peak Hour		0.00	0.33	0.00	0.33	0.00	0.00	0.00	#DIV/0!	0.00	0.50	0.29	0.42	0.00	0.00	0.00	#DIV/0!				
Overall AM PEAK HOUR FACTOR						= 0.75								Overall PM PEAK HOUR FACTOR = 0.50							
AM Period Intersection Volume:		22				PM Period Intersection Volume:				36											

Date of Counts: Thursday, May 24, 2012
 AM Weather Conditions: Clear
 PM Weather Conditions: Clear

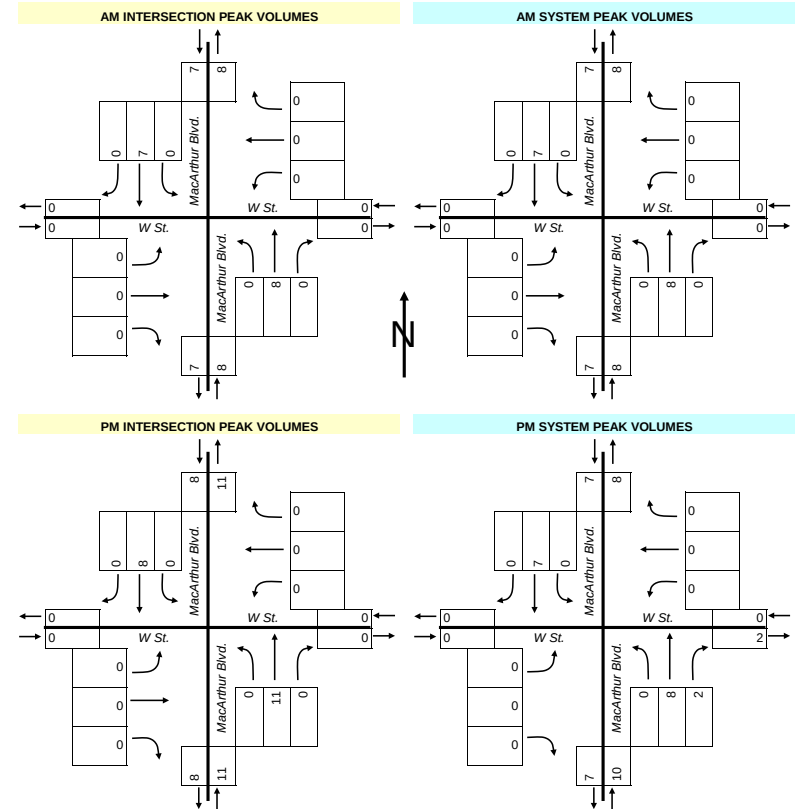


Project Name :
Project # :
Location :
Data Source:

0
0
0
Gorove/Slade Associates, Inc.

Intersection:		W Street at MacArthur Boulevard Northwest															
AM PEAK		Southbound				Westbound				Northbound				Eastbound			
Direction:		MacArthur Blvd.				W St.				MacArthur Blvd.				W St.			
Roadway:		MacArthur Blvd.				W St.				MacArthur Blvd.				W St.			
Movement:		Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
6:00 AM to 6:15 AM		0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
6:15 AM to 6:30 AM		0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
6:30 AM to 6:45 AM		0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0
6:45 AM to 7:00 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM to 7:15 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM to 7:30 AM		0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM to 7:45 AM		0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
7:45 AM to 8:00 AM		0	1	0	0	0	0	0	0	0	2	0	1	0	0	0	0
8:00 AM to 8:15 AM		0	3	0	0	0	0	0	0	0	0	0	2	0	0	0	0
8:15 AM to 8:30 AM		0	1	0	0	0	0	0	0	0	3	0	0	0	0	0	0
8:30 AM to 8:45 AM		0	2	0	0	0	0	0	0	0	3	0	3	0	0	0	0
8:45 AM to 9:00 AM		0	2	0	0	0	0	0	0	0	1	0	1	0	0	0	0
PM PEAK		Southbound				Westbound				Northbound				Eastbound			
Direction:		MacArthur Blvd.				W St.				MacArthur Blvd.				W St.			
Roadway:		MacArthur Blvd.				W St.				MacArthur Blvd.				W St.			
Movement:		Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
4:00 PM to 4:15 PM		0	4	0	0	0	0	0	0	0	4	0	0	0	0	0	0
4:15 PM to 4:30 PM		0	2	0	0	0	0	0	0	0	1	0	1	0	0	0	0
4:30 PM to 4:45 PM		0	1	0	0	0	0	0	0	0	4	0	0	0	0	0	0
4:45 PM to 5:00 PM		0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0
5:00 PM to 5:15 PM		0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	0
5:15 PM to 5:30 PM		0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
5:30 PM to 5:45 PM		0	3	0	0	0	0	0	0	1	2	0	0	0	0	0	0
5:45 PM to 6:00 PM		0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0
6:00 PM to 6:15 PM		0	1	0	0	0	0	0	0	0	3	0	1	0	0	0	0
6:15 PM to 6:30 PM		0	1	0	0	0	0	0	0	1	2	0	0	0	0	0	0
6:30 PM to 6:45 PM		0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
6:45 PM to 7:00 PM		0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HOURS		Southbound MacArthur Blvd.				Westbound W St.				Northbound MacArthur Blvd.				Eastbound W St.			
Direction:		MacArthur Blvd.				W St.				MacArthur Blvd.				W St.			
Roadway:		MacArthur Blvd.				W St.				MacArthur Blvd.				W St.			
Movement:		Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
AM INTERSECTION PEAK HOUR																	
7:45 AM to 8:45 AM		0	7	0	0	0	0	0	0	0	8	0	6	0	0	0	0
PM INTERSECTION PEAK HOUR																	
4:00 PM to 5:00 PM		0	8	0	0	0	0	0	0	0	11	0	1	0	0	0	0
AM SYSTEM PEAK HOUR																	
7:45 AM to 8:45 AM		0	7	0	0	0	0	0	0	0	8	0	6	0	0	0	0
PM SYSTEM PEAK HOUR																	
5:30 PM to 6:30 PM		0	7	0	0	0	0	0	0	2	8	0	1	0	0	0	0
PEAK HOUR FACTORS		Southbound				Westbound				Northbound				Eastbound			
		MacArthur Blvd.				W St.				MacArthur Blvd.				W St.			
		Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach
AM PEAK HOUR		0.00	0.58	0.00	0.58	0.00	0.00	0.00	#DIV/0!	0.00	0.67	0.00	0.67	0.00	0.00	0.00	#DIV/0!
PM PEAK HOUR		0.00	0.58	0.00	0.58	0.00	0.00	0.00	#DIV/0!	0.50	0.67	0.00	0.83	0.00	0.00	0.00	#DIV/0!
Overall AM PEAK HOUR FACTOR						= 0.75				Overall PM PEAK HOUR FACTOR				= 0.71			
AM Period Intersection Volume:		28				PM Period Intersection Volume:				47							

Date of Counts: Thursday, May 24, 2012
AM Weather Conditions: Clear PM Weather Conditions: Clear



APPENDIX C

VEHICLE OCCUPANCY DATA

8-May

# of Occupants	Ingress Occupancy			
	1	2	3	3+
7:15	10	4	1	0
7:30	8	6	0	0
7:45	5	11	3	0
8:00	12	10	0	0
8:15	6	14	3	0
8:30	14	29	4	0
8:45	7	20	2	0
9:00	4	3	0	0

Total Passengers	Average Occupancy
21	1.40
20	1.43
36	1.89
32	1.45
43	1.87
84	1.79
53	1.83
<u>10</u>	<u>1.43</u>
299	1.70

# of Occupants	Egress Occupancy			
	1	2	3	3+
2:30 PM	0	1	0	0
2:45 PM	11	13	3	0
3:00 PM	11	9	1	0
3:15 PM	5	5	0	0
3:30 PM	8	5	1	0
3:45 PM	7	3	1	0
4:00 PM	1	7	1	0
4:15 PM	6	7	0	0
4:30 PM	6	5	2	1
4:45 PM	3	6	2	0
5:00 PM	6	7	3	0
5:15 PM	12	2	2	0
5:30 PM	6	5	0	0
5:45 PM	7	1	2	0
6:00 PM	7	3	0	0
6:15 PM	2	5	0	0

Total Passengers	Average Occupancy
2	2.00
46	1.70
32	1.52
15	1.50
21	1.50
16	1.45
18	2.00
20	1.54
26	1.86
21	1.91
29	1.81
22	1.38
16	1.45
15	1.50
13	1.30
<u>12</u>	<u>1.71</u>
324	1.61

APPENDIX D

EXISTING CAPACITY ANALYSIS RESULTS

HCM Signalized Intersection Capacity Analysis

The Field School

1: Garfield St NW & Foxhall Rd NW

10/26/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	33	56	4	166	32	22	1	684	82	29	704	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			1.00			1.00	
Flpb, ped/bikes		1.00			0.99			1.00			1.00	
Frt		0.99			0.99			0.99			1.00	
Flt Protected		0.98			0.96			1.00			1.00	
Satd. Flow (prot)		1818			1761			1832			1854	
Flt Permitted		0.87			0.74			1.00			0.96	
Satd. Flow (perm)		1614			1361			1831			1775	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	36	61	4	180	35	24	1	743	89	32	765	14
RTOR Reduction (vph)	0	0	0	0	6	0	0	5	0	0	0	0
Lane Group Flow (vph)	0	101	0	0	233	0	0	828	0	0	811	0
Confl. Peds. (#/hr)			3	3			1		1	1		1
Confl. Bikes (#/hr)												1
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		16.6			16.6			45.4			45.4	
Effective Green, g (s)		16.6			16.6			45.4			45.4	
Actuated g/C Ratio		0.24			0.24			0.65			0.65	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			1.0			1.0	
Lane Grp Cap (vph)		383			323			1188			1151	
v/s Ratio Prot												
v/s Ratio Perm		0.06			0.17			0.45			0.46	
v/c Ratio		0.26			0.72			0.70			0.70	
Uniform Delay, d1		21.7			24.6			7.9			8.0	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.4			7.7			3.4			3.6	
Delay (s)		22.1			32.3			11.3			11.6	
Level of Service		C			C			B			B	
Approach Delay (s)		22.1			32.3			11.3			11.6	
Approach LOS		C			C			B			B	
Intersection Summary												
HCM Average Control Delay			14.5				HCM Level of Service				B	
HCM Volume to Capacity ratio			0.71									
Actuated Cycle Length (s)			70.0				Sum of lost time (s)			8.0		
Intersection Capacity Utilization			86.1%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

2: W St NW & Foxhall Rd NW

The Field School

10/26/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	21	4	125	6	0	10	22	744	5	6	754	89
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	4	136	7	0	11	24	809	5	7	820	97
Pedestrians					4			6				
Lane Width (ft)					12.0			12.0				
Walking Speed (ft/s)					4.0			4.0				
Percent Blockage					0			1				
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)								1067			342	
pX, platoon unblocked	0.74	0.74	0.70	0.74	0.74	0.91	0.70			0.91		
vC, conflicting volume	1751	1747	874	1888	1793	815	916			818		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1554	1548	603	1738	1609	745	664			748		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	64	95	61	77	100	97	96			99		
cM capacity (veh/h)	64	81	347	28	74	374	646			778		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	163	17	838	923								
Volume Left	23	7	24	7								
Volume Right	136	11	5	97								
cSH	203	67	646	778								
Volume to Capacity	0.80	0.26	0.04	0.01								
Queue Length 95th (ft)	142	23	3	1								
Control Delay (s)	69.6	76.4	1.1	0.2								
Lane LOS	F	F	A	A								
Approach Delay (s)	69.6	76.4	1.1	0.2								
Approach LOS	F	F										
Intersection Summary												
Average Delay			7.1									
Intersection Capacity Utilization			71.6%		ICU Level of Service				C			
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis

3: Whitehaven Pkwy NW & Foxhall Rd NW

The Field School

10/26/2012



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	156	180	84	482	588	224
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0	5.0	5.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frpb, ped/bikes	0.99		1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.93		1.00	1.00	1.00	0.85
Flt Protected	0.98		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1670		1770	1863	1863	1549
Flt Permitted	0.98		0.33	1.00	1.00	1.00
Satd. Flow (perm)	1670		605	1863	1863	1549
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	170	196	91	524	639	243
RTOR Reduction (vph)	74	0	0	0	0	82
Lane Group Flow (vph)	292	0	91	524	639	161
Confl. Peds. (#/hr)	3	8				
Confl. Bikes (#/hr)						3
Turn Type			Perm			Perm
Protected Phases	8			6	2	
Permitted Phases			6			2
Actuated Green, G (s)	14.1		35.9	35.9	35.9	35.9
Effective Green, g (s)	14.1		35.9	35.9	35.9	35.9
Actuated g/C Ratio	0.23		0.60	0.60	0.60	0.60
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0		1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	392		362	1115	1115	927
v/s Ratio Prot	c0.17			0.28	c0.34	
v/s Ratio Perm			0.15			0.10
v/c Ratio	0.74		0.25	0.47	0.57	0.17
Uniform Delay, d1	21.3		5.7	6.7	7.4	5.4
Progression Factor	1.00		0.54	0.98	0.78	0.89
Incremental Delay, d2	7.5		0.7	0.6	1.9	0.4
Delay (s)	28.8		3.8	7.2	7.7	5.2
Level of Service	C		A	A	A	A
Approach Delay (s)	28.8			6.7	7.0	
Approach LOS	C			A	A	
Intersection Summary						
HCM Average Control Delay			11.2		HCM Level of Service	B
HCM Volume to Capacity ratio			0.62			
Actuated Cycle Length (s)			60.0		Sum of lost time (s)	10.0
Intersection Capacity Utilization			69.4%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

The Field School

4: Reservoir Rd NW & Foxhall Rd NW

10/26/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	436	89	80	201	71	95	561	335	409	466	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	4.0	6.0	6.0		4.0		6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		0.95		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.69	1.00	1.00	1.00		0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.95		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1100	1770	1863	1583		3311		1770	1848	
Flt Permitted	0.62	1.00	1.00	0.12	1.00	1.00		1.00		0.95	1.00	
Satd. Flow (perm)	1158	1863	1100	233	1863	1583		3311		1770	1848	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	20	474	97	87	218	77	103	610	364	445	507	25
RTOR Reduction (vph)	0	0	35	0	0	53	0	54	0	0	2	0
Lane Group Flow (vph)	20	474	63	87	218	24	0	1023	0	445	530	0
Confl. Peds. (#/hr)			58	58					9	9		
Confl. Bikes (#/hr)			1									2
Turn Type	Perm		Perm	pm+pt		Perm	Split			Split		
Protected Phases		4		3	8		2	2		6	6	
Permitted Phases	4		4	8		8						
Actuated Green, G (s)	28.0	28.0	28.0	38.0	38.0	38.0		37.0		29.0	29.0	
Effective Green, g (s)	28.0	28.0	28.0	38.0	38.0	38.0		37.0		29.0	29.0	
Actuated g/C Ratio	0.23	0.23	0.23	0.32	0.32	0.32		0.31		0.24	0.24	
Clearance Time (s)	6.0	6.0	6.0	4.0	6.0	6.0		4.0		6.0	6.0	
Lane Grp Cap (vph)	270	435	257	151	590	501		1021		428	447	
v/s Ratio Prot		c0.25		c0.03	0.12			c0.31		0.25	c0.29	
v/s Ratio Perm	0.02		0.06	0.15		0.02						
v/c Ratio	0.07	1.09	0.24	0.58	0.37	0.05		1.00		1.04	1.19	
Uniform Delay, d1	35.9	46.0	37.4	32.9	31.7	28.5		41.5		45.5	45.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00		0.92	0.93	
Incremental Delay, d2	0.5	69.5	2.2	15.0	1.8	0.2		28.6		51.3	102.4	
Delay (s)	36.4	115.5	39.6	47.9	33.5	28.6		70.1		93.3	144.5	
Level of Service	D	F	D	D	C	C		E		F	F	
Approach Delay (s)		100.4			35.8			70.1			121.2	
Approach LOS		F			D			E			F	
Intersection Summary												
HCM Average Control Delay			88.2			HCM Level of Service				F		
HCM Volume to Capacity ratio			1.06									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			20.0			
Intersection Capacity Utilization			99.3%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

5: Site Driveway & Foxhall Rd NW

The Field School
10/26/2012



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	24	20	722	57	57	796
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0		6.0	6.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.99		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	1841		1770	1863
Flt Permitted	0.95	1.00	1.00		0.12	1.00
Satd. Flow (perm)	1770	1583	1841		227	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	22	785	62	62	865
RTOR Reduction (vph)	0	20	3	0	0	0
Lane Group Flow (vph)	26	2	844	0	62	865
Confl. Peds. (#/hr)	1	1				
Confl. Bikes (#/hr)				2		
Turn Type		Prot			pm+pt	
Protected Phases	8	8	6		5	2
Permitted Phases					2	
Actuated Green, G (s)	4.4	4.4	26.8		43.6	43.6
Effective Green, g (s)	4.4	4.4	26.8		43.6	43.6
Actuated g/C Ratio	0.07	0.07	0.45		0.73	0.73
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	1.0		1.0	1.0
Lane Grp Cap (vph)	130	116	822		443	1354
v/s Ratio Prot	c0.01	0.00	c0.46		0.03	c0.46
v/s Ratio Perm					0.08	
v/c Ratio	0.20	0.01	1.03		0.14	0.64
Uniform Delay, d1	26.1	25.8	16.6		14.4	4.2
Progression Factor	1.00	1.00	1.05		1.00	1.00
Incremental Delay, d2	0.8	0.0	37.1		0.1	2.3
Delay (s)	26.9	25.8	54.5		14.4	6.5
Level of Service	C	C	D		B	A
Approach Delay (s)	26.4		54.5			7.0
Approach LOS	C		D			A
Intersection Summary						
HCM Average Control Delay			29.6		HCM Level of Service	C
HCM Volume to Capacity ratio			0.77			
Actuated Cycle Length (s)			60.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			63.4%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis

6: Garfield St. NW & New Mexico Ave NW

The Field School
10/26/2012



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	21	147	72	403	393	17
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	160	78	438	427	18
Pedestrians	18				5	
Lane Width (ft)	12.0				12.0	
Walking Speed (ft/s)	4.0				4.0	
Percent Blockage	1				0	
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1054	454	464			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1054	454	464			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	90	73	93			
cM capacity (veh/h)	228	597	1081			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	183	516	446			
Volume Left	23	78	0			
Volume Right	160	0	18			
cSH	496	1081	1700			
Volume to Capacity	0.37	0.07	0.26			
Queue Length 95th (ft)	42	6	0			
Control Delay (s)	16.4	2.0	0.0			
Lane LOS	C	A				
Approach Delay (s)	16.4	2.0	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay			3.5			
Intersection Capacity Utilization			67.2%		ICU Level of Service	C
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

7: W St NW & MacArthur Blvd NW

The Field School

10/26/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	5	1	2	9	0	24	3	827	17	59	1017	36
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	1	2	10	0	26	3	899	18	64	1105	39
Pedestrians		10			16						2	
Lane Width (ft)		12.0			12.0						12.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		1			1						0	
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1747	2203	582	1614	2214	477	1155			933		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1747	2203	582	1614	2214	477	1155			933		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	88	97	100	84	100	95	99			91		
cM capacity (veh/h)	47	39	452	61	38	527	596			719		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	9	36	453	468	617	592						
Volume Left	5	10	3	0	64	0						
Volume Right	2	26	0	18	0	39						
cSH	59	170	596	1700	719	1700						
Volume to Capacity	0.15	0.21	0.01	0.28	0.09	0.35						
Queue Length 95th (ft)	12	19	0	0	7	0						
Control Delay (s)	76.6	31.7	0.2	0.0	2.3	0.0						
Lane LOS	F	D	A		A							
Approach Delay (s)	76.6	31.7	0.1		1.2							
Approach LOS	F	D										
Intersection Summary												
Average Delay			1.5									
Intersection Capacity Utilization			68.5%		ICU Level of Service				C			
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis

The Field School

1: Garfield St NW & Foxhall Rd NW

10/26/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Volume (vph)	23	31	1	77	32	25	0	664	59	8	526	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			1.00			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		1.00			0.98			0.99			1.00	
Flt Protected		0.98			0.97			1.00			1.00	
Satd. Flow (prot)		1818			1755			1838			1855	
Flt Permitted		0.86			0.84			1.00			0.99	
Satd. Flow (perm)		1602			1513			1838			1838	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	34	1	84	35	27	0	722	64	9	572	13
RTOR Reduction (vph)	0	0	0	0	15	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	60	0	0	131	0	0	783	0	0	594	0
Confl. Peds. (#/hr)	1		1	1		1	2		7	7		2
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		10.2			10.2			51.8			51.8	
Effective Green, g (s)		10.2			10.2			51.8			51.8	
Actuated g/C Ratio		0.15			0.15			0.74			0.74	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			1.0			1.0	
Lane Grp Cap (vph)		233			220			1360			1360	
v/s Ratio Prot								c0.43				
v/s Ratio Perm		0.04			c0.09						0.32	
v/c Ratio		0.26			0.60			0.58			0.44	
Uniform Delay, d1		26.5			28.0			4.1			3.5	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.6			4.3			1.8			1.0	
Delay (s)		27.1			32.3			5.9			4.5	
Level of Service		C			C			A			A	
Approach Delay (s)		27.1			32.3			5.9			4.5	
Approach LOS		C			C			A			A	

Intersection Summary

HCM Average Control Delay	8.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	56.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

2: W St NW & Foxhall Rd NW

The Field School

10/26/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	31	4	29	1	1	8	44	676	2	4	540	49
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	34	4	32	1	1	9	48	735	2	4	587	53
Pedestrians					6			3				
Lane Width (ft)					12.0			12.0				
Walking Speed (ft/s)					4.0			4.0				
Percent Blockage					1			0				
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)								1067			342	
pX, platoon unblocked	0.95	0.95	0.90	0.95	0.95	0.91	0.90			0.91		
vC, conflicting volume	1463	1461	617	1496	1486	742	640			743		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1248	1245	520	1283	1272	667	546			668		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	74	97	94	99	99	98	95			99		
cM capacity (veh/h)	132	154	500	116	149	415	922			835		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	70	11	785	645								
Volume Left	34	1	48	4								
Volume Right	32	9	2	53								
cSH	201	289	922	835								
Volume to Capacity	0.35	0.04	0.05	0.01								
Queue Length 95th (ft)	37	3	4	0								
Control Delay (s)	32.2	17.9	1.3	0.1								
Lane LOS	D	C	A	A								
Approach Delay (s)	32.2	17.9	1.3	0.1								
Approach LOS	D	C										
Intersection Summary												
Average Delay			2.4									
Intersection Capacity Utilization			83.5%		ICU Level of Service				E			
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis

3: Whitehaven Pkwy NW & Foxhall Rd NW

The Field School

10/26/2012



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W		W	W	W	W
Volume (vph)	73	41	89	575	486	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0	5.0	5.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frpb, ped/bikes	0.99		1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.95		1.00	1.00	1.00	0.85
Flt Protected	0.97		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1707		1762	1863	1863	1536
Flt Permitted	0.97		0.45	1.00	1.00	1.00
Satd. Flow (perm)	1707		826	1863	1863	1536
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	79	45	97	625	528	76
RTOR Reduction (vph)	24	0	0	0	0	13
Lane Group Flow (vph)	100	0	97	625	528	63
Confl. Peds. (#/hr)	1	2	3			3
Turn Type			Perm			Perm
Protected Phases	8			6	2	
Permitted Phases			6			2
Actuated Green, G (s)	11.3		78.7	78.7	78.7	78.7
Effective Green, g (s)	11.3		78.7	78.7	78.7	78.7
Actuated g/C Ratio	0.11		0.79	0.79	0.79	0.79
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0		1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	193		650	1466	1466	1209
v/s Ratio Prot	c0.06			c0.34	0.28	
v/s Ratio Perm			0.12			0.04
v/c Ratio	0.52		0.15	0.43	0.36	0.05
Uniform Delay, d1	41.8		2.6	3.4	3.2	2.4
Progression Factor	1.00		0.55	0.67	0.88	0.93
Incremental Delay, d2	2.3		0.4	0.8	0.6	0.1
Delay (s)	44.1		1.8	3.0	3.4	2.3
Level of Service	D		A	A	A	A
Approach Delay (s)	44.1			2.9	3.3	
Approach LOS	D			A	A	

Intersection Summary

HCM Average Control Delay	6.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	51.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

The Field School

4: Reservoir Rd NW & Foxhall Rd NW

10/26/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	190	55	239	457	223	126	494	120	160	587	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	4.0	6.0	6.0		4.0		6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		0.95		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00	1.00		1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99		0.95	1.00	
Satd. Flow (prot)	1770	1863	1516	1770	1863	1583		3417		1770	1853	
Flt Permitted	0.34	1.00	1.00	0.28	1.00	1.00		0.99		0.95	1.00	
Satd. Flow (perm)	642	1863	1516	530	1863	1583		3417		1770	1853	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	207	60	260	497	242	137	537	130	174	638	20
RTOR Reduction (vph)	0	0	52	0	0	169	0	16	0	0	1	0
Lane Group Flow (vph)	18	207	8	260	497	73	0	788	0	174	657	0
Confl. Peds. (#/hr)									1	1		
Confl. Bikes (#/hr)			8									2
Turn Type	Perm		Perm	pm+pt		Perm	Split			Split		
Protected Phases		4		3	8		2	2		6	6	
Permitted Phases	4		4	8		8						
Actuated Green, G (s)	13.0	13.0	13.0	30.0	30.0	30.0		35.0		19.0	19.0	
Effective Green, g (s)	13.0	13.0	13.0	30.0	30.0	30.0		35.0		19.0	19.0	
Actuated g/C Ratio	0.13	0.13	0.13	0.30	0.30	0.30		0.35		0.19	0.19	
Clearance Time (s)	6.0	6.0	6.0	4.0	6.0	6.0		4.0		6.0	6.0	
Lane Grp Cap (vph)	83	242	197	320	559	475		1196		336	352	
v/s Ratio Prot		0.11		0.11	c0.27			c0.23		0.10	c0.35	
v/s Ratio Perm	0.03		0.01	0.14		0.05						
v/c Ratio	0.22	0.86	0.04	0.81	0.89	0.15		0.66		0.52	1.87	
Uniform Delay, d1	38.9	42.6	38.0	29.3	33.4	25.7		27.5		36.4	40.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.09	1.06	
Incremental Delay, d2	5.9	30.1	0.4	19.8	18.8	0.7		2.9		5.5	400.7	
Delay (s)	44.8	72.7	38.4	49.0	52.2	26.4		30.3		45.1	443.5	
Level of Service	D	E	D	D	D	C		C		D	F	
Approach Delay (s)		63.7			45.1			30.3			360.2	
Approach LOS		E			D			C			F	
Intersection Summary												
HCM Average Control Delay			132.6			HCM Level of Service				F		
HCM Volume to Capacity ratio			1.01									
Actuated Cycle Length (s)			100.0			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			105.5%			ICU Level of Service			G			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

5: Site Driveway & Foxhall Rd NW

The Field School

10/26/2012



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	14	26	661	17	20	628
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0		6.0	6.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	1.00		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	1856		1770	1863
Flt Permitted	0.95	1.00	1.00		0.32	1.00
Satd. Flow (perm)	1770	1583	1856		605	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	28	718	18	22	683
RTOR Reduction (vph)	0	27	1	0	0	0
Lane Group Flow (vph)	15	1	735	0	22	683
Confl. Peds. (#/hr)	5	3				
Confl. Bikes (#/hr)				2		
Turn Type		Prot			pm+pt	
Protected Phases	8	8	6		5	2
Permitted Phases					2	
Actuated Green, G (s)	4.4	4.4	73.2		83.6	83.6
Effective Green, g (s)	4.4	4.4	73.2		83.6	83.6
Actuated g/C Ratio	0.04	0.04	0.73		0.84	0.84
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	1.0		1.0	1.0
Lane Grp Cap (vph)	78	70	1359		557	1557
v/s Ratio Prot	c0.01	0.00	c0.40		0.00	c0.37
v/s Ratio Perm					0.03	
v/c Ratio	0.19	0.02	0.54		0.04	0.44
Uniform Delay, d1	46.1	45.7	5.9		4.3	2.1
Progression Factor	1.00	1.00	0.89		1.00	1.00
Incremental Delay, d2	1.2	0.1	1.5		0.0	0.9
Delay (s)	47.3	45.8	6.8		4.3	3.0
Level of Service	D	D	A		A	A
Approach Delay (s)	46.3		6.8			3.1
Approach LOS	D		A			A

Intersection Summary			
HCM Average Control Delay	6.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	52.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis

6: Garfield St. NW & New Mexico Ave NW

The Field School
10/26/2012



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	15	85	87	345	349	8
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	92	95	375	379	9
Pedestrians	24			3	7	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	2			0	1	
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	979	411	412			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	979	411	412			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	93	85	92			
cM capacity (veh/h)	248	627	1124			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	109	470	388			
Volume Left	16	95	0			
Volume Right	92	0	9			
cSH	510	1124	1700			
Volume to Capacity	0.21	0.08	0.23			
Queue Length 95th (ft)	20	7	0			
Control Delay (s)	14.0	2.4	0.0			
Lane LOS	B	A				
Approach Delay (s)	14.0	2.4	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay		2.8				
Intersection Capacity Utilization		58.9%		ICU Level of Service		B
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

7: W St NW & MacArthur Blvd NW

The Field School
10/26/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	0	1	8	0	43	3	972	7	32	633	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	0	1	9	0	47	3	1057	8	35	688	2
Pedestrians		7			30			1			15	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			3			0			1	
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1362	1866	353	1513	1864	577	697			1094		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1362	1866	353	1513	1864	577	697			1094		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	100	88	100	89	100			94		
cM capacity (veh/h)	87	65	639	75	66	443	890			618		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	2	55	532	536	379	346						
Volume Left	1	9	3	0	35	0						
Volume Right	1	47	0	8	0	2						
cSH	154	250	890	1700	618	1700						
Volume to Capacity	0.01	0.22	0.00	0.32	0.06	0.20						
Queue Length 95th (ft)	1	21	0	0	4	0						
Control Delay (s)	28.8	23.5	0.1	0.0	1.7	0.0						
Lane LOS	D	C	A		A							
Approach Delay (s)	28.8	23.5	0.1		0.9							
Approach LOS	D	C										
Intersection Summary												
Average Delay			1.1									
Intersection Capacity Utilization			55.9%		ICU Level of Service				B			
Analysis Period (min)			15									

APPENDIX E

BACKGROUND CAPACITY ANALYSIS RESULTS

HCM Signalized Intersection Capacity Analysis

The Field School

1: Garfield St NW & Foxhall Rd NW

10/26/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Volume (vph)	33	56	4	172	32	22	1	732	86	29	769	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			1.00			1.00	
Flpb, ped/bikes		1.00			0.99			1.00			1.00	
Frt		0.99			0.99			0.99			1.00	
Flt Protected		0.98			0.96			1.00			1.00	
Satd. Flow (prot)		1818			1761			1832			1855	
Flt Permitted		0.87			0.74			1.00			0.96	
Satd. Flow (perm)		1613			1358			1832			1776	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	36	61	4	187	35	24	1	796	93	32	836	14
RTOR Reduction (vph)	0	0	0	0	6	0	0	5	0	0	0	0
Lane Group Flow (vph)	0	101	0	0	240	0	0	885	0	0	882	0
Confl. Peds. (#/hr)			3	3			1		1	1		1
Confl. Bikes (#/hr)												1
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		16.9			16.9			45.1			45.1	
Effective Green, g (s)		16.9			16.9			45.1			45.1	
Actuated g/C Ratio		0.24			0.24			0.64			0.64	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			1.0			1.0	
Lane Grp Cap (vph)		389			328			1180			1144	
v/s Ratio Prot												
v/s Ratio Perm		0.06			0.18			0.48			0.50	
v/c Ratio		0.26			0.73			0.75			0.77	
Uniform Delay, d1		21.5			24.5			8.6			8.8	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.4			8.2			4.4			5.0	
Delay (s)		21.8			32.6			13.0			13.8	
Level of Service		C			C			B			B	
Approach Delay (s)		21.8			32.6			13.0			13.8	
Approach LOS		C			C			B			B	
Intersection Summary												
HCM Average Control Delay			16.0			HCM Level of Service				B		
HCM Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			70.0			Sum of lost time (s)			8.0			
Intersection Capacity Utilization			89.9%			ICU Level of Service				E		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

2: W St NW & Foxhall Rd NW

The Field School

10/26/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	21	4	127	6	0	10	23	798	5	6	826	89
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	4	138	7	0	11	25	867	5	7	898	97
Pedestrians					4			6				
Lane Width (ft)					12.0			12.0				
Walking Speed (ft/s)					4.0			4.0				
Percent Blockage					0			1				
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)								1067			342	
pX, platoon unblocked	0.68	0.68	0.61	0.68	0.68	0.86	0.61			0.86		
vC, conflicting volume	1890	1886	952	2030	1932	874	995			877		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1623	1617	600	1829	1684	775	670			778		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	56	93	54	67	100	97	96			99		
cM capacity (veh/h)	52	66	303	20	60	342	560			722		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	165	17	898	1001								
Volume Left	23	7	25	7								
Volume Right	138	11	5	97								
cSH	172	48	560	722								
Volume to Capacity	0.96	0.36	0.04	0.01								
Queue Length 95th (ft)	187	32	3	1								
Control Delay (s)	113.3	118.4	1.4	0.3								
Lane LOS	F	F	A	A								
Approach Delay (s)	113.3	118.4	1.4	0.3								
Approach LOS	F	F										
Intersection Summary												
Average Delay			10.7									
Intersection Capacity Utilization			75.4%		ICU Level of Service				D			
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis

3: Whitehaven Pkwy NW & Foxhall Rd NW

The Field School

10/26/2012



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	164	187	93	519	656	234
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0	5.0	5.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frpb, ped/bikes	0.99		1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.93		1.00	1.00	1.00	0.85
Flt Protected	0.98		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1671		1770	1863	1863	1549
Flt Permitted	0.98		0.27	1.00	1.00	1.00
Satd. Flow (perm)	1671		505	1863	1863	1549
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	178	203	101	564	713	254
RTOR Reduction (vph)	72	0	0	0	0	78
Lane Group Flow (vph)	309	0	101	564	713	176
Confl. Peds. (#/hr)	3	8				
Confl. Bikes (#/hr)						3
Turn Type			Perm			Perm
Protected Phases	8			6	2	
Permitted Phases			6			2
Actuated Green, G (s)	14.5		35.5	35.5	35.5	35.5
Effective Green, g (s)	14.5		35.5	35.5	35.5	35.5
Actuated g/C Ratio	0.24		0.59	0.59	0.59	0.59
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0		1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	404		299	1102	1102	916
v/s Ratio Prot	c0.18			0.30	c0.38	
v/s Ratio Perm			0.20			0.11
v/c Ratio	0.76		0.34	0.51	0.65	0.19
Uniform Delay, d1	21.2		6.3	7.2	8.1	5.6
Progression Factor	1.00		0.81	1.14	0.80	0.97
Incremental Delay, d2	8.4		1.1	0.6	2.6	0.4
Delay (s)	29.5		6.1	8.8	9.1	5.9
Level of Service	C		A	A	A	A
Approach Delay (s)	29.5			8.4	8.2	
Approach LOS	C			A	A	
Intersection Summary						
HCM Average Control Delay			12.3		HCM Level of Service	B
HCM Volume to Capacity ratio			0.68			
Actuated Cycle Length (s)			60.0		Sum of lost time (s)	10.0
Intersection Capacity Utilization			73.9%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

The Field School

4: Reservoir Rd NW & Foxhall Rd NW

10/26/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	445	89	80	205	88	95	619	335	420	507	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	4.0	6.0	6.0		4.0		6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		0.95		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.69	1.00	1.00	1.00		0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.95		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1100	1770	1863	1583		3324		1770	1849	
Flt Permitted	0.62	1.00	1.00	0.12	1.00	1.00		1.00		0.95	1.00	
Satd. Flow (perm)	1153	1863	1100	233	1863	1583		3324		1770	1849	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	20	484	97	87	223	96	103	673	364	457	551	25
RTOR Reduction (vph)	0	0	34	0	0	66	0	46	0	0	2	0
Lane Group Flow (vph)	20	484	63	87	223	30	0	1094	0	457	574	0
Confl. Peds. (#/hr)			58	58					9	9		
Confl. Bikes (#/hr)			1									2
Turn Type	Perm		Perm	pm+pt		Perm	Split			Split		
Protected Phases		4		3	8		2	2		6	6	
Permitted Phases	4		4	8		8						
Actuated Green, G (s)	28.0	28.0	28.0	38.0	38.0	38.0		37.0		29.0	29.0	
Effective Green, g (s)	28.0	28.0	28.0	38.0	38.0	38.0		37.0		29.0	29.0	
Actuated g/C Ratio	0.23	0.23	0.23	0.32	0.32	0.32		0.31		0.24	0.24	
Clearance Time (s)	6.0	6.0	6.0	4.0	6.0	6.0		4.0		6.0	6.0	
Lane Grp Cap (vph)	269	435	257	151	590	501		1025		428	447	
v/s Ratio Prot		c0.26		c0.03	0.12			c0.33		0.26	c0.31	
v/s Ratio Perm	0.02		0.06	0.15		0.02						
v/c Ratio	0.07	1.11	0.25	0.58	0.38	0.06		1.07		1.07	1.29	
Uniform Delay, d1	35.9	46.0	37.4	32.9	31.8	28.6		41.5		45.5	45.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00		0.91	0.91	
Incremental Delay, d2	0.5	77.4	2.3	15.0	1.8	0.2		47.8		58.6	141.7	
Delay (s)	36.4	123.4	39.7	47.9	33.7	28.8		89.3		100.1	183.4	
Level of Service	D	F	D	D	C	C		F		F	F	
Approach Delay (s)		107.0			35.6			89.3			146.5	
Approach LOS		F			D			F			F	
Intersection Summary												
HCM Average Control Delay			104.4			HCM Level of Service				F		
HCM Volume to Capacity ratio			1.12									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			20.0			
Intersection Capacity Utilization			103.5%			ICU Level of Service			G			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

5: Site Driveway & Foxhall Rd NW

The Field School

10/26/2012



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	24	20	775	57	57	869
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0		6.0	6.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.99		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	1843		1770	1863
Flt Permitted	0.95	1.00	1.00		0.12	1.00
Satd. Flow (perm)	1770	1583	1843		227	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	22	842	62	62	945
RTOR Reduction (vph)	0	20	3	0	0	0
Lane Group Flow (vph)	26	2	901	0	62	945
Confl. Peds. (#/hr)	1	1				
Confl. Bikes (#/hr)				2		
Turn Type		Prot			pm+pt	
Protected Phases	8	8	6		5	2
Permitted Phases					2	
Actuated Green, G (s)	4.4	4.4	26.8		43.6	43.6
Effective Green, g (s)	4.4	4.4	26.8		43.6	43.6
Actuated g/C Ratio	0.07	0.07	0.45		0.73	0.73
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	1.0		1.0	1.0
Lane Grp Cap (vph)	130	116	823		443	1354
v/s Ratio Prot	c0.01	0.00	c0.49		0.03	c0.51
v/s Ratio Perm					0.08	
v/c Ratio	0.20	0.01	1.10		0.14	0.70
Uniform Delay, d1	26.1	25.8	16.6		16.4	4.5
Progression Factor	1.00	1.00	1.02		1.00	1.00
Incremental Delay, d2	0.8	0.0	59.4		0.1	3.0
Delay (s)	26.9	25.8	76.3		16.4	7.6
Level of Service	C	C	E		B	A
Approach Delay (s)	26.4		76.3			8.1
Approach LOS	C		E			A
Intersection Summary						
HCM Average Control Delay			40.0		HCM Level of Service	D
HCM Volume to Capacity ratio			0.82			
Actuated Cycle Length (s)			60.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			63.4%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis

6: Garfield St. NW & New Mexico Ave NW

The Field School
10/26/2012



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	22	150	77	411	401	18
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	24	163	84	447	436	20
Pedestrians	18				5	
Lane Width (ft)	12.0				12.0	
Walking Speed (ft/s)	4.0				4.0	
Percent Blockage	1				0	
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1083	464	473			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1083	464	473			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	89	72	92			
cM capacity (veh/h)	217	589	1072			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	187	530	455			
Volume Left	24	84	0			
Volume Right	163	0	20			
cSH	484	1072	1700			
Volume to Capacity	0.39	0.08	0.27			
Queue Length 95th (ft)	45	6	0			
Control Delay (s)	17.1	2.1	0.0			
Lane LOS	C	A				
Approach Delay (s)	17.1	2.1	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay			3.7			
Intersection Capacity Utilization			68.6%	ICU Level of Service		C
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

7: W St NW & MacArthur Blvd NW

The Field School

10/26/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	5	1	2	9	0	25	3	844	17	61	1037	36
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	1	2	10	0	27	3	917	18	66	1127	39
Pedestrians		10			16						2	
Lane Width (ft)		12.0			12.0						12.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		1			1						0	
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1784	2248	593	1648	2258	486	1176			952		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1784	2248	593	1648	2258	486	1176			952		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	88	97	100	83	100	95	99			91		
cM capacity (veh/h)	44	36	445	57	36	519	585			708		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	9	37	462	477	630	603						
Volume Left	5	10	3	0	66	0						
Volume Right	2	27	0	18	0	39						
cSH	55	165	585	1700	708	1700						
Volume to Capacity	0.16	0.22	0.01	0.28	0.09	0.35						
Queue Length 95th (ft)	13	21	0	0	8	0						
Control Delay (s)	82.5	33.0	0.2	0.0	2.4	0.0						
Lane LOS	F	D	A		A							
Approach Delay (s)	82.5	33.0	0.1		1.3							
Approach LOS	F	D										
Intersection Summary												
Average Delay			1.6									
Intersection Capacity Utilization			69.6%		ICU Level of Service				C			
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis

The Field School

1: Garfield St NW & Foxhall Rd NW

10/26/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	31	1	83	32	25	0	724	65	8	583	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			1.00			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		1.00			0.98			0.99			1.00	
Flt Protected		0.98			0.97			1.00			1.00	
Satd. Flow (prot)		1818			1756			1838			1856	
Flt Permitted		0.88			0.82			1.00			0.99	
Satd. Flow (perm)		1629			1490			1838			1839	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	34	1	90	35	27	0	787	71	9	634	13
RTOR Reduction (vph)	0	0	0	0	13	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	60	0	0	139	0	0	855	0	0	656	0
Confl. Peds. (#/hr)	1		1	1		1	2		7	7		2
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		11.9			11.9			50.1			50.1	
Effective Green, g (s)		11.9			11.9			50.1			50.1	
Actuated g/C Ratio		0.17			0.17			0.72			0.72	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			1.0			1.0	
Lane Grp Cap (vph)		277			253			1315			1316	
v/s Ratio Prot								c0.47				
v/s Ratio Perm		0.04			c0.09						0.36	
v/c Ratio		0.22			0.55			0.65			0.50	
Uniform Delay, d1		25.0			26.6			5.3			4.4	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.4			2.4			2.5			1.4	
Delay (s)		25.4			29.0			7.8			5.7	
Level of Service		C			C			A			A	
Approach Delay (s)		25.4			29.0			7.8			5.7	
Approach LOS		C			C			A			A	
Intersection Summary												
HCM Average Control Delay		9.5			HCM Level of Service			A				
HCM Volume to Capacity ratio		0.63										
Actuated Cycle Length (s)		70.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		60.5%			ICU Level of Service			B				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

2: W St NW & Foxhall Rd NW

The Field School

10/26/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	31	4	31	1	1	8	46	743	2	4	603	49
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	34	4	34	1	1	9	50	808	2	4	655	53
Pedestrians					6			3				
Lane Width (ft)					12.0			12.0				
Walking Speed (ft/s)					4.0			4.0				
Percent Blockage					1			0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)								1067			342	
pX, platoon unblocked	0.92	0.92	0.88	0.92	0.92	0.86	0.88			0.86		
vC, conflicting volume	1609	1607	685	1644	1632	815	709			816		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1322	1320	573	1361	1347	703	600			704		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	70	97	93	99	99	98	94			99		
cM capacity (veh/h)	113	135	455	98	129	374	859			765		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	72	11	860	713								
Volume Left	34	1	50	4								
Volume Right	34	9	2	53								
cSH	177	255	859	765								
Volume to Capacity	0.40	0.04	0.06	0.01								
Queue Length 95th (ft)	45	3	5	0								
Control Delay (s)	38.4	19.8	1.5	0.2								
Lane LOS	E	C	A	A								
Approach Delay (s)	38.4	19.8	1.5	0.2								
Approach LOS	E	C										
Intersection Summary												
Average Delay			2.7									
Intersection Capacity Utilization			88.9%	ICU Level of Service					E			
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis

3: Whitehaven Pkwy NW & Foxhall Rd NW

The Field School

10/26/2012



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	77	44	92	644	544	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0	5.0	5.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frpb, ped/bikes	0.99		1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.95		1.00	1.00	1.00	0.85
Flt Protected	0.97		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1707		1763	1863	1863	1536
Flt Permitted	0.97		0.41	1.00	1.00	1.00
Satd. Flow (perm)	1707		761	1863	1863	1536
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	84	48	100	700	591	79
RTOR Reduction (vph)	24	0	0	0	0	12
Lane Group Flow (vph)	108	0	100	700	591	67
Confl. Peds. (#/hr)	1	2	3			3
Turn Type			Perm			Perm
Protected Phases	8			6	2	
Permitted Phases			6			2
Actuated Green, G (s)	11.7		78.3	78.3	78.3	78.3
Effective Green, g (s)	11.7		78.3	78.3	78.3	78.3
Actuated g/C Ratio	0.12		0.78	0.78	0.78	0.78
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0		1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	200		596	1459	1459	1203
v/s Ratio Prot	c0.06			c0.38	0.32	
v/s Ratio Perm			0.13			0.04
v/c Ratio	0.54		0.17	0.48	0.41	0.06
Uniform Delay, d1	41.6		2.7	3.8	3.4	2.5
Progression Factor	1.00		0.65	0.93	0.85	0.93
Incremental Delay, d2	3.0		0.5	0.9	0.8	0.1
Delay (s)	44.6		2.2	4.4	3.7	2.4
Level of Service	D		A	A	A	A
Approach Delay (s)	44.6			4.1	3.5	
Approach LOS	D			A	A	

Intersection Summary

HCM Average Control Delay	7.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	54.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

The Field School

4: Reservoir Rd NW & Foxhall Rd NW

10/26/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	194	55	239	466	238	126	549	120	175	645	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	4.0	6.0	6.0		4.0		6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		0.95		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00	1.00		1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99		0.95	1.00	
Satd. Flow (prot)	1770	1863	1516	1770	1863	1583		3425		1770	1854	
Flt Permitted	0.31	1.00	1.00	0.27	1.00	1.00		0.99		0.95	1.00	
Satd. Flow (perm)	585	1863	1516	511	1863	1583		3425		1770	1854	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	211	60	260	507	259	137	597	130	190	701	20
RTOR Reduction (vph)	0	0	52	0	0	181	0	14	0	0	1	0
Lane Group Flow (vph)	18	211	8	260	507	78	0	850	0	190	720	0
Confl. Peds. (#/hr)									1	1		
Confl. Bikes (#/hr)			8									2
Turn Type	Perm		Perm	pm+pt		Perm	Split			Split		
Protected Phases		4		3	8		2	2		6	6	
Permitted Phases	4		4	8		8						
Actuated Green, G (s)	13.0	13.0	13.0	30.0	30.0	30.0		35.0		19.0	19.0	
Effective Green, g (s)	13.0	13.0	13.0	30.0	30.0	30.0		35.0		19.0	19.0	
Actuated g/C Ratio	0.13	0.13	0.13	0.30	0.30	0.30		0.35		0.19	0.19	
Clearance Time (s)	6.0	6.0	6.0	4.0	6.0	6.0		4.0		6.0	6.0	
Lane Grp Cap (vph)	76	242	197	317	559	475		1199		336	352	
v/s Ratio Prot		0.11		0.11	c0.27			c0.25		0.11	c0.39	
v/s Ratio Perm	0.03		0.01	0.14		0.05						
v/c Ratio	0.24	0.87	0.04	0.82	0.91	0.16		0.71		0.57	2.05	
Uniform Delay, d1	39.0	42.7	38.0	29.3	33.7	25.8		28.1		36.8	40.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.08	1.06	
Incremental Delay, d2	7.2	32.4	0.4	20.6	20.9	0.7		3.6		6.6	480.3	
Delay (s)	46.2	75.1	38.4	49.9	54.6	26.5		31.6		46.4	523.1	
Level of Service	D	E	D	D	D	C		C		D	F	
Approach Delay (s)		65.7			46.3			31.6			423.6	
Approach LOS		E			D			C			F	
Intersection Summary												
HCM Average Control Delay		155.3					HCM Level of Service		F			
HCM Volume to Capacity ratio		1.08										
Actuated Cycle Length (s)		100.0					Sum of lost time (s)		16.0			
Intersection Capacity Utilization		110.6%					ICU Level of Service		H			
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

5: Site Driveway & Foxhall Rd NW

The Field School

10/26/2012



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	14	26	727	17	20	693
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0		6.0	6.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	1.00		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	1856		1770	1863
Flt Permitted	0.95	1.00	1.00		0.29	1.00
Satd. Flow (perm)	1770	1583	1856		538	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	28	790	18	22	753
RTOR Reduction (vph)	0	27	1	0	0	0
Lane Group Flow (vph)	15	1	807	0	22	753
Confl. Peds. (#/hr)	5	3				
Confl. Bikes (#/hr)				2		
Turn Type		Prot			pm+pt	
Protected Phases	8	8	6		5	2
Permitted Phases					2	
Actuated Green, G (s)	4.4	4.4	73.2		83.6	83.6
Effective Green, g (s)	4.4	4.4	73.2		83.6	83.6
Actuated g/C Ratio	0.04	0.04	0.73		0.84	0.84
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	1.0		1.0	1.0
Lane Grp Cap (vph)	78	70	1359		504	1557
v/s Ratio Prot	c0.01	0.00	c0.43		0.00	c0.40
v/s Ratio Perm					0.03	
v/c Ratio	0.19	0.02	0.59		0.04	0.48
Uniform Delay, d1	46.1	45.7	6.4		5.4	2.3
Progression Factor	1.00	1.00	0.81		1.00	1.00
Incremental Delay, d2	1.2	0.1	1.8		0.0	1.1
Delay (s)	47.3	45.8	7.0		5.4	3.3
Level of Service	D	D	A		A	A
Approach Delay (s)	46.3		7.0			3.4
Approach LOS	D		A			A
Intersection Summary						
HCM Average Control Delay			6.3		HCM Level of Service	A
HCM Volume to Capacity ratio			0.54			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			55.8%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis

6: Garfield St. NW & New Mexico Ave NW

The Field School
10/26/2012



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	16	90	92	352	356	9
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	17	98	100	383	387	10
Pedestrians	24			3	7	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	2			0	1	
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1005	419	421			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1005	419	421			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	93	84	91			
cM capacity (veh/h)	237	620	1116			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	115	483	397			
Volume Left	17	100	0			
Volume Right	98	0	10			
cSH	499	1116	1700			
Volume to Capacity	0.23	0.09	0.23			
Queue Length 95th (ft)	22	7	0			
Control Delay (s)	14.4	2.6	0.0			
Lane LOS	B	A				
Approach Delay (s)	14.4	2.6	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			2.9			
Intersection Capacity Utilization			60.3%		ICU Level of Service	B
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

7: W St NW & MacArthur Blvd NW

The Field School

10/26/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	0	1	8	0	45	3	991	7	34	646	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	0	1	9	0	49	3	1077	8	37	702	2
Pedestrians		7			30			1			15	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			3			0			1	
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1393	1905	360	1545	1903	587	711			1115		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1393	1905	360	1545	1903	587	711			1115		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	100	88	100	89	100			94		
cM capacity (veh/h)	82	62	632	70	62	436	879			607		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	2	58	542	546	388	353						
Volume Left	1	9	3	0	37	0						
Volume Right	1	49	0	8	0	2						
cSH	145	244	879	1700	607	1700						
Volume to Capacity	0.01	0.24	0.00	0.32	0.06	0.21						
Queue Length 95th (ft)	1	22	0	0	5	0						
Control Delay (s)	30.2	24.2	0.1	0.0	1.9	0.0						
Lane LOS	D	C	A		A							
Approach Delay (s)	30.2	24.2	0.1		1.0							
Approach LOS	D	C										
Intersection Summary												
Average Delay			1.2									
Intersection Capacity Utilization			57.9%		ICU Level of Service				B			
Analysis Period (min)			15									

APPENDIX F

TOTAL FUTURE CAPACITY ANALYSIS RESULTS

HCM Signalized Intersection Capacity Analysis

The Field School

1: Garfield St NW & Foxhall Rd NW

10/26/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Volume (vph)	33	56	4	173	32	22	1	736	87	29	777	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			1.00			1.00	
Flpb, ped/bikes		1.00			0.99			1.00			1.00	
Frt		0.99			0.99			0.99			1.00	
Flt Protected		0.98			0.96			1.00			1.00	
Satd. Flow (prot)		1818			1761			1832			1855	
Flt Permitted		0.87			0.74			1.00			0.96	
Satd. Flow (perm)		1613			1358			1831			1776	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	36	61	4	188	35	24	1	800	95	32	845	14
RTOR Reduction (vph)	0	0	0	0	6	0	0	5	0	0	0	0
Lane Group Flow (vph)	0	101	0	0	241	0	0	891	0	0	891	0
Confl. Peds. (#/hr)			3	3			1		1	1		1
Confl. Bikes (#/hr)												1
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		16.9			16.9			45.1			45.1	
Effective Green, g (s)		16.9			16.9			45.1			45.1	
Actuated g/C Ratio		0.24			0.24			0.64			0.64	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			1.0			1.0	
Lane Grp Cap (vph)		389			328			1180			1144	
v/s Ratio Prot												
v/s Ratio Perm		0.06			0.18			0.49			0.50	
v/c Ratio		0.26			0.73			0.76			0.78	
Uniform Delay, d1		21.5			24.5			8.6			8.9	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.4			8.3			4.5			5.3	
Delay (s)		21.8			32.7			13.1			14.2	
Level of Service		C			C			B			B	
Approach Delay (s)		21.8			32.7			13.1			14.2	
Approach LOS		C			C			B			B	
Intersection Summary												
HCM Average Control Delay			16.2				HCM Level of Service				B	
HCM Volume to Capacity ratio			0.77									
Actuated Cycle Length (s)			70.0				Sum of lost time (s)			8.0		
Intersection Capacity Utilization			90.3%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

2: W St NW & Foxhall Rd NW

The Field School

10/26/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	21	4	127	6	0	10	23	809	5	6	830	89
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	4	138	7	0	11	25	879	5	7	902	97
Pedestrians					4			6				
Lane Width (ft)					12.0			12.0				
Walking Speed (ft/s)					4.0			4.0				
Percent Blockage					0			1				
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)								1067			342	
pX, platoon unblocked	0.68	0.68	0.61	0.68	0.68	0.85	0.61			0.85		
vC, conflicting volume	1907	1902	957	2046	1948	886	999			889		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1608	1602	605	1813	1669	780	674			783		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	57	94	54	68	100	97	96			99		
cM capacity (veh/h)	53	68	301	20	62	336	556			709		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	165	17	910	1005								
Volume Left	23	7	25	7								
Volume Right	138	11	5	97								
cSH	173	49	556	709								
Volume to Capacity	0.95	0.36	0.04	0.01								
Queue Length 95th (ft)	184	31	4	1								
Control Delay (s)	110.0	115.1	1.4	0.3								
Lane LOS	F	F	A	A								
Approach Delay (s)	110.0	115.1	1.4	0.3								
Approach LOS	F	F										
Intersection Summary												
Average Delay			10.4									
Intersection Capacity Utilization			76.0%		ICU Level of Service				D			
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis

3: Whitehaven Pkwy NW & Foxhall Rd NW

The Field School

10/26/2012



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	164	187	93	530	660	234
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0	5.0	5.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frpb, ped/bikes	0.99		1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.93		1.00	1.00	1.00	0.85
Flt Protected	0.98		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1671		1770	1863	1863	1549
Flt Permitted	0.98		0.27	1.00	1.00	1.00
Satd. Flow (perm)	1671		500	1863	1863	1549
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	178	203	101	576	717	254
RTOR Reduction (vph)	72	0	0	0	0	77
Lane Group Flow (vph)	309	0	101	576	717	177
Confl. Peds. (#/hr)	3	8				
Confl. Bikes (#/hr)						3
Turn Type			Perm			Perm
Protected Phases	8			6	2	
Permitted Phases			6			2
Actuated Green, G (s)	14.5		35.5	35.5	35.5	35.5
Effective Green, g (s)	14.5		35.5	35.5	35.5	35.5
Actuated g/C Ratio	0.24		0.59	0.59	0.59	0.59
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0		1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	404		296	1102	1102	916
v/s Ratio Prot	c0.18			0.31	c0.38	
v/s Ratio Perm			0.20			0.11
v/c Ratio	0.76		0.34	0.52	0.65	0.19
Uniform Delay, d1	21.2		6.3	7.2	8.1	5.6
Progression Factor	1.00		0.82	1.19	0.80	0.98
Incremental Delay, d2	8.4		1.1	0.6	2.6	0.4
Delay (s)	29.5		6.2	9.2	9.1	5.9
Level of Service	C		A	A	A	A
Approach Delay (s)	29.5			8.8	8.3	
Approach LOS	C			A	A	
Intersection Summary						
HCM Average Control Delay			12.5		HCM Level of Service	B
HCM Volume to Capacity ratio			0.68			
Actuated Cycle Length (s)			60.0		Sum of lost time (s)	10.0
Intersection Capacity Utilization			74.1%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

The Field School

4: Reservoir Rd NW & Foxhall Rd NW

10/26/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	445	89	80	205	90	95	628	335	421	510	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	4.0	6.0	6.0		4.0		6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		0.95		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.69	1.00	1.00	1.00		0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.95		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1100	1770	1863	1583		3326		1770	1849	
Flt Permitted	0.62	1.00	1.00	0.12	1.00	1.00		1.00		0.95	1.00	
Satd. Flow (perm)	1153	1863	1100	233	1863	1583		3326		1770	1849	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	20	484	97	87	223	98	103	683	364	458	554	25
RTOR Reduction (vph)	0	0	34	0	0	67	0	46	0	0	2	0
Lane Group Flow (vph)	20	484	63	87	223	31	0	1104	0	458	577	0
Confl. Peds. (#/hr)			58	58					9	9		
Confl. Bikes (#/hr)			1									2
Turn Type	Perm		Perm	pm+pt		Perm	Split			Split		
Protected Phases		4		3	8		2	2		6	6	
Permitted Phases	4		4	8		8						
Actuated Green, G (s)	28.0	28.0	28.0	38.0	38.0	38.0		37.0		29.0	29.0	
Effective Green, g (s)	28.0	28.0	28.0	38.0	38.0	38.0		37.0		29.0	29.0	
Actuated g/C Ratio	0.23	0.23	0.23	0.32	0.32	0.32		0.31		0.24	0.24	
Clearance Time (s)	6.0	6.0	6.0	4.0	6.0	6.0		4.0		6.0	6.0	
Lane Grp Cap (vph)	269	435	257	151	590	501		1026		428	447	
v/s Ratio Prot		c0.26		c0.03	0.12			c0.33		0.26	c0.31	
v/s Ratio Perm	0.02		0.06	0.15		0.02						
v/c Ratio	0.07	1.11	0.25	0.58	0.38	0.06		1.08		1.07	1.29	
Uniform Delay, d1	35.9	46.0	37.4	32.9	31.8	28.6		41.5		45.5	45.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00		0.91	0.91	
Incremental Delay, d2	0.5	77.4	2.3	15.0	1.8	0.2		51.0		59.3	144.5	
Delay (s)	36.4	123.4	39.7	47.9	33.7	28.8		92.5		100.7	186.1	
Level of Service	D	F	D	D	C	C		F		F	F	
Approach Delay (s)		107.0			35.5			92.5			148.4	
Approach LOS		F			D			F			F	
Intersection Summary												
HCM Average Control Delay			106.1			HCM Level of Service				F		
HCM Volume to Capacity ratio			1.12									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			20.0			
Intersection Capacity Utilization			103.9%			ICU Level of Service			G			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

5: Site Driveway & Foxhall Rd NW

The Field School

10/26/2012



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	28	24	775	69	66	869
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0		6.0	6.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.99		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	1839		1770	1863
Flt Permitted	0.95	1.00	1.00		0.12	1.00
Satd. Flow (perm)	1770	1583	1839		228	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	26	842	75	72	945
RTOR Reduction (vph)	0	24	4	0	0	0
Lane Group Flow (vph)	30	2	913	0	72	945
Confl. Peds. (#/hr)	1	1				
Confl. Bikes (#/hr)				2		
Turn Type		Prot			pm+pt	
Protected Phases	8	8	6		5	2
Permitted Phases					2	
Actuated Green, G (s)	4.5	4.5	26.7		43.5	43.5
Effective Green, g (s)	4.5	4.5	26.7		43.5	43.5
Actuated g/C Ratio	0.08	0.08	0.44		0.72	0.72
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	1.0		1.0	1.0
Lane Grp Cap (vph)	133	119	818		443	1351
v/s Ratio Prot	c0.02	0.00	c0.50		0.03	c0.51
v/s Ratio Perm					0.09	
v/c Ratio	0.23	0.02	1.12		0.16	0.70
Uniform Delay, d1	26.1	25.7	16.7		16.5	4.6
Progression Factor	1.00	1.00	1.02		1.00	1.00
Incremental Delay, d2	0.9	0.1	67.3		0.1	3.0
Delay (s)	27.0	25.8	84.2		16.6	7.6
Level of Service	C	C	F		B	A
Approach Delay (s)	26.4		84.2			8.3
Approach LOS	C		F			A
Intersection Summary						
HCM Average Control Delay			43.8		HCM Level of Service	D
HCM Volume to Capacity ratio			0.84			
Actuated Cycle Length (s)			60.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			70.9%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis

6: Garfield St. NW & New Mexico Ave NW

The Field School
10/26/2012



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	22	151	78	411	401	18
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	24	164	85	447	436	20
Pedestrians	18				5	
Lane Width (ft)	12.0				12.0	
Walking Speed (ft/s)	4.0				4.0	
Percent Blockage	1				0	
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1085	464	473			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1085	464	473			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	89	72	92			
cM capacity (veh/h)	217	589	1072			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	188	532	455			
Volume Left	24	85	0			
Volume Right	164	0	20			
cSH	484	1072	1700			
Volume to Capacity	0.39	0.08	0.27			
Queue Length 95th (ft)	45	6	0			
Control Delay (s)	17.1	2.2	0.0			
Lane LOS	C	A				
Approach Delay (s)	17.1	2.2	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay			3.7			
Intersection Capacity Utilization	68.8%			ICU Level of Service	C	
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

7: W St NW & MacArthur Blvd NW

The Field School

10/26/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	5	1	2	9	0	26	3	844	17	62	1037	36
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	1	2	10	0	28	3	917	18	67	1127	39
Pedestrians		10			16						2	
Lane Width (ft)		12.0			12.0						12.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		1			1						0	
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1787	2250	593	1650	2260	486	1176			952		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1787	2250	593	1650	2260	486	1176			952		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	88	97	100	83	100	95	99			90		
cM capacity (veh/h)	44	36	445	57	36	519	585			708		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	9	38	462	477	631	603						
Volume Left	5	10	3	0	67	0						
Volume Right	2	28	0	18	0	39						
cSH	54	168	585	1700	708	1700						
Volume to Capacity	0.16	0.23	0.01	0.28	0.10	0.35						
Queue Length 95th (ft)	13	21	0	0	8	0						
Control Delay (s)	83.2	32.7	0.2	0.0	2.5	0.0						
Lane LOS	F	D	A		A							
Approach Delay (s)	83.2	32.7	0.1		1.3							
Approach LOS	F	D										
Intersection Summary												
Average Delay			1.6									
Intersection Capacity Utilization			69.6%	ICU Level of Service					C			
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis

The Field School

1: Garfield St NW & Foxhall Rd NW

10/26/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	31	1	83	32	25	0	727	65	8	587	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			1.00			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		1.00			0.98			0.99			1.00	
Flt Protected		0.98			0.97			1.00			1.00	
Satd. Flow (prot)		1818			1756			1838			1856	
Flt Permitted		0.88			0.82			1.00			0.99	
Satd. Flow (perm)		1631			1489			1838			1839	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	34	1	90	35	27	0	790	71	9	638	13
RTOR Reduction (vph)	0	0	0	0	13	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	60	0	0	139	0	0	858	0	0	660	0
Confl. Peds. (#/hr)	1		1	1		1	2		7	7		2
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		12.0			12.0			50.0			50.0	
Effective Green, g (s)		12.0			12.0			50.0			50.0	
Actuated g/C Ratio		0.17			0.17			0.71			0.71	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			1.0			1.0	
Lane Grp Cap (vph)		280			255			1313			1314	
v/s Ratio Prot								c0.47				
v/s Ratio Perm		0.04			c0.09						0.36	
v/c Ratio		0.21			0.54			0.65			0.50	
Uniform Delay, d1		24.9			26.5			5.4			4.5	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.4			2.4			2.5			1.4	
Delay (s)		25.3			28.9			7.9			5.8	
Level of Service		C			C			A			A	
Approach Delay (s)		25.3			28.9			7.9			5.8	
Approach LOS		C			C			A			A	
Intersection Summary												
HCM Average Control Delay		9.6			HCM Level of Service			A				
HCM Volume to Capacity ratio		0.63										
Actuated Cycle Length (s)		70.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		60.7%			ICU Level of Service			B				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

2: W St NW & Foxhall Rd NW

The Field School

10/26/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	31	4	31	1	1	8	46	747	2	4	607	49
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	34	4	34	1	1	9	50	812	2	4	660	53
Pedestrians					6			3				
Lane Width (ft)					12.0			12.0				
Walking Speed (ft/s)					4.0			4.0				
Percent Blockage					1			0				
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)								1067			342	
pX, platoon unblocked	0.92	0.92	0.88	0.92	0.92	0.86	0.88			0.86		
vC, conflicting volume	1617	1615	689	1653	1641	819	713			820		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1327	1325	576	1366	1353	706	603			707		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	70	97	93	99	99	98	94			99		
cM capacity (veh/h)	112	133	452	97	128	372	855			760		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	72	11	864	717								
Volume Left	34	1	50	4								
Volume Right	34	9	2	53								
cSH	176	252	855	760								
Volume to Capacity	0.41	0.04	0.06	0.01								
Queue Length 95th (ft)	45	3	5	0								
Control Delay (s)	39.0	19.9	1.5	0.2								
Lane LOS	E	C	A	A								
Approach Delay (s)	39.0	19.9	1.5	0.2								
Approach LOS	E	C										
Intersection Summary												
Average Delay			2.7									
Intersection Capacity Utilization			89.2%		ICU Level of Service				E			
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis

3: Whitehaven Pkwy NW & Foxhall Rd NW

The Field School

10/26/2012



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	77	44	92	648	548	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0	5.0	5.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frpb, ped/bikes	0.99		1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.95		1.00	1.00	1.00	0.85
Flt Protected	0.97		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1707		1763	1863	1863	1536
Flt Permitted	0.97		0.41	1.00	1.00	1.00
Satd. Flow (perm)	1707		756	1863	1863	1536
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	84	48	100	704	596	79
RTOR Reduction (vph)	24	0	0	0	0	12
Lane Group Flow (vph)	108	0	100	704	596	67
Confl. Peds. (#/hr)	1	2	3			3
Turn Type			Perm			Perm
Protected Phases	8			6	2	
Permitted Phases			6			2
Actuated Green, G (s)	11.7		78.3	78.3	78.3	78.3
Effective Green, g (s)	11.7		78.3	78.3	78.3	78.3
Actuated g/C Ratio	0.12		0.78	0.78	0.78	0.78
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0		1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	200		592	1459	1459	1203
v/s Ratio Prot	c0.06			c0.38	0.32	
v/s Ratio Perm			0.13			0.04
v/c Ratio	0.54		0.17	0.48	0.41	0.06
Uniform Delay, d1	41.6		2.7	3.8	3.5	2.5
Progression Factor	1.00		0.65	0.95	0.85	0.91
Incremental Delay, d2	3.0		0.5	0.9	0.8	0.1
Delay (s)	44.6		2.3	4.5	3.7	2.3
Level of Service	D		A	A	A	A
Approach Delay (s)	44.6			4.2	3.5	
Approach LOS	D			A	A	

Intersection Summary

HCM Average Control Delay	7.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	54.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

The Field School

4: Reservoir Rd NW & Foxhall Rd NW

10/26/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	194	55	239	466	239	126	552	120	176	648	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	4.0	6.0	6.0		4.0		6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		0.95		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00	1.00		1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99		0.95	1.00	
Satd. Flow (prot)	1770	1863	1516	1770	1863	1583		3426		1770	1854	
Flt Permitted	0.31	1.00	1.00	0.27	1.00	1.00		0.99		0.95	1.00	
Satd. Flow (perm)	585	1863	1516	511	1863	1583		3426		1770	1854	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	211	60	260	507	260	137	600	130	191	704	20
RTOR Reduction (vph)	0	0	52	0	0	182	0	14	0	0	1	0
Lane Group Flow (vph)	18	211	8	260	507	78	0	853	0	191	723	0
Confl. Peds. (#/hr)									1	1		
Confl. Bikes (#/hr)			8									2
Turn Type	Perm		Perm	pm+pt		Perm	Split			Split		
Protected Phases		4		3	8		2	2		6	6	
Permitted Phases	4		4	8		8						
Actuated Green, G (s)	13.0	13.0	13.0	30.0	30.0	30.0		35.0		19.0	19.0	
Effective Green, g (s)	13.0	13.0	13.0	30.0	30.0	30.0		35.0		19.0	19.0	
Actuated g/C Ratio	0.13	0.13	0.13	0.30	0.30	0.30		0.35		0.19	0.19	
Clearance Time (s)	6.0	6.0	6.0	4.0	6.0	6.0		4.0		6.0	6.0	
Lane Grp Cap (vph)	76	242	197	317	559	475		1199		336	352	
v/s Ratio Prot		0.11		0.11	c0.27			c0.25		0.11	c0.39	
v/s Ratio Perm	0.03		0.01	0.14		0.05						
v/c Ratio	0.24	0.87	0.04	0.82	0.91	0.16		0.71		0.57	2.05	
Uniform Delay, d1	39.0	42.7	38.0	29.3	33.7	25.8		28.1		36.8	40.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.08	1.05	
Incremental Delay, d2	7.2	32.4	0.4	20.6	20.9	0.7		3.6		6.6	484.0	
Delay (s)	46.2	75.1	38.4	49.9	54.6	26.5		31.7		46.3	526.6	
Level of Service	D	E	D	D	D	C		C		D	F	
Approach Delay (s)		65.7			46.3			31.7			426.4	
Approach LOS		E			D			C			F	
Intersection Summary												
HCM Average Control Delay			156.3			HCM Level of Service				F		
HCM Volume to Capacity ratio			1.08									
Actuated Cycle Length (s)			100.0			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			110.8%			ICU Level of Service			H			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

5: Site Driveway & Foxhall Rd NW

The Field School

10/26/2012



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	18	30	727	21	24	693
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0		6.0	6.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	1.00		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	1855		1770	1863
Flt Permitted	0.95	1.00	1.00		0.29	1.00
Satd. Flow (perm)	1770	1583	1855		531	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	20	33	790	23	26	753
RTOR Reduction (vph)	0	31	1	0	0	0
Lane Group Flow (vph)	20	2	812	0	26	753
Confl. Peds. (#/hr)	5	3				
Confl. Bikes (#/hr)				2		
Turn Type		Prot			pm+pt	
Protected Phases	8	8	6		5	2
Permitted Phases					2	
Actuated Green, G (s)	4.6	4.6	73.0		83.4	83.4
Effective Green, g (s)	4.6	4.6	73.0		83.4	83.4
Actuated g/C Ratio	0.05	0.05	0.73		0.83	0.83
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	1.0		1.0	1.0
Lane Grp Cap (vph)	81	73	1354		497	1554
v/s Ratio Prot	c0.01	0.00	c0.44		0.00	c0.40
v/s Ratio Perm					0.04	
v/c Ratio	0.25	0.02	0.60		0.05	0.48
Uniform Delay, d1	46.0	45.5	6.5		5.6	2.3
Progression Factor	1.00	1.00	0.81		1.00	1.00
Incremental Delay, d2	1.6	0.1	1.8		0.0	1.1
Delay (s)	47.6	45.7	7.1		5.6	3.4
Level of Service	D	D	A		A	A
Approach Delay (s)	46.4		7.1			3.5
Approach LOS	D		A			A
Intersection Summary						
HCM Average Control Delay			6.6		HCM Level of Service	A
HCM Volume to Capacity ratio			0.55			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			56.1%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis

6: Garfield St. NW & New Mexico Ave NW

The Field School
10/26/2012



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	16	90	92	352	356	9
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	17	98	100	383	387	10
Pedestrians	24			3	7	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	2			0	1	
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1005	419	421			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1005	419	421			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	93	84	91			
cM capacity (veh/h)	237	620	1116			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	115	483	397			
Volume Left	17	100	0			
Volume Right	98	0	10			
cSH	499	1116	1700			
Volume to Capacity	0.23	0.09	0.23			
Queue Length 95th (ft)	22	7	0			
Control Delay (s)	14.4	2.6	0.0			
Lane LOS	B	A				
Approach Delay (s)	14.4	2.6	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			2.9			
Intersection Capacity Utilization			60.3%		ICU Level of Service	B
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

7: W St NW & MacArthur Blvd NW

The Field School

10/26/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	0	1	8	0	45	3	991	7	34	646	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	0	1	9	0	49	3	1077	8	37	702	2
Pedestrians		7			30			1			15	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			3			0			1	
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1393	1905	360	1545	1903	587	711			1115		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1393	1905	360	1545	1903	587	711			1115		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	100	88	100	89	100			94		
cM capacity (veh/h)	82	62	632	70	62	436	879			607		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	2	58	542	546	388	353						
Volume Left	1	9	3	0	37	0						
Volume Right	1	49	0	8	0	2						
cSH	145	244	879	1700	607	1700						
Volume to Capacity	0.01	0.24	0.00	0.32	0.06	0.21						
Queue Length 95th (ft)	1	22	0	0	5	0						
Control Delay (s)	30.2	24.2	0.1	0.0	1.9	0.0						
Lane LOS	D	C	A		A							
Approach Delay (s)	30.2	24.2	0.1		1.0							
Approach LOS	D	C										
Intersection Summary												
Average Delay			1.2									
Intersection Capacity Utilization			57.9%		ICU Level of Service				B			
Analysis Period (min)			15									

APPENDIX G

MITIGATED TOTAL FUTURE CAPACITY ANALYSIS RESULTS

(AM PEAK HOUR)

HCM Signalized Intersection Capacity Analysis

The Field School

1: Garfield St NW & Foxhall Rd NW

10/26/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	33	56	4	173	32	22	1	736	87	29	777	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			1.00			1.00	
Flpb, ped/bikes		1.00			0.99			1.00			1.00	
Frt		0.99			0.99			0.99			1.00	
Flt Protected		0.98			0.96			1.00			1.00	
Satd. Flow (prot)		1818			1761			1832			1855	
Flt Permitted		0.87			0.74			1.00			0.96	
Satd. Flow (perm)		1613			1358			1831			1776	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	36	61	4	188	35	24	1	800	95	32	845	14
RTOR Reduction (vph)	0	0	0	0	6	0	0	5	0	0	0	0
Lane Group Flow (vph)	0	101	0	0	241	0	0	891	0	0	891	0
Confl. Peds. (#/hr)			3	3			1		1	1		1
Confl. Bikes (#/hr)												1
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		16.9			16.9			45.1			45.1	
Effective Green, g (s)		16.9			16.9			45.1			45.1	
Actuated g/C Ratio		0.24			0.24			0.64			0.64	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			1.0			1.0	
Lane Grp Cap (vph)		389			328			1180			1144	
v/s Ratio Prot												
v/s Ratio Perm		0.06			0.18			0.49			0.50	
v/c Ratio		0.26			0.73			0.76			0.78	
Uniform Delay, d1		21.5			24.5			8.6			8.9	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.4			8.3			4.5			5.3	
Delay (s)		21.8			32.7			13.1			14.2	
Level of Service		C			C			B			B	
Approach Delay (s)		21.8			32.7			13.1			14.2	
Approach LOS		C			C			B			B	
Intersection Summary												
HCM Average Control Delay			16.2				HCM Level of Service				B	
HCM Volume to Capacity ratio			0.77									
Actuated Cycle Length (s)			70.0				Sum of lost time (s)			8.0		
Intersection Capacity Utilization			90.3%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

2: W St NW & Foxhall Rd NW

The Field School

10/26/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	21	4	127	6	0	10	23	809	5	6	830	89
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	4	138	7	0	11	25	879	5	7	902	97
Pedestrians					4			6				
Lane Width (ft)					12.0			12.0				
Walking Speed (ft/s)					4.0			4.0				
Percent Blockage					0			1				
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)								1067			342	
pX, platoon unblocked	0.68	0.68	0.61	0.68	0.68	0.85	0.61			0.85		
vC, conflicting volume	1907	1902	957	2046	1948	886	999			889		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1608	1602	605	1813	1669	780	674			783		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	57	94	54	68	100	97	96			99		
cM capacity (veh/h)	53	68	301	20	62	336	556			709		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	165	17	910	1005								
Volume Left	23	7	25	7								
Volume Right	138	11	5	97								
cSH	173	49	556	709								
Volume to Capacity	0.95	0.36	0.04	0.01								
Queue Length 95th (ft)	184	31	4	1								
Control Delay (s)	110.0	115.1	1.4	0.3								
Lane LOS	F	F	A	A								
Approach Delay (s)	110.0	115.1	1.4	0.3								
Approach LOS	F	F										
Intersection Summary												
Average Delay			10.4									
Intersection Capacity Utilization			76.0%		ICU Level of Service				D			
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis

3: Whitehaven Pkwy NW & Foxhall Rd NW

The Field School

10/26/2012



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	164	187	93	530	660	234
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0	5.0	5.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frpb, ped/bikes	0.99		1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.93		1.00	1.00	1.00	0.85
Flt Protected	0.98		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1671		1770	1863	1863	1549
Flt Permitted	0.98		0.27	1.00	1.00	1.00
Satd. Flow (perm)	1671		500	1863	1863	1549
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	178	203	101	576	717	254
RTOR Reduction (vph)	72	0	0	0	0	77
Lane Group Flow (vph)	309	0	101	576	717	177
Confl. Peds. (#/hr)	3	8				
Confl. Bikes (#/hr)						3
Turn Type			Perm			Perm
Protected Phases	8			6	2	
Permitted Phases			6			2
Actuated Green, G (s)	14.5		35.5	35.5	35.5	35.5
Effective Green, g (s)	14.5		35.5	35.5	35.5	35.5
Actuated g/C Ratio	0.24		0.59	0.59	0.59	0.59
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0		1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	404		296	1102	1102	916
v/s Ratio Prot	c0.18			0.31	c0.38	
v/s Ratio Perm			0.20			0.11
v/c Ratio	0.76		0.34	0.52	0.65	0.19
Uniform Delay, d1	21.2		6.3	7.2	8.1	5.6
Progression Factor	1.00		0.82	1.19	0.62	0.22
Incremental Delay, d2	8.4		1.1	0.6	2.6	0.4
Delay (s)	29.5		6.2	9.2	7.7	1.7
Level of Service	C		A	A	A	A
Approach Delay (s)	29.5			8.8	6.1	
Approach LOS	C			A	A	
Intersection Summary						
HCM Average Control Delay			11.4		HCM Level of Service	B
HCM Volume to Capacity ratio			0.68			
Actuated Cycle Length (s)			60.0		Sum of lost time (s)	10.0
Intersection Capacity Utilization			74.1%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

The Field School

4: Reservoir Rd NW & Foxhall Rd NW

10/26/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	445	89	80	205	90	95	628	335	421	510	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	4.0	6.0	6.0		4.0		6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		0.95		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.69	1.00	1.00	1.00		0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.95		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1100	1770	1863	1583		3326		1770	1849	
Flt Permitted	0.62	1.00	1.00	0.12	1.00	1.00		1.00		0.95	1.00	
Satd. Flow (perm)	1153	1863	1100	233	1863	1583		3326		1770	1849	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	20	484	97	87	223	98	103	683	364	458	554	25
RTOR Reduction (vph)	0	0	34	0	0	67	0	46	0	0	2	0
Lane Group Flow (vph)	20	484	63	87	223	31	0	1104	0	458	577	0
Confl. Peds. (#/hr)			58	58					9	9		
Confl. Bikes (#/hr)			1									2
Turn Type	Perm		Perm	pm+pt		Perm	Split			Split		
Protected Phases		4		3	8		2	2		6	6	
Permitted Phases	4		4	8		8						
Actuated Green, G (s)	28.0	28.0	28.0	38.0	38.0	38.0		37.0		29.0	29.0	
Effective Green, g (s)	28.0	28.0	28.0	38.0	38.0	38.0		37.0		29.0	29.0	
Actuated g/C Ratio	0.23	0.23	0.23	0.32	0.32	0.32		0.31		0.24	0.24	
Clearance Time (s)	6.0	6.0	6.0	4.0	6.0	6.0		4.0		6.0	6.0	
Lane Grp Cap (vph)	269	435	257	151	590	501		1026		428	447	
v/s Ratio Prot		c0.26		c0.03	0.12			c0.33		0.26	c0.31	
v/s Ratio Perm	0.02		0.06	0.15		0.02						
v/c Ratio	0.07	1.11	0.25	0.58	0.38	0.06		1.08		1.07	1.29	
Uniform Delay, d1	35.9	46.0	37.4	32.9	31.8	28.6		41.5		45.5	45.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00		0.91	0.92	
Incremental Delay, d2	0.5	77.4	2.3	15.0	1.8	0.2		51.0		59.3	144.5	
Delay (s)	36.4	123.4	39.7	47.9	33.7	28.8		92.5		100.9	186.3	
Level of Service	D	F	D	D	C	C		F		F	F	
Approach Delay (s)		107.0			35.5			92.5			148.6	
Approach LOS		F			D			F			F	
Intersection Summary												
HCM Average Control Delay			106.2			HCM Level of Service				F		
HCM Volume to Capacity ratio			1.12									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			20.0			
Intersection Capacity Utilization			103.9%			ICU Level of Service			G			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

5: Site Driveway & Foxhall Rd NW

The Field School

10/26/2012

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	28	24	775	69	66	869
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0		6.0	6.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.99		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	1839		1770	1863
Flt Permitted	0.95	1.00	1.00		0.15	1.00
Satd. Flow (perm)	1770	1583	1839		271	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	26	842	75	72	945
RTOR Reduction (vph)	0	24	4	0	0	0
Lane Group Flow (vph)	30	2	913	0	72	945
Confl. Peds. (#/hr)	1	1				
Confl. Bikes (#/hr)				2		
Turn Type		Prot			pm+pt	
Protected Phases	8	8	6		5	2
Permitted Phases					2	
Actuated Green, G (s)	4.5	4.5	33.3		43.5	43.5
Effective Green, g (s)	4.5	4.5	33.3		43.5	43.5
Actuated g/C Ratio	0.08	0.08	0.55		0.72	0.72
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	1.0		1.0	1.0
Lane Grp Cap (vph)	133	119	1021		301	1351
v/s Ratio Prot	c0.02	0.00	c0.50		0.02	c0.51
v/s Ratio Perm					0.16	
v/c Ratio	0.23	0.02	0.89		0.24	0.70
Uniform Delay, d1	26.1	25.7	11.8		13.8	4.6
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.9	0.1	11.0		0.2	3.0
Delay (s)	27.0	25.8	22.8		14.0	7.6
Level of Service	C	C	C		B	A
Approach Delay (s)	26.4		22.8			8.1
Approach LOS	C		C			A
Intersection Summary						
HCM Average Control Delay			15.4		HCM Level of Service	B
HCM Volume to Capacity ratio			0.74			
Actuated Cycle Length (s)			60.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			70.9%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis

6: Garfield St. NW & New Mexico Ave NW

The Field School
10/26/2012



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	22	151	78	411	401	18
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	24	164	85	447	436	20
Pedestrians	18				5	
Lane Width (ft)	12.0				12.0	
Walking Speed (ft/s)	4.0				4.0	
Percent Blockage	1				0	
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1085	464	473			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1085	464	473			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	89	72	92			
cM capacity (veh/h)	217	589	1072			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	188	532	455			
Volume Left	24	85	0			
Volume Right	164	0	20			
cSH	484	1072	1700			
Volume to Capacity	0.39	0.08	0.27			
Queue Length 95th (ft)	45	6	0			
Control Delay (s)	17.1	2.2	0.0			
Lane LOS	C	A				
Approach Delay (s)	17.1	2.2	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay			3.7			
Intersection Capacity Utilization	68.8%			ICU Level of Service	C	
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

7: W St NW & MacArthur Blvd NW

The Field School

10/26/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	5	1	2	9	0	26	3	844	17	62	1037	36
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	1	2	10	0	28	3	917	18	67	1127	39
Pedestrians		10			16						2	
Lane Width (ft)		12.0			12.0						12.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		1			1						0	
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1787	2250	593	1650	2260	486	1176			952		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1787	2250	593	1650	2260	486	1176			952		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	88	97	100	83	100	95	99			90		
cM capacity (veh/h)	44	36	445	57	36	519	585			708		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	9	38	462	477	631	603						
Volume Left	5	10	3	0	67	0						
Volume Right	2	28	0	18	0	39						
cSH	54	168	585	1700	708	1700						
Volume to Capacity	0.16	0.23	0.01	0.28	0.10	0.35						
Queue Length 95th (ft)	13	21	0	0	8	0						
Control Delay (s)	83.2	32.7	0.2	0.0	2.5	0.0						
Lane LOS	F	D	A		A							
Approach Delay (s)	83.2	32.7	0.1		1.3							
Approach LOS	F	D										
Intersection Summary												
Average Delay			1.6									
Intersection Capacity Utilization			69.6%		ICU Level of Service				C			
Analysis Period (min)			15									