

TECHNICAL MEMORANDUM

To: Aaron Zimmerman DDOT - PPSA

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Date: September 29, 2017

Subject: 5000 14th Street NW – Supplemental Transportation Review

INTRODUCTION

This memorandum presents the findings of a supplemental transportation review for the 5000 14th Street NW development. This supplemental review serves as an addendum to the Comprehensive Transportation Review (CTR) that reviewed the transportation aspects of the projects Board of Zoning Adjustment (BZA) application (BZA Case Number 19851).

The 5000 14th Street site is currently occupied by the Kingsbury Center, which is a private school that serves students with learning differences. Currently, Kingsbury has a student enrollment of 108, ranging from kindergarten to 12th grade, and 71 staff members. The proposed plan for the site is to transition the site to the Latin American Bilingual Public Charter School (LAMB). LAMB is expected to start operating out of the 5000 14th Street site in fall of 2018, and for an interim period, both LAMB and Kingsbury will occupy the space. During the interim period, the maximum number of students that will occupy the building for both Kingsbury and LAMB will be 485 and the maximum number of faculty/staff for both schools will be 116 (175 students/80 faculty at Kingsbury; 310 students/36 faculty at LAMB). After Kingsbury has fully vacated the property, LAMB proposes to accommodate 600 students and 110 faculty/staff members.

This document was prepared in response to DDOT's request for additional study area intersections during the project's scoping process. These additional intersections could not be incorporated into the original CTR as additional traffic counts could not be collected and processed during the summer months when DC schools were not in session. Additionally, this review addresses issues identified during recent community meetings regarding pedestrian accommodations and school crossings. As such, this memorandum includes the following:

- An overview of trip generation;
- A review of the supplemental capacity analysis and results; and
- A review of potential pedestrian enhancements to serve LAMB and the adjacent West Education Campus.

The following conclusions were made regarding the 5000 14th Street NW Supplemental Transportation Review:

- Based on DDOT criteria, the proposed development is not considered to have an impact at any of the additional study area intersections.
- The Applicant is committed to coordinating the process of obtaining at least one crossing guard along the 14th Street corridor.
- Overall, this report maintains the conclusions outlined in the full CTR.

TRIP GENERATION OVERVIEW

As outlined in the full CTR, two trip generation conditions are analyzed for: (1) the interim condition when the two schools are cohabitating the building; and (2) the ultimate condition when only LAMB occupies the building. As such, trip generation was projected for each condition.

Trip generation for the Kingsbury Center was calculated based on data collection at the site driveways on Tuesday, June 6, 2017. Because the school intends to grow as part of the interim condition, the existing driveway counts were factored upwards for both the student and employees. For the purposes of factoring the existing counts, it was assumed that all pick-up/drop-off activity would account for one inbound trip and one outbound trip. As such, additional inbound trips in the morning and additional outbound trips in the afternoon were assumed to be employee trips. Trip generation for LAMB was based on information provided by the school in regard to projected student/employee mode split and start/end times, as well as comparable data from other DC area schools.

Based on this information, and the expected student and faculty populations during the interim and ultimate conditions, the trip generation for both conditions was determined. The trip generation for the interim condition, which includes the interim trip generation for LAMB and the net new trips for Kingsbury, is shown on Table 1. The trip generation for the ultimate condition, which includes the ultimate trip generation for LAMB and the removal of existing Kingsbury trips, is shown on Table 2.

Table 1: Interim Vehicular Trip Generation

User Group	Net Interim Trip Generation								
	AM Peak Hour			PM School Peak Hour			PM Commuter Peak Hour		
	IB	OB	Total	IB	OB	Total	IB	OB	Total
LAMB Students	130 v/hr	132 v/hr	263 v/hr	86 v/hr	84 v/hr	170 v/hr	37 v/hr	37 v/hr	74 v/hr
LAMB Employees	17 v/hr	0 v/hr	17 v/hr	0 v/hr	0 v/hr	0 v/hr	0 v/hr	13 v/hr	13 v/hr
Total	148 v/hr	132 v/hr	280 v/hr	86 v/hr	84 v/hr	170 v/hr	37 v/hr	50 v/hr	87 v/hr
Kingsbury Students	16 v/hr	16 v/hr	31 v/hr	11 v/hr	11 v/hr	21 v/hr	2 v/hr	2 v/hr	4 v/hr
Kingsbury Employees	3 v/hr	0 v/hr	3 v/hr	0 v/hr	3 v/hr	3 v/hr	0 v/hr	0 v/hr	0 v/hr
Total (Net New)*	19 v/hr	16 v/hr	34 v/hr	11 v/hr	14 v/hr	24 v/hr	2 v/hr	2 v/hr	4 v/hr
Total Students	146 v/hr	148 v/hr	294 v/hr	97 v/hr	95 v/hr	191 v/hr	39 v/hr	39 v/hr	78 v/hr
Total Employees	20 v/hr	0 v/hr	20 v/hr	0 v/hr	3 v/hr	3 v/hr	0 v/hr	13 v/hr	13 v/hr
Total	166 v/hr	148 v/hr	314 v/hr	97 v/hr	98 v/hr	194 v/hr	39 v/hr	52 v/hr	91 v/hr

*excludes existing Kingsbury site trips which are already accounted for in the existing traffic counts

Table 2: Combined Ultimate Vehicular Trip Generation

User Group	Net Ultimate Trip Generation								
	AM Peak Hour			PM School Peak Hour			PM Commuter Peak Hour		
	IB	OB	Total	IB	OB	Total	IB	OB	Total
LAMB Students	242 v/hr	252 v/hr	495 v/hr	163 v/hr	156 v/hr	319 v/hr	67 v/hr	67 v/hr	134 v/hr
LAMB Employees	53 v/hr	0 v/hr	53 v/hr	0 v/hr	1 v/hr	1 v/hr	0 v/hr	39 v/hr	39 v/hr
Total	295 v/hr	252 v/hr	548 v/hr	163 v/hr	157 v/hr	320 v/hr	67 v/hr	106 v/hr	173 v/hr
Kingsbury Students	-25 v/hr	-25 v/hr	-50 v/hr	-17 v/hr	-17 v/hr	-34 v/hr	-3 v/hr	-3 v/hr	-6 v/hr
Kingsbury Employees	-23 v/hr	0 v/hr	-23 v/hr	0 v/hr	-25 v/hr	-25 v/hr	0 v/hr	-3 v/hr	-3 v/hr
Total	-48 v/hr	-25 v/hr	-73 v/hr	-17 v/hr	-42 v/hr	-59 v/hr	-3 v/hr	-6 v/hr	-9 v/hr
Total Students	217 v/hr	227 v/hr	445 v/hr	146 v/hr	139 v/hr	285 v/hr	64 v/hr	64 v/hr	128 v/hr
Total Employees	30 v/hr	0 v/hr	30 v/hr	0 v/hr	-24 v/hr	-24 v/hr	0 v/hr	36 v/hr	36 v/hr
Total	247 v/hr	227 v/hr	475 v/hr	146 v/hr	115 v/hr	261 v/hr	64 v/hr	100 v/hr	164 v/hr

SUPPLEMENTAL CAPACITY ANALYSIS

This section provides a summary of an analysis of the existing and future roadway capacity at four (4) additional intersections surrounding the site, as requested by DDOT during the scoping process. Included is an analysis of potential vehicular impacts of the 5000 14th Street NW development at these intersections.

The purpose of the capacity analysis is to:

- Determine the existing capacity of the supplementary study area intersections;
- Determine the overall impact of the proposed development at the supplementary study area intersections; and
- Discuss potential improvements and mitigation measures to accommodate the additional vehicular trips, if necessary.

This analysis was accomplished by determining the traffic volumes and roadway capacity for existing conditions, background conditions, and future conditions. The capacity analysis focuses on the weekday morning commuter peak hour, afternoon school peak hour, and afternoon commuter peak hour, as determined by the existing traffic volumes in the study area and the proposed land uses of the development.

Study Area & Methodology

This section outlines the vehicular trips generated along the supplementary study area intersections and defines the analysis assumptions. The scope of the supplementary study area intersections were coordinated with DDOT. The general methodology of the analysis follows national and DDOT guidelines on the preparation of transportation impact evaluations of site development.

Capacity Analysis Scenarios

Consistent with the 5000 14th Street NW CTR submitted to DDOT on September 5, 2017, the roadway capacity analysis examined the following scenarios:

1. 2017 Existing Conditions
2. 2020 Future Conditions without the development (2020 Background Conditions)
3. 2020 Future Conditions with the Interim Conditions (2020 Interim Future Conditions)
4. 2025 Future Conditions with the Interim Conditions (2025 Background Conditions)
5. 2025 Future Conditions with the Ultimate Conditions (2025 Ultimate Future Conditions)

As stated previously, the 2020 interim future condition represents the scenario in which both LAMB and Kingsbury occupy the space and the ultimate condition represents the scenario in which Kingsbury has fully vacated the property and LAMB operates at full capacity.

Study Area

Based on scoping comments from DDOT, this supplementary analysis includes four additional intersections as outlined below:

1. 16th Street & Colorado Avenue, NW
2. 16th Street & Blagden Street, NW
3. 16th Street & Decatur Street, NW

4. 14th Street & Decatur Street, NW

The full CTR includes the capacity analysis results of the remaining 12 study area intersections. Figure 1 shows the additional study area intersections in relation to the original study area intersections included in the full CTR.

Geometry and Operations Assumptions

The following section reviews the roadway geometry and operations assumptions made and the methodologies used in the roadway capacity analyses.

Existing Geometry and Operations Assumptions

The geometry and operations assumed in the existing conditions scenario are those present when the data collection occurred. The traffic counts for the additional study area intersections were collected in September of 2017, while the traffic counts for the original study area intersections included in the full CTR were collected in June of 2017. In between these two data collection periods, Emerson Street was converted from two-way operations to one-way operations diverging from 14th Street. As such, the traffic counts for the additional study area intersections incorporate the vehicular impacts of the one-way conversion.

The lane configurations and traffic controls for the Existing Conditions are shown on Figure 2.

Background and Future Geometry and Operations Assumptions

Following national and DDOT methodologies, a background improvement must meet the following criteria to be incorporated into the analysis:

- Be funded; and
- Have a construction completion date prior or close to the proposed criteria.

Based on these criteria, and because the Emerson Street one-way conversion occurred prior to these additional traffic counts, no background improvements were included in the Background or Future Conditions. As such, the lane configurations and traffic controls shown in Figure 2 represent the Existing, Background, and Future Conditions.

Traffic Volume Assumptions

The following section reviews the traffic volume assumptions and methodologies used in the roadway capacity analyses.

Existing Traffic Volumes

The existing traffic volumes at the additional intersections are comprised of turning movement count data, which was collected on Thursday, September 14, 2017 between the hours of 6:30 and 9:30 in the morning and 2:00 and 7:00 in the afternoon/evening (in order to obtain the afternoon school peak and the afternoon commuter peak periods). The results of the traffic counts are included in the Technical Attachments. The existing peak hour traffic volumes are shown on Figure 3. For all intersections, the individual morning, afternoon school, and afternoon commuter peak hours were used.

2020 Background Traffic Volumes without the project (2020 Background)

The traffic projections for the 2020 Background conditions consist of the existing volumes with two additions:

- Traffic generated by developments expected to be completed prior to 2020 (known as background developments); and

- Inherent growth on the roadway (representing regional traffic growth).

Following national and DDOT methodologies, a background development must meet the following criteria to be incorporated into the analysis:

- Be located in the study area, defined as having an origin or destination point within the cluster of study area intersections;
- Have entitlements; and
- Have a construction completion date prior to close to the proposed development.

Based on these criteria, and consistent with the full CTR, no developments were included in the 2020 Background scenario.

While the background developments represent local traffic changes, regional traffic growth is typically accounted for using growth rates. The growth rates used in this analysis are derived using the Metropolitan Washington Council of Government’s (MWCOG) currently adopted regional transportation model, comparing the difference between the year 2017 and 2025 model scenarios. The growth rates observed in this model served as a basis for analysis assumptions, and where negative growth was observed, a conservative 0.25 percent annual growth rate was applied to the roadway. A 0.5 percent annual growth rate was applied along 16th Street for both travel directions. The applied growth rates are shown in Table 3. Additionally, a 0.25 percent per year growth rate was applied to through traffic along all other study area roadways that were not included in the MWCOG regional transportation model.

Table 3: Applied Annual and Total Growth Rates

Road & Direction of Travel	Annual Growth:		Total Growth:	
	2017 to 2025	2017 to 2020	2017 to 2025	
16th Street NW – Northbound	0.50%	1.51%	4.07%	
16th Street NW – Southbound	0.50%	1.51%	4.07%	

The traffic volumes generated by the inherent growth along the network were added to the existing traffic volumes in order to establish the 2020 Background traffic volumes. The traffic volumes for the 2020 Background conditions are shown on Figure 4.

2020 Interim Future Traffic Volumes with Interim Conditions (2020 Interim Future)

The 2020 Interim Future traffic volumes consist of the 2020 Background volumes with the addition of the traffic volumes generated by the cohabitation of the site by the Kingsbury and LAMB schools during an interim period (Interim Condition site-generated trips). Thus, the 2020 Future traffic volumes include traffic generated by: the existing volumes, the inherent growth on the study area roadways, and Interim Condition site-generated trips of the proposed project.

Trip distribution for the interim site-generated trips for students and employees was determined based on zip code/address data provided by the schools. It was found that the overall distribution of students across the region was very similar for both the Kingsbury and LAMB schools, therefore we are proposing to use the same trip distribution for Kingsbury and LAMB students. Zip code data for employees was only available for LAMB, therefore the employee trip distribution was based on the data supplied and assumed to be similar for Kingsbury employees. Inbound and outbound trip distribution is shown on Figure 5 and Figure 6, respectively.

The traffic volumes for the 2020 Interim Future conditions were calculated by adding the Interim Condition site-generated traffic volumes for the project to the 2020 Background traffic volumes. The interim site-generated traffic volumes are shown on Figure 7 and the 2020 Interim Future traffic volumes are shown on Figure 8.

2025 Background Traffic Volumes with Interim Conditions (2020 Background)

The traffic projections for the 2025 Background conditions consist of the existing volumes with three additions:

- Traffic generated by developments expected to be completed prior to 2025 (known as background developments);
- Traffic generated by the co-occupancy of the site by the Kingsbury and LAMB schools; and
- Inherent growth on the roadway (representing regional traffic growth).

Consistent with the 2020 Background conditions, no developments were included in the 2025 Background scenario and the same background growth rates, shown in Table 3, were used.

The traffic volumes generated by interim site-generated traffic volumes, and the inherent growth along the network were added to the existing traffic volumes in order to establish the 2025 Background traffic volumes. The traffic volumes for the 2025 Background conditions are shown on Figure 9.

2025 Total Future Traffic Volumes with Ultimate Conditions (2025 Ultimate Future)

The 2025 Ultimate Future traffic volumes consist of the 2025 Background volumes and ultimate condition site-generated volumes after Kingsbury has fully vacated the property and the building is fully occupied by LAMB. Thus, the 2025 Future traffic volumes include traffic generated by: the existing volumes, the inherent growth on the study area roadways, and ultimate condition site-generated traffic volumes.

Trip distribution for the total ultimate future site-generated trips is consistent with what is assumed for the interim future site-generated trips as shown on Figure 5 and Figure 6, for inbound and outbound traffic, respectively.

The traffic volumes for the 2025 Ultimate Future conditions were calculated by adding the Ultimate Future conditions site-generated traffic volumes for the project of the 2025 Background traffic volumes. The ultimate site-generated volumes are shown on Figure 10 and the 2025 Total Future traffic volumes are shown on Figure 11.

Vehicular Analysis Results

Intersection Capacity Analysis

Intersection capacity analyses were performed for the five scenarios outlined previously at the additional study area intersections during the morning commuter peak, afternoon school peak, and afternoon commuter peak hours. Synchro version 9.1 was used to analyze the study intersections based on the *Highway Capacity Manual* (HCM) 2000 methodology.

The results of the capacity analyses are expressed in level of service (LOS) and delay (seconds per vehicle) for each approach. A LOS grade is a letter grade based on the average delay (in seconds) experienced by motorists traveling through an intersection. LOS results range from “A” being the best to “F” being the worst. LOS D is typically used as the acceptable LOS threshold in the District, although LOS E or F is sometimes accepted in urbanized areas if vehicular improvements would be a detriment to safety or non-auto modes of transportation.

The LOS capacity analyses were based on: (1) the peak hour traffic volumes; (2) the lane use and traffic controls; and (3) the Highway Capacity Manual (HCM) methodologies (using *Synchro* software). The average delay of each approach and LOS is shown for the signalized intersections in addition to the overall average delay and 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. Detailed LOS descriptions and the analysis worksheets are contained in the Technical Attachments.

Table 4, Table 5, and Table 6 show the results of the capacity analyses, including LOS and average delay per vehicle (in seconds) for the morning peak hour, the afternoon school peak hour, and the afternoon commuter peak hour, respectively. The capacity analysis results are also shown on Figure 12 for the morning peak hour, Figure 13 for the afternoon school peak hour, and Figure 14 for the afternoon commuter peak hour.

The additional study intersections generally operate at acceptable conditions during the morning, afternoon school, and afternoon commuter peak hours for all study scenarios. However, one intersection has at least one approach operate under unacceptable conditions during at least one study scenario and during at least one of the peak hours:

- 16th Street & Decatur Street NW
During the morning peak hour, the westbound approach of Decatur Street operates at unacceptable levels during the 2025 Background and 2025 Ultimate Future Conditions. This can be attributed to the relatively low amount of green time allocated to Decatur Street as compared to 16th Street. This is typical along primary commuter corridors in which the minor approach is given a lower priority.

Queuing Analysis

In addition to the capacity analyses presented above, a queuing analysis was performed at the additional study area intersections. The queuing analysis was performed using Synchro software. The 50th percentile and 95th percentile queue lengths are shown for each lane group at the study area signalized intersections. The 50th percentile queue is the maximum back of queue on a median cycle. The 95th percentile queue is the maximum back of queue that is exceeded 5% of the time. For unsignalized intersection, only the 95th percentile queue is reported for each lane group (including free-flowing left turns and stop-controlled movements) based on the HCM 2000 calculations. HCM 2000 does not calculate queuing for all-way stops.

Table 7, Table 8, and Table 9 shows the queuing results for the study area intersections for the morning peak hour, the afternoon school peak hour, and the afternoon commuter peak hour, respectively. Some of the study intersections have one or more lanes group that exceed the given storage length during at least one peak hour in all of the study scenarios. Queuing issues are primarily observed along 16th Street and 14th Street lane groups. These intersections are as follows:

- 16th Street & Colorado Avenue NW
- 16th Street & Decatur Street NW
- 14th Street & Decatur Street NW

Mitigations and Improvements

Based on DDOT standards, the proposed development is considered to have an impact at an intersection within the study area if any of the following conditions are met:

- The capacity analyses show a LOS E or F at an intersection or along an approach where one does not exist in the existing or background conditions;
- There is an increase in delay at any approach or overall intersection operating under LOS E or F of greater than 5 seconds when compared to the background scenario; or

- There is an increase in the 95th percentile queues by more than 150 feet at an intersection or along an approach in the future conditions with the proposed development where one does not exist in the background scenario.

Following these guidelines, there are no development-related impacts at any of the additional study area intersections. Although this is the case, capacity concerns that arise in the 2025 Background Conditions at the intersection of 16th Street and Decatur Street NW can be improved through minor changes to signal times such that a few more seconds of green time is allocated to Decatur Street.

This report concludes that the development will not have a detrimental vehicular impact to the additional study area intersections and does not recommend any intersection mitigations to be performed by the Applicant.



Figure 1: Additional Study Area Intersections

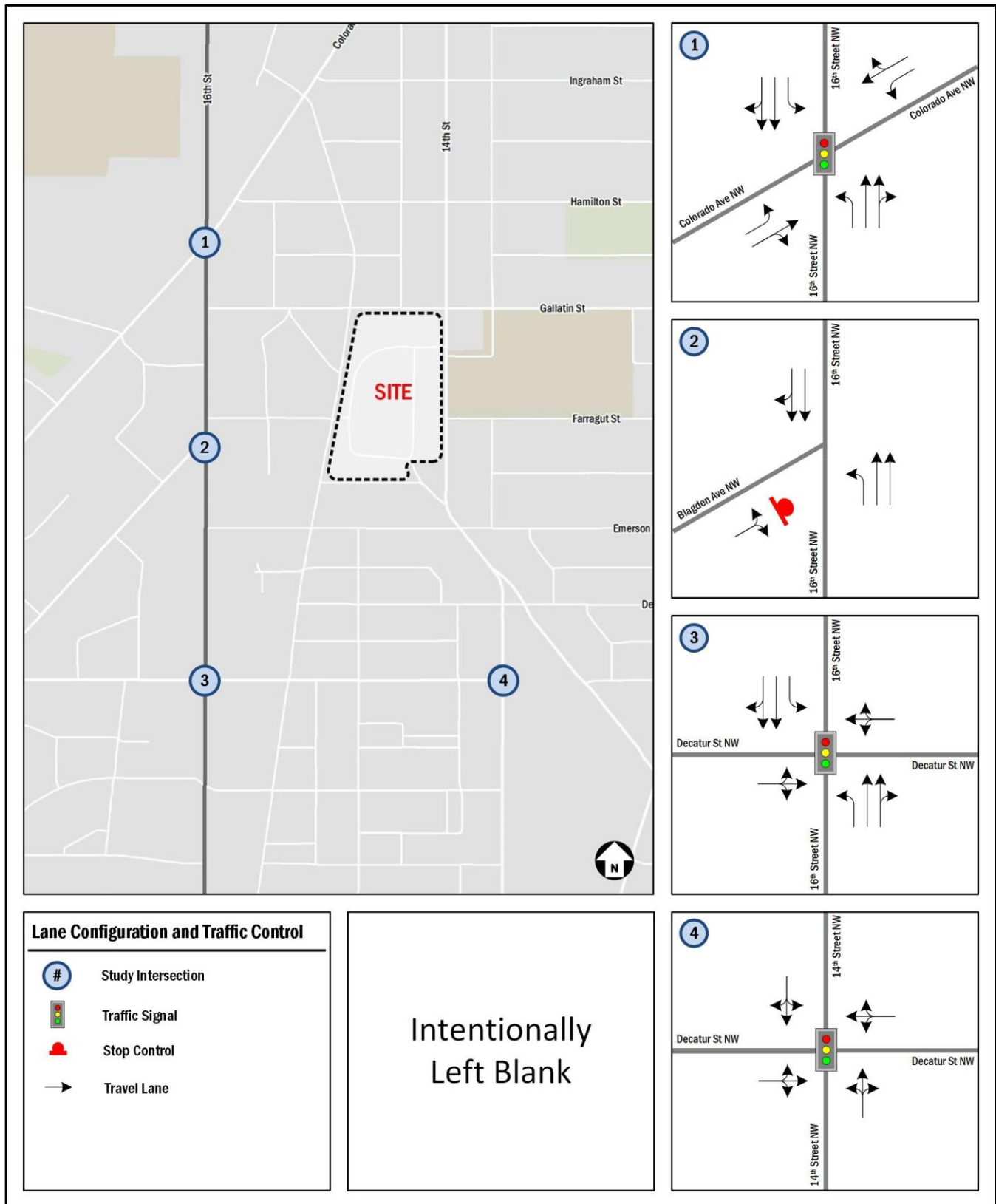


Figure 2: Existing, Background, and Future Lane Configuration and Traffic Control

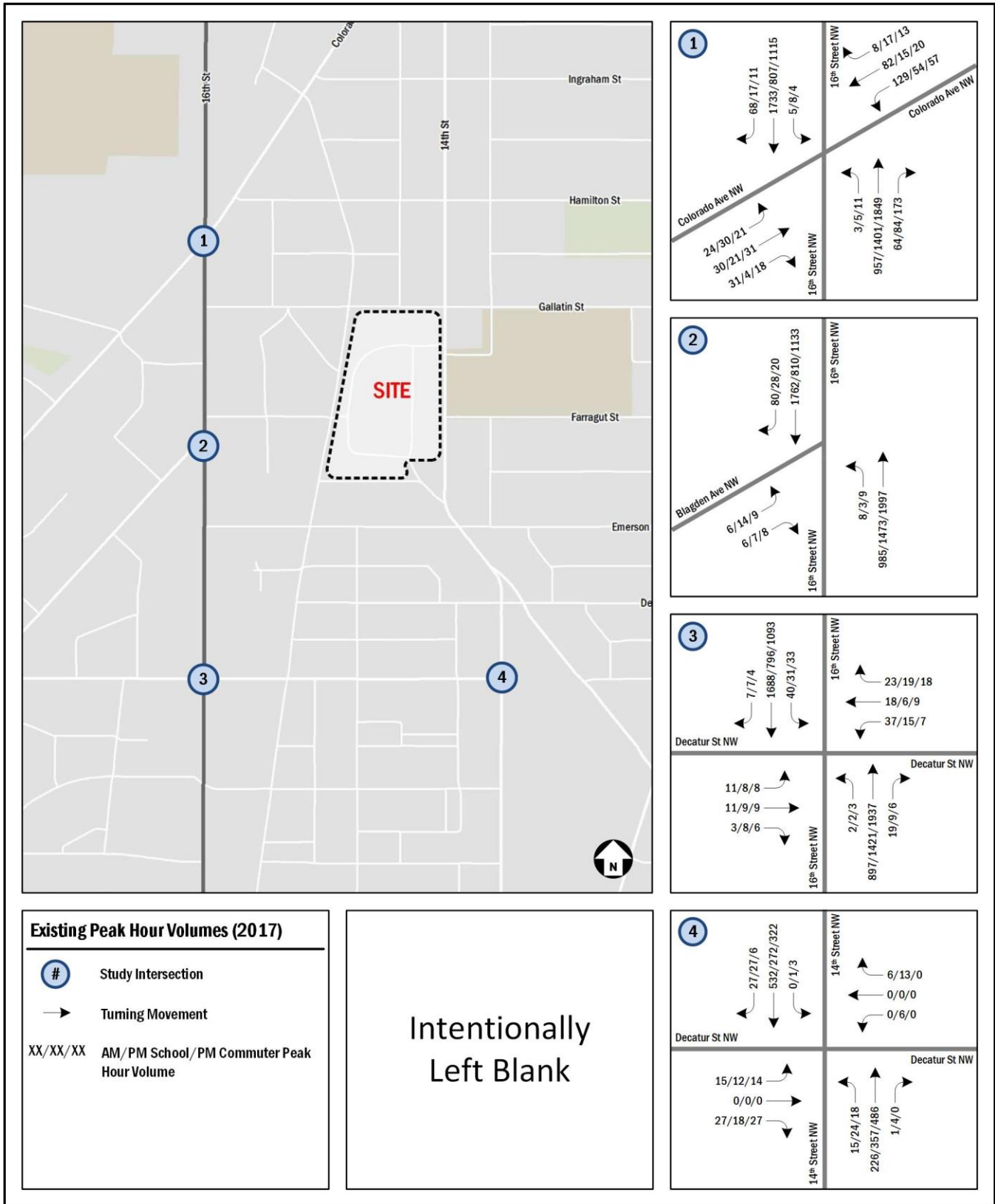


Figure 3: Existing Peak Hour Traffic Volumes

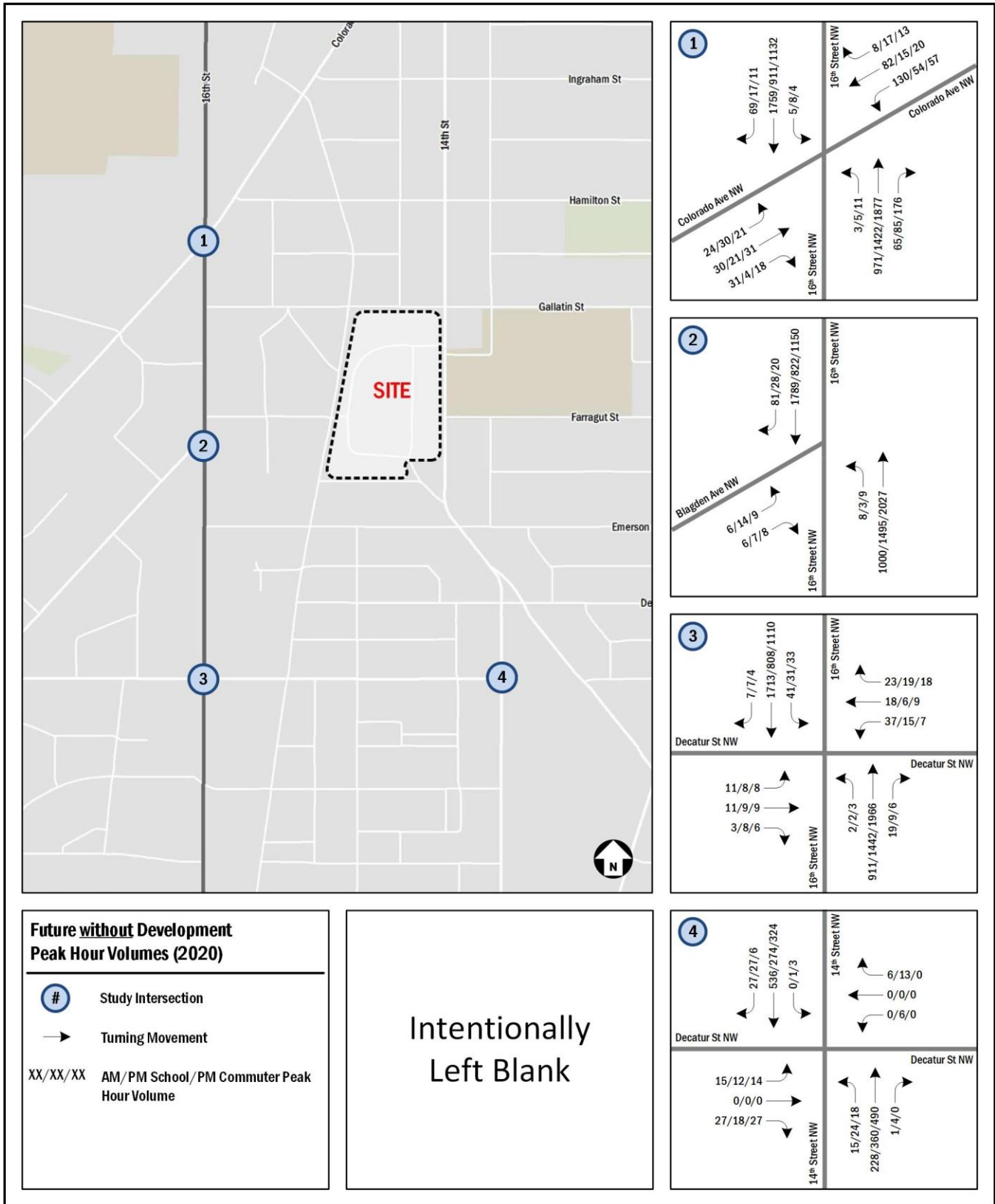


Figure 4: 2020 Background Peak Hour Traffic Volumes

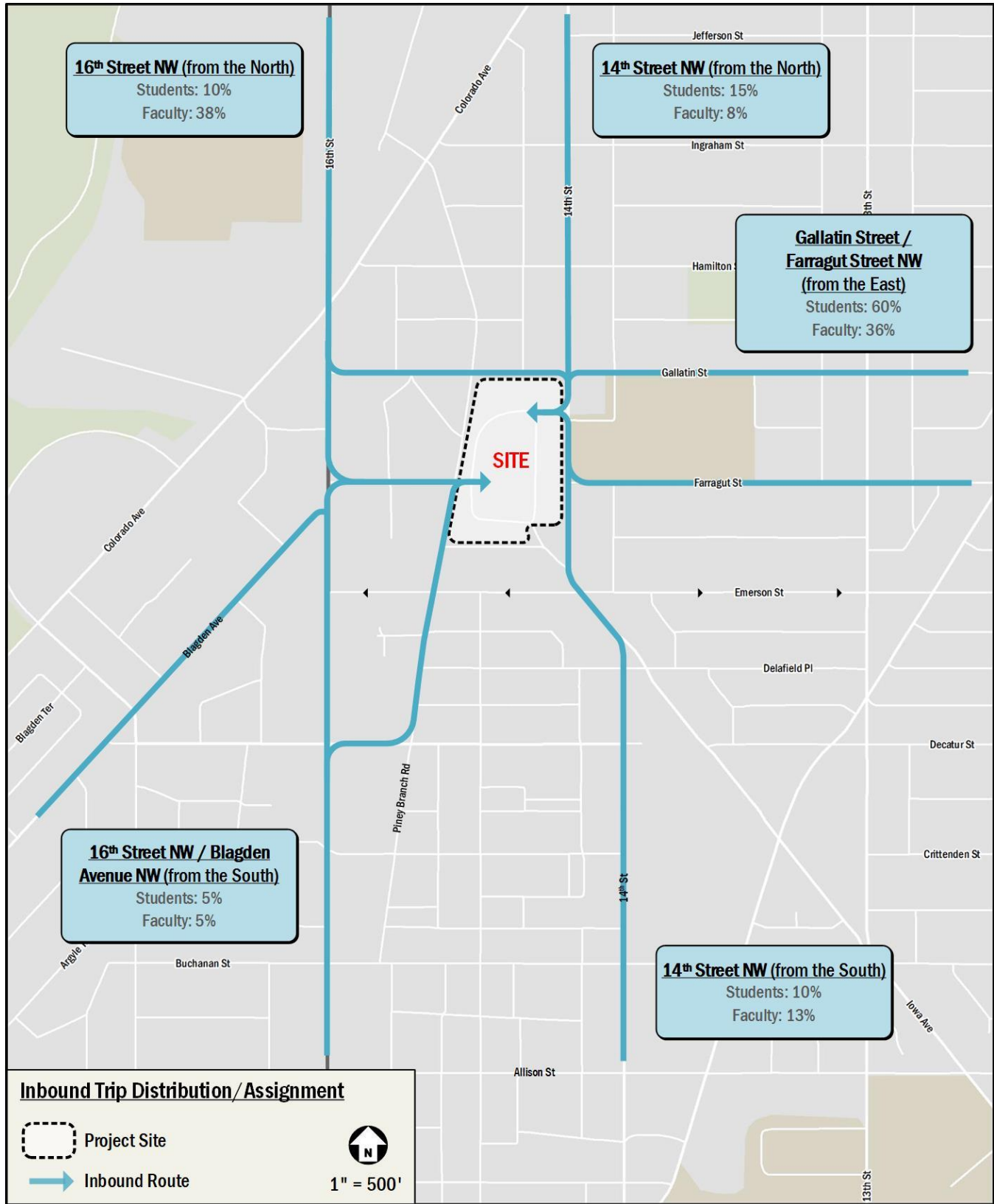


Figure 5: Inbound Trip Distribution

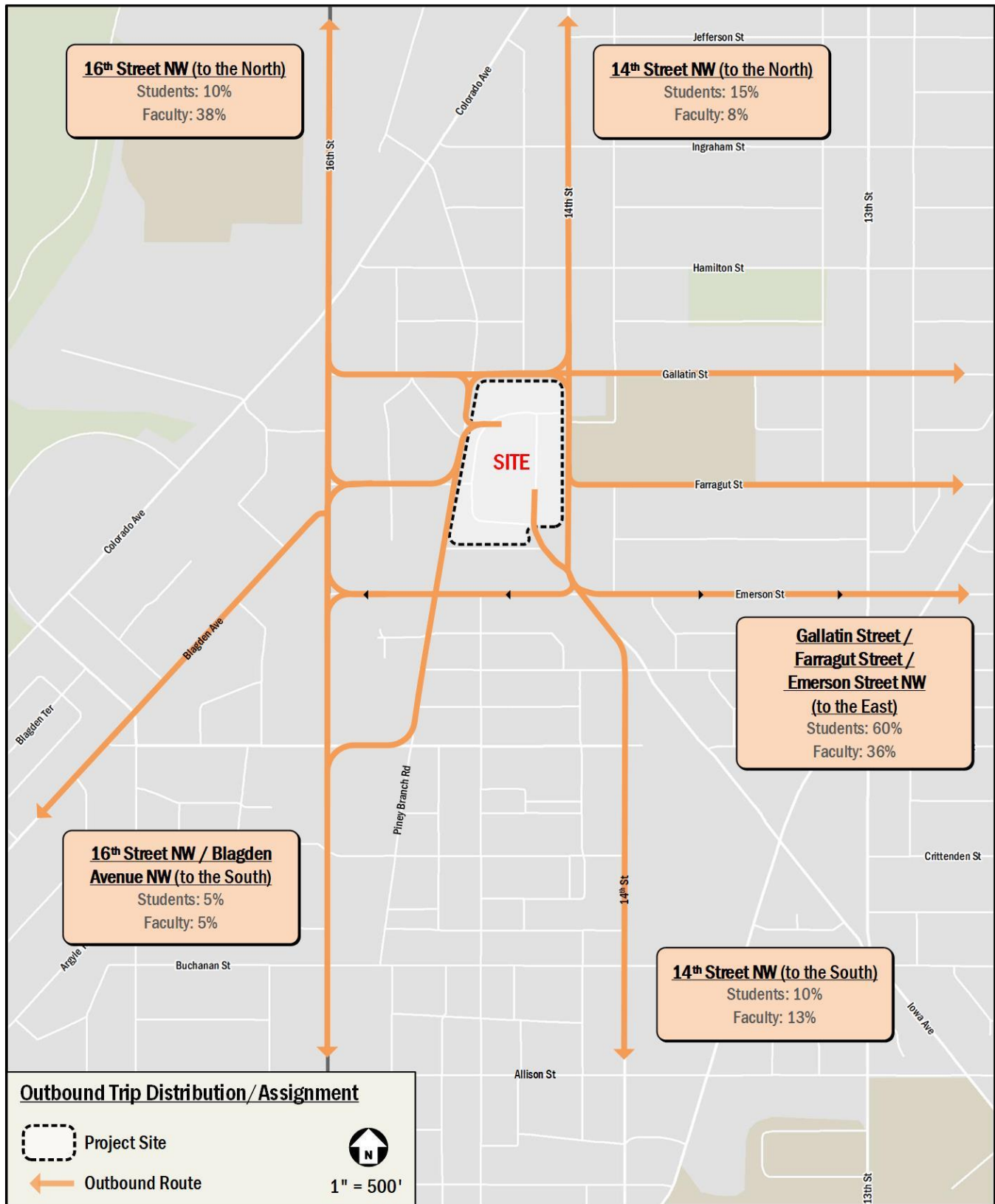


Figure 6: Outbound Trip Distribution

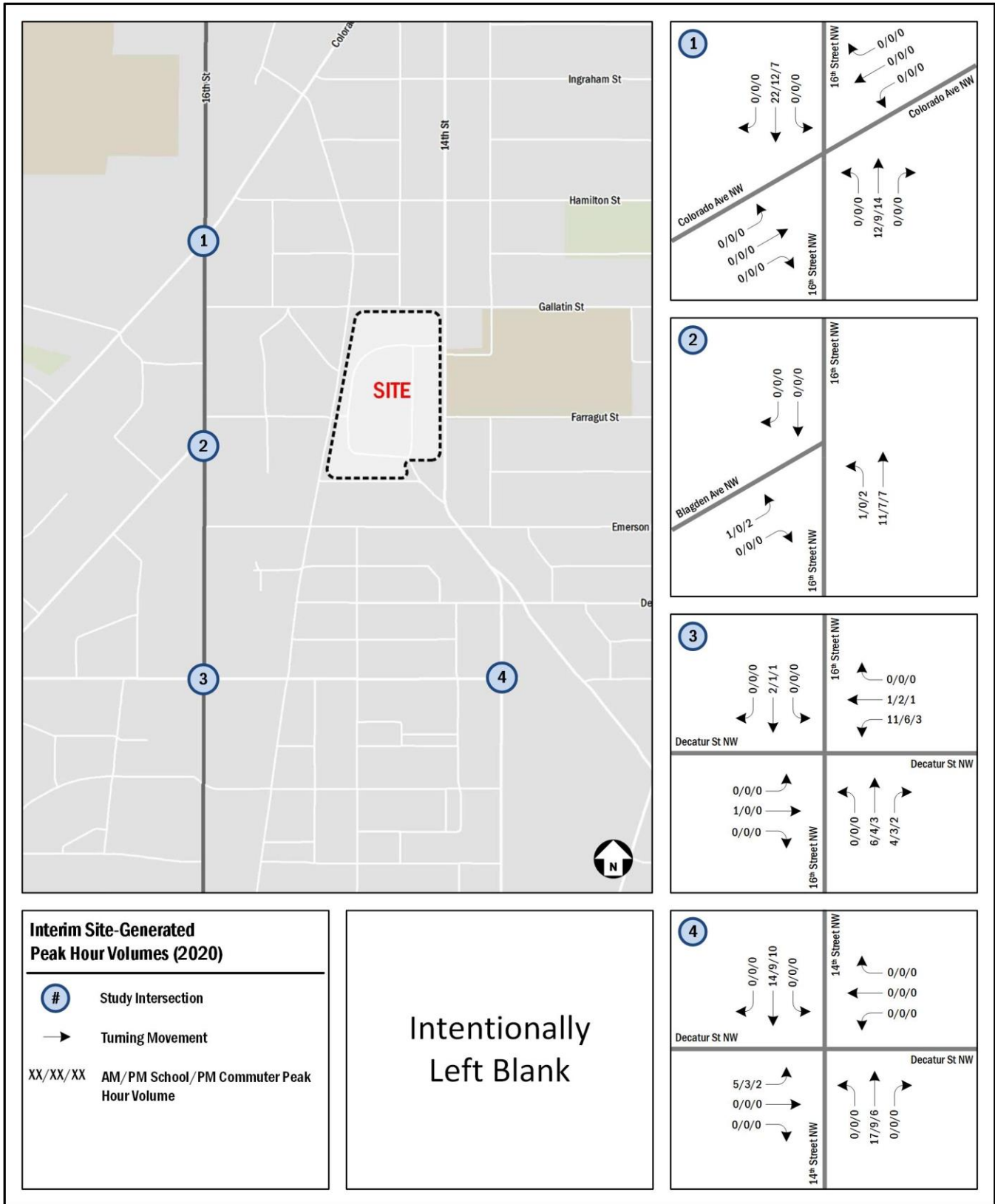


Figure 7: 2020 Site-Generated Peak Hour Traffic Volumes

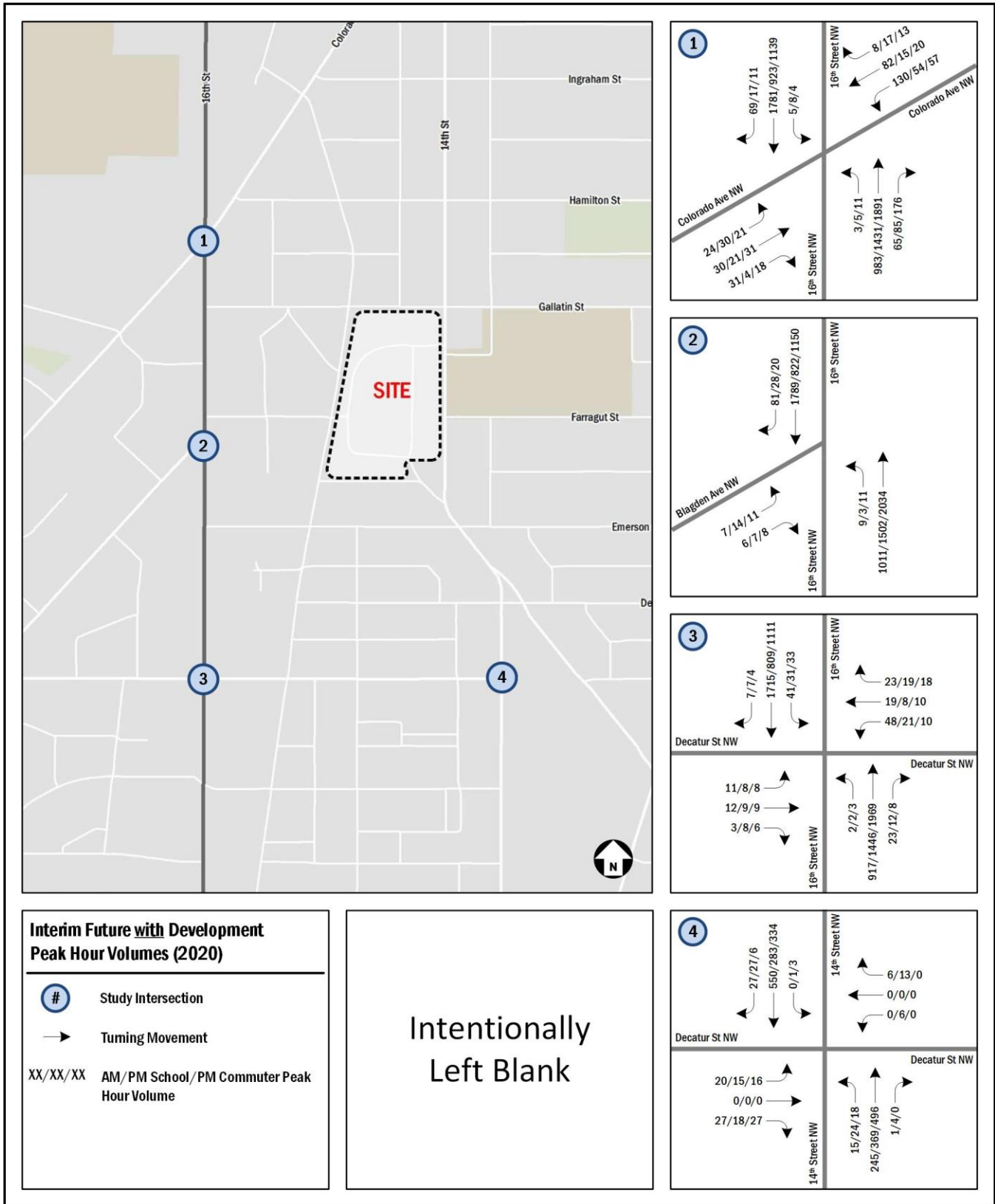


Figure 8: 2020 Interim Future Traffic Volumes with Interim Conditions Peak Hour Traffic Volumes

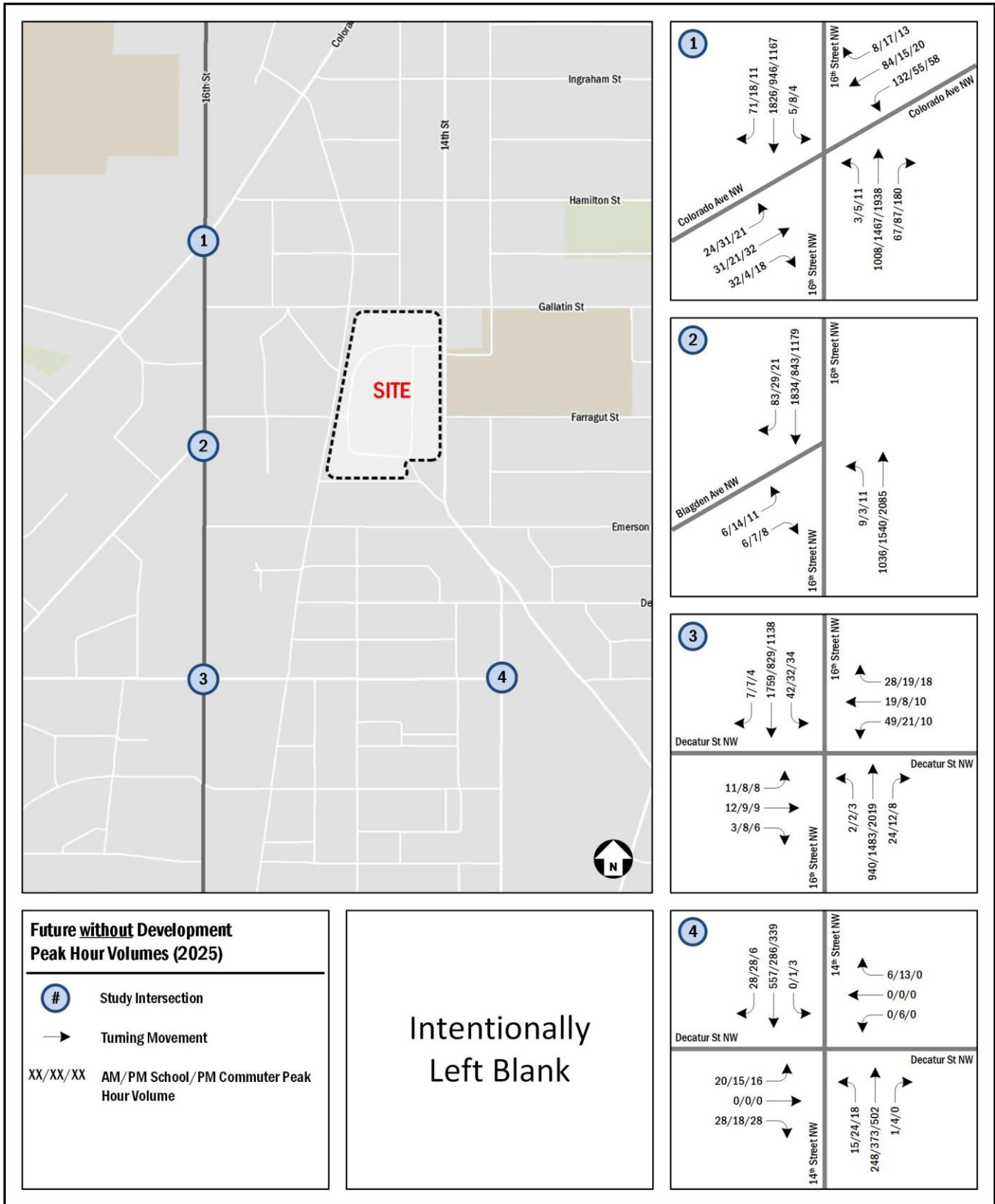


Figure 9: 2025 Background Traffic Volumes with Interim Conditions Peak Hour Traffic Volumes

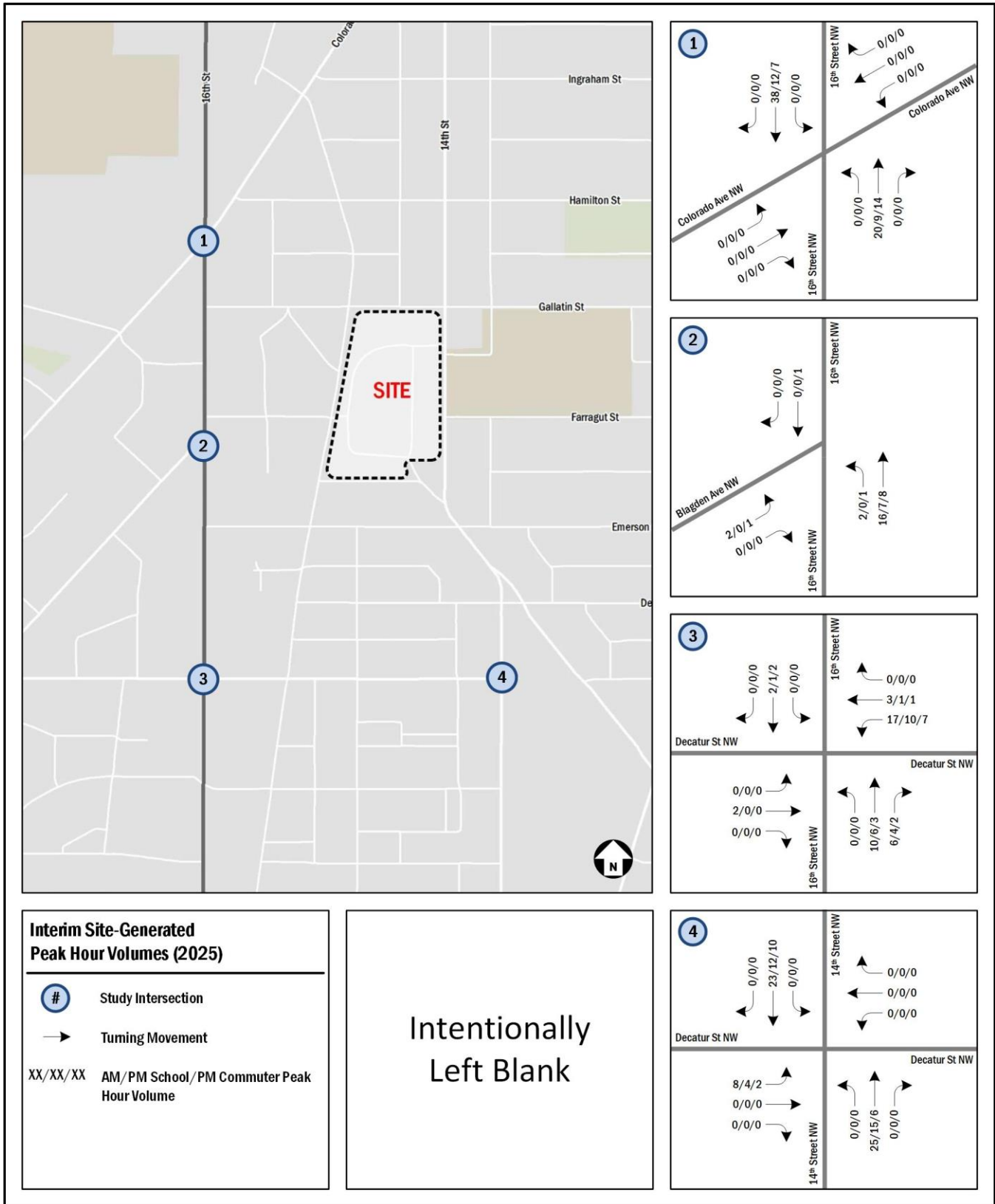


Figure 10: 2025 Site-Generated Peak Hour Traffic Volumes

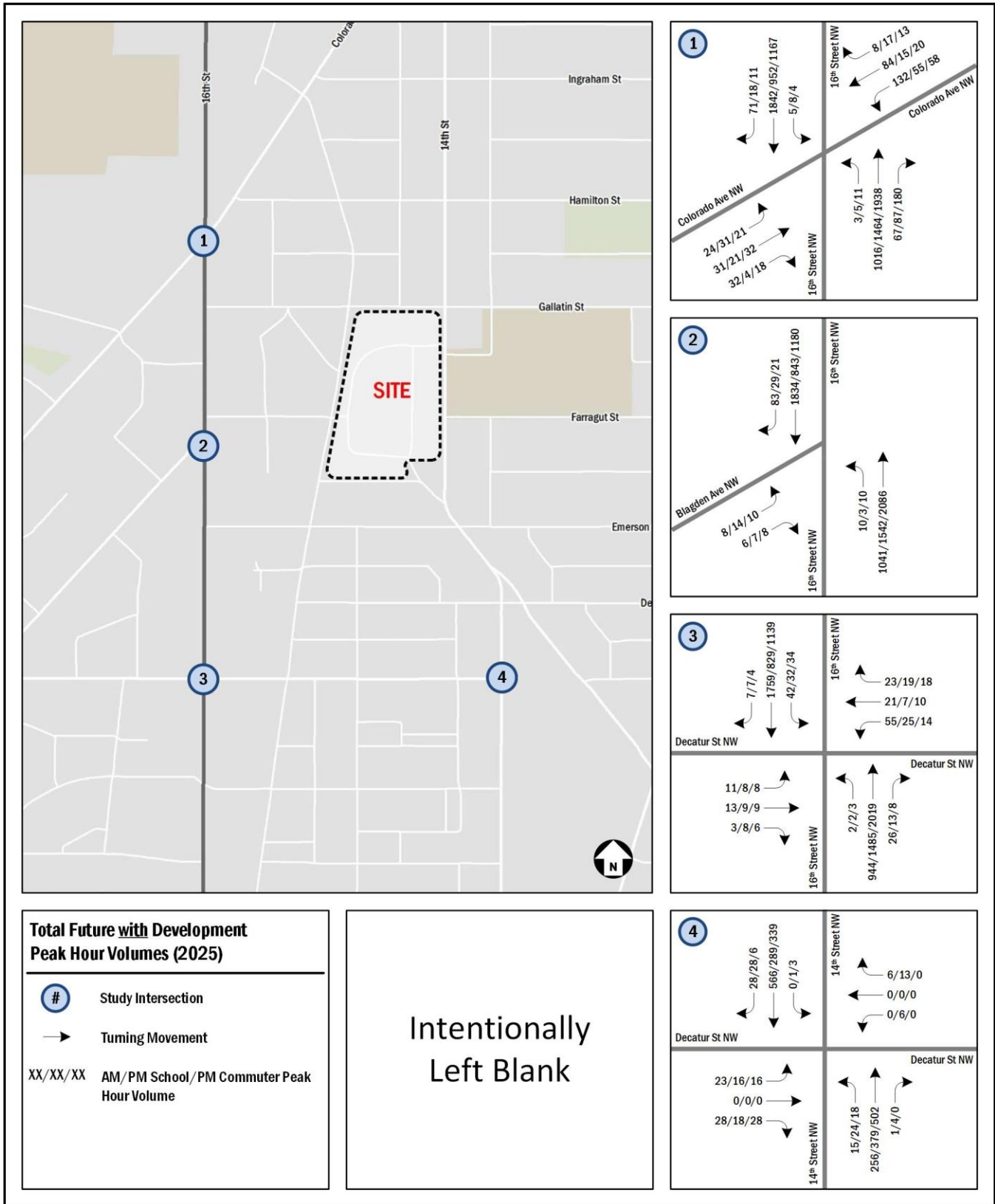


Figure 11: 2025 Ultimate Future Peak Hour Traffic Volumes

Table 4: AM Peak Hour Vehicular Capacity Analysis Results

Intersection	Approach	Existing Conditions (2017)		Future Background Conditions (2020)		Interim Future Conditions (2020)		Future Background Conditions (2025)		Ultimate Future Conditions (2025)	
		<i>AM Peak Hour</i>		<i>AM Peak Hour</i>		<i>AM Peak Hour</i>		<i>AM Peak Hour</i>		<i>AM Peak Hour</i>	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
16th Street & Colorado Avenue NW	Overall	26.6	C	27.3	C	27.8	C	29.2	C	29.8	C
	NB 16th St	27.5	C	27.7	C	27.7	C	28.1	C	28.2	C
	SB 16th St	24.3	C	25.3	C	26.3	C	28.6	C	29.5	C
	NEB Colorado Ave	33.0	C	33.1	C	33.1	C	33.2	C	33.2	C
	SWB Colorado Ave	37.6	D	37.7	D	37.7	D	37.8	D	37.8	D
16th Street & Blagden Avenue NW	NB 16th St	0.1	A	0.1	A	0.1	A	0.1	A	0.1	A
	NEB Blagden Ave	30.2	D	30.4	D	31.0	D	31.1	D	31.6	D
16th Street & Decatur Street NW	Overall	6.2	A	6.2	A	6.4	A	6.7	A	6.7	A
	EB Decatur St	42.6	D	42.6	D	42.7	D	42.7	D	42.8	D
	WB Decatur St	53.9	D	54.1	D	54.6	D	55.3	E	55.9	E
	NB 16th St	6.3	A	6.4	A	6.4	A	6.5	A	6.6	A
	SB 16th St	3.2	A	3.3	A	3.2	A	3.3	A	3.3	A
14th Street & Decatur Street NW	Overall	11.9	B	11.9	B	12.2	A	12.3	B	12.5	B
	EB Decatur St	27.1	C	27.4	C	28.1	C	28.2	C	28.5	C
	WB Decatur St	34.3	C	34.3	C	34.2	C	34.3	C	34.3	C
	NB 14th St	8.5	A	8.5	A	8.6	A	8.7	A	8.7	A
	SB 14th St	11.8	B	11.9	B	12.1	B	12.3	B	12.4	B

Table 5: PM School Peak Hour Vehicular Capacity Analysis Results

Intersection	Approach	Existing Conditions (2017)		Future Background Conditions (2020)		Interim Future Conditions (2020)		Future Background Conditions (2025)		Ultimate Future Conditions (2025)	
		<i>PM School Peak Hour</i>		<i>PM School Peak Hour</i>		<i>PM School Peak Hour</i>		<i>PM School Peak Hour</i>		<i>PM School Peak Hour</i>	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
16th Street & Colorado Avenue NW	Overall	13.3	B	13.6	B	13.7	B	14.1	B	14.0	B
	NB 16th St	12.1	B	12.5	B	12.7	B	13.3	B	13.1	B
	SB 16th St	11.7	B	12.3	B	12.3	B	12.5	B	12.5	B
	NEB Colorado Ave	32.9	C	32.9	C	32.9	C	32.9	C	32.9	C
	SWB Colorado Ave	33.4	C	33.4	C	33.4	C	33.4	C	33.4	C
16th Street & Blagden Avenue NW	NB 16th St	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
	NEB Blagden Ave	16.4	C	15.8	C	15.7	C	15.6	C	15.5	C
16th Street & Decatur Street NW	Overall	8.5	A	8.6	A	8.8	A	9.0	A	9.0	A
	EB Decatur St	42.4	D	42.4	D	42.4	D	42.4	D	42.4	D
	WB Decatur St	35.9	D	36.0	D	36.8	D	37.1	D	37.4	D
	NB 16th St	8.9	A	9.0	A	9.1	A	9.4	A	9.4	A
	SB 16th St	5.3	A	5.4	A	5.4	A	5.5	A	5.5	A
14th Street & Decatur Street NW	Overall	8.1	A	8.1	A	8.3	A	8.2	A	8.2	A
	EB Decatur St	43.5	D	43.6	D	42.4	D	41.4	D	40.9	D
	WB Decatur St	43.3	D	43.3	D	43.3	D	43.3	D	43.3	D
	NB 14th St	6.0	A	6.0	A	6.1	A	6.1	A	6.1	A
	SB 14th St	5.2	A	5.2	A	5.3	A	5.3	A	5.3	A

Table 6: PM Commuter Peak Hour Vehicular Capacity Analysis Results

Intersection	Approach	Existing Conditions (2017)		Future Background Conditions (2020)		Interim Future Conditions (2020)		Future Background Conditions (2025)		Ultimate Future Conditions (2025)	
		PM Commuter Peak Hour		PM Commuter Peak Hour		PM Commuter Peak Hour		PM Commuter Peak Hour		PM Commuter Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
16th Street & Colorado Avenue NW	Overall	18.9	B	20.1	C	20.9	C	24.0	C	24.0	C
	NB 16th St	20.6	C	22.5	C	23.8	C	28.8	C	28.8	C
	SB 16th St	13.8	B	14.0	B	14.0	B	14.2	B	14.2	B
	NEB Colorado Ave	33.0	C	33.0	C	33.0	C	33.0	C	33.0	C
	SWB Colorado Ave	33.9	C	33.9	C	33.9	C	34.0	C	34.0	C
16th Street & Blagden Avenue NW	NB 16th St	0.0	A	0.0	A	0.1	A	0.1	A	0.1	A
	NEB Blagden Ave	13.6	B	11.1	B	11.5	B	12.4	B	12.3	B
16th Street & Decatur Street NW	Overall	10.3	B	10.6	B	10.7	B	11.2	B	11.3	B
	EB Decatur St	42.3	D	42.3	D	42.3	D	42.3	D	42.3	D
	WB Decatur St	38.0	D	38.0	D	38.8	D	38.6	D	39.2	D
	NB 16th St	11.2	B	11.5	B	11.5	B	12.1	B	12.1	B
	SB 16th St	7.2	A	7.5	A	7.5	A	8.2	A	8.2	A
14th Street & Decatur Street NW	Overall	7.9	A	7.9	A	8.0	A	8.0	A	8.0	A
	EB Decatur St	47.7	D	47.9	D	47.1	D	45.9	D	46.0	D
	WB Decatur St	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
	NB 14th St	6.2	A	6.2	A	6.2	A	6.3	A	6.3	A
	SB 14th St	5.2	A	5.2	A	5.3	A	5.3	A	5.3	A

Table 7: AM Peak Hour Queuing Analysis Results

Intersection	Lane Group	Storage Length (ft)	Existing Conditions (2017)		Future Background Conditions (2020)		Interim Future Conditions (2020)		Future Background Conditions (2025)		Ultimate Future Conditions (2025)	
			AM Peak		AM Peak		AM Peak		AM Peak		AM Peak	
			50th %	95th %	50th %	95th %	50th %	95th %	50th %	95th %	50th %	95th %
16th Street & Colorado Ave NW	NB Left 16th St	80	1	m4	1	m4	1	m3	1	m3	1	m3
	NB TR 16th St	150	380	463	388	474	393	480	408	498	412	503
	SB Left 16th St	50	1	7	1	7	1	1	1	7	1	7
	SB TR 16th St	1230	600	729	621	754	638	776	675	#834	690	#871
	NEB Left Colorado	100	16	39	16	39	16	39	16	39	16	39
	NEB TR Colorado	1400	31	64	31	65	32	65	34	69	35	69
	SWB Left Colorado	70	97	153	98	153	98	153	99	155	99	155
	SWB TR Colorado	70	60	101	60	101	60	101	62	105	62	105
16th Street & Blagden Ave NW	NB 16th St	190	--	2	--	2	--	2	--	2	--	2
	NEB Blagden Ave	910	--	7	--	7	--	8	--	8	--	9
16th Street & Decatur Street NW	EB LTR Decatur St	590	17	43	17	43	18	44	18	44	19	45
	WB LTR Decatur St	215	50	95	50	95	61	109	65	116	71	123
	NB Left 16th St	60	0	2	0	3	0	3	0	3	0	3
	NB TR 16th St	285	142	160	145	163	147	166	153	171	155	173
	SB Left 16th St	60	1	m2	1	m2	1	m2	1	m2	1	m2
	SB TR 16th St	460	16	87	16	93	16	92	16	m104	16	m98
14th Street & Decatur Street NW	EB LTR Decatur St	435	9	37	9	38	12	43	12	43	14	47
	WB LTR Decatur St	30	0	0	0	0	0	0	0	0	0	0
	NB LTR 14th St	325	73	111	74	112	80	121	81	122	84	126
	SB LTR 14th St	200	226	309	228	312	238	324	243	330	248	338

m - Volume for 95th percentile queue is metered by upstream signal.

- 95th percentile volume exceeds capacity; queue may be longer.

Table 8: PM School Peak Hour Queuing Analysis Results

Intersection	Lane Group	Storage Length (ft)	Existing Conditions (2017)		Future Background Conditions (2020)		Interim Future Conditions (2020)		Future Background Conditions (2025)		Ultimate Future Conditions (2025)	
			PM School Peak		PM School Peak		PM School Peak		PM School Peak		PM School Peak	
			50th %	95th %	50th %	95th %	50th %	95th %	50th %	95th %	50th %	95th %
16th Street & Colorado Ave NW	NB Left 16th St	80	1	m2	1	m2	1	m2	1	m2	1	m2
	NB TR 16th St	150	157	163	159	166	161	168	165	171	164	172
	SB Left 16th St	50	2	11	2	11	2	12	2	12	2	12
	SB TR 16th St	1230	159	199	187	231	190	236	197	244	199	246
	NEB Left Colorado	100	20	45	20	45	20	45	21	46	21	46
	NEB TR Colorado	1400	14	36	14	36	14	36	14	36	14	36
	SWB Left Colorado	70	38	71	38	71	38	71	38	72	38	72
	SWB TR Colorado	70	10	35	10	35	10	35	10	35	10	35
16th Street & Blagden Ave NW	NB 16th St	190	--	0	--	0	--	0	--	0	--	0
	NEB Blagden Ave	910	--	6	--	5	--	5	--	5	--	5
16th Street & Decatur Street NW	EB LTR Decatur St	590	13	38	13	38	13	38	13	38	13	38
	WB LTR Decatur St	215	11	31	11	31	15	37	15	37	16	39
	NB Left 16th St	60	0	2	0	2	0	2	0	2	0	2
	NB TR 16th St	285	293	315	302	323	304	325	319	341	321	342
	SB Left 16th St	60	6	20	6	m21	7	m20	7	m28	7	m25
	SB TR 16th St	460	95	118	98	122	99	122	102	126	102	126
14th Street & Decatur Street NW	EB LTR Decatur St	435	13	m34	13	m33	15	m35	15	m33	16	m33
	WB LTR Decatur St	30	3	25	3	25	3	25	3	25	3	25
	NB LTR 14th St	325	103	136	105	137	108	142	109	144	112	146
	SB LTR 14th St	200	71	96	72	97	75	101	76	102	77	104

m - Volume for 95th percentile queue is metered by upstream signal.

- 95th percentile volume exceeds capacity; queue may be longer.

Table 9: PM Commuter Peak Hour Queueing Analysis Results

Intersection	Lane Group	Storage Length (ft)	Existing Conditions (2017)		Future Background Conditions (2020)		Interim Future Conditions (2020)		Future Background Conditions (2025)		Ultimate Future Conditions (2025)	
			PM Commuter Peak		PM Commuter Peak		PM Commuter Peak		PM Commuter Peak		PM Commuter Peak	
			50th %	95th %	50th %	95th %	50th %	95th %	50th %	95th %	50th %	95th %
16th Street & Colorado Ave NW	NB Left 16th St	80	2	m3	2	m3	2	m3	2	m3	2	m3
	NB TR 16th St	150	736	#980	765	#1006	777	#1018	840	#1056	838	#1056
	SB Left 16th St	50	1	7	1	7	1	7	1	7	1	7
	SB TR 16th St	1230	262	320	267	326	271	330	281	342	281	342
	NEB Left Colorado	100	14	36	14	36	14	36	14	36	14	36
	NEB TR Colorado	1400	21	51	21	51	21	51	22	52	22	52
	SWB Left Colorado	70	39	75	39	75	39	75	40	77	40	77
	SWB TR Colorado	70	13	39	13	39	13	39	14	41	14	41
16th Street & Blagden Ave NW	NB 16th St	190	--	1	--	1	--	1	--	1	--	1
	NEB Blagden Ave	910	--	4	--	3	--	3	--	3	--	3
16th Street & Decatur Street NW	EB LTR Decatur St	590	13	38	13	38	13	38	13	38	13	38
	WB LTR Decatur St	215	8	30	8	30	10	36	10	36	13	40
	NB Left 16th St	60	1	3	1	3	1	3	1	3	1	3
	NB TR 16th St	285	412	498	426	515	429	520	455	553	455	553
	SB Left 16th St	60	8	m32	8	m33	8	m33	9	m37	9	m37
	SB TR 16th St	460	147	232	151	243	151	247	156	266	156	266
14th Street & Decatur Street NW	EB LTR Decatur St	435	19	m32	19	m33	20	m36	17	m34	17	m34
	WB LTR Decatur St	30	0	0	0	0	0	0	0	0	0	0
	NB LTR 14th St	325	126	177	128	178	130	182	132	185	132	185
	SB LTR 14th St	200	77	111	77	112	80	115	82	118	82	118

m - Volume for 95th percentile queue is metered by upstream signal.

- 95th percentile volume exceeds capacity; queue may be longer.

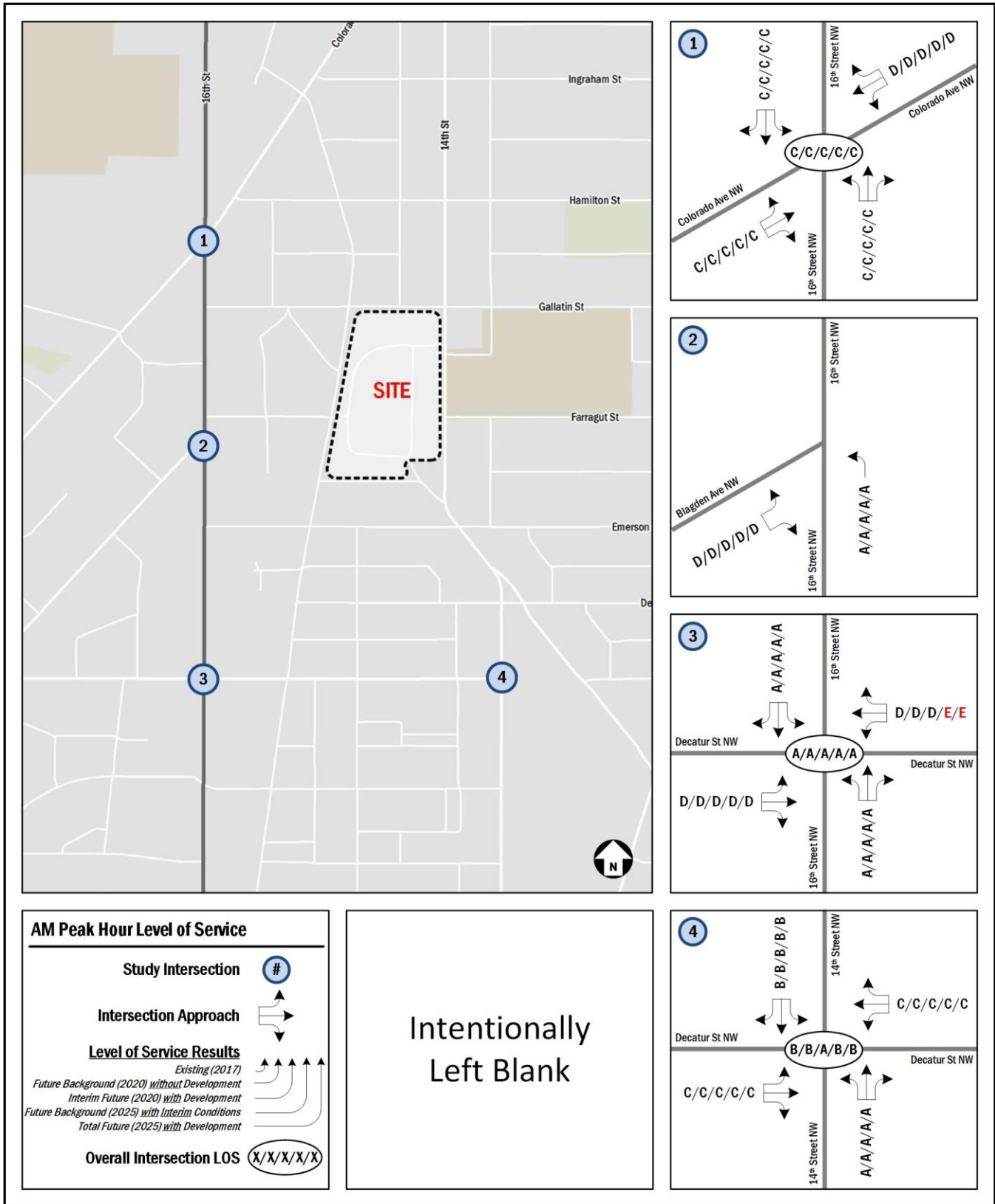


Figure 12: Morning Peak Hour Capacity Analysis Results

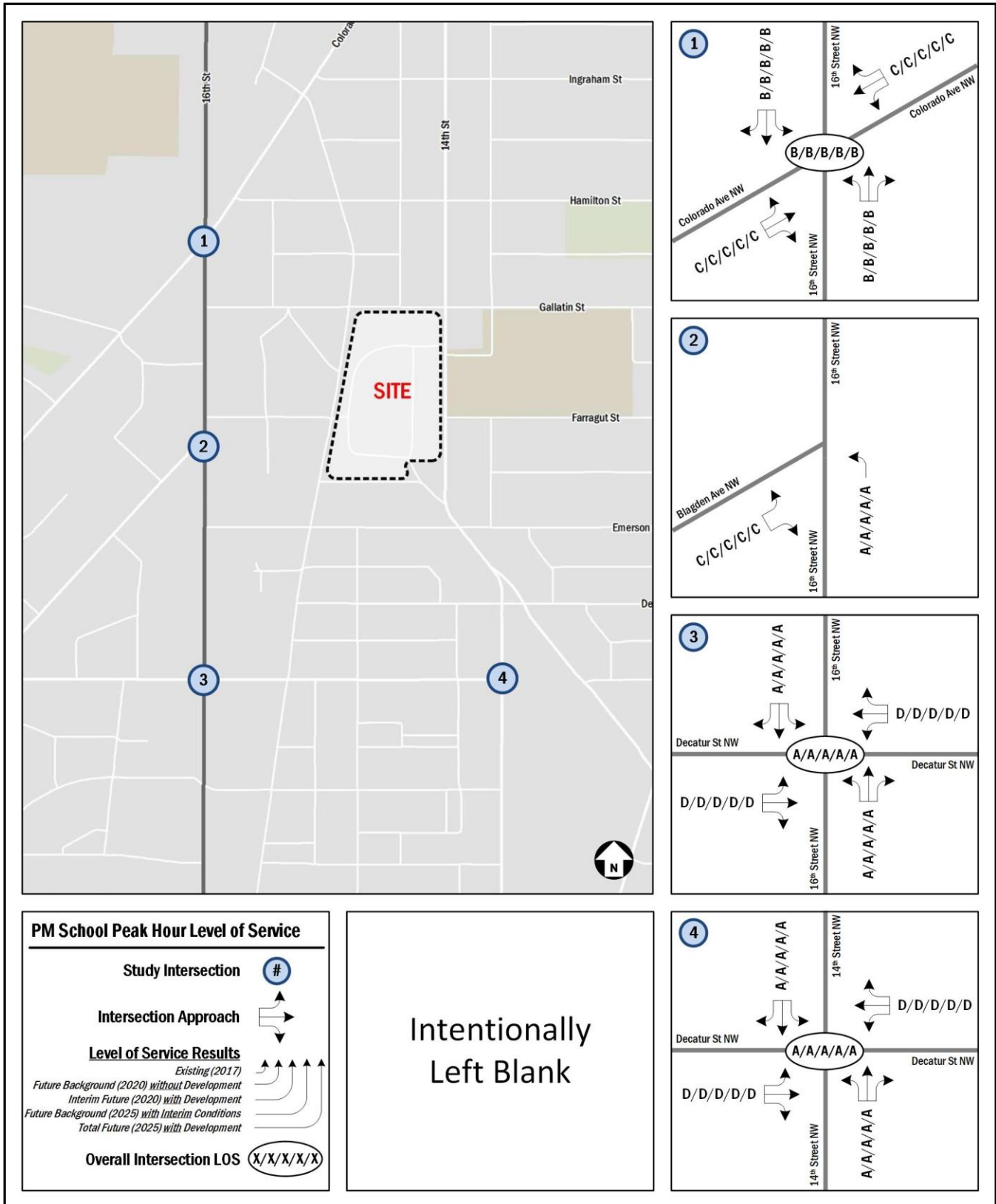


Figure 13: Afternoon School Peak Hour Capacity Analysis Results

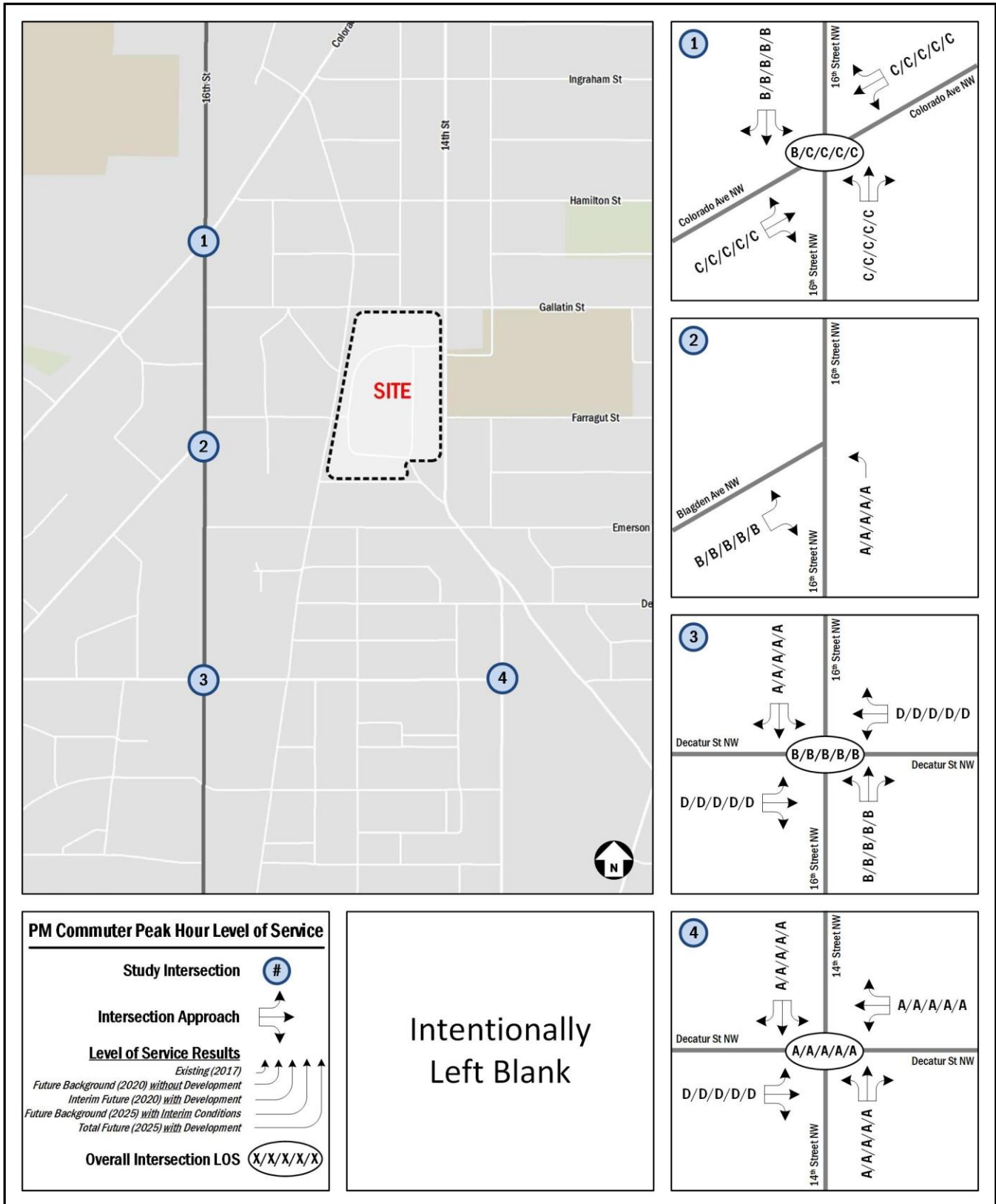


Figure 14: Afternoon Commuter Peak Hour Capacity Analysis Results

PEDESTRIAN ENHANCEMENTS

Given the location of 5000 14th Street across the street from West Education Campus, the community and the Applicant are interested in the provision of one or more crossing guards along 14th Street, particularly the intersection of 14th Street and Farragut Street where 14th Street traffic is free-flowing. The concurrence of two schools adjacent to each other and the high percentage of students at both schools that live within walking distance result in a desire for enhanced safety during the peak arrival and dismissal hours.

LAMB is committed to coordinating with West Education Campus and the District to undergo the process for obtaining crossing guards. LAMB will work to undertake the necessary process by filling out a crossing guard request form and submitting it to the Safe Routes to School Coordinator in order to improve the walking environment surrounding the schools. It is understood that this process will begin after the school has opened such that DDOT can evaluate whether there is an observable problem and if the School meets DDOT criteria for obtaining crossing guards.

SUMMARY AND CONCLUSIONS

The following conclusions were made regarding the 5000 14th Street NW Supplemental Transportation Review:

- Based on DDOT criteria, the proposed development is not considered to have an impact at any of the additional study area intersections.
- The Applicant is committed to coordinating the process of obtaining at least one crossing guard along the 14th Street corridor.
- Overall, this report maintains the conclusions outlined in the full CTR.

TECHNICAL ATTACHMENTS

Project Information

Project Name:	5000 14th Street NW				
Location:	NW Washington DC			Project Number:	
Analysis Period:	STUDY_PERIOD	6:30 AM	to	9:30 AM	System Peak Hour: 7:45 AM to 8:45 AM
Notes:					

Study Intersections

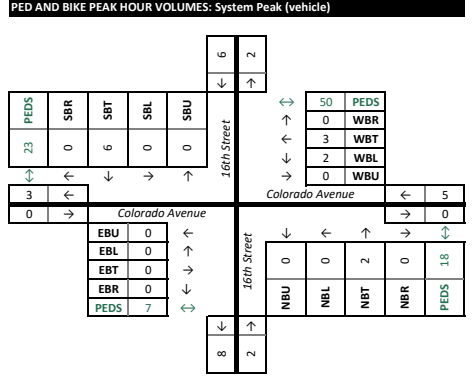
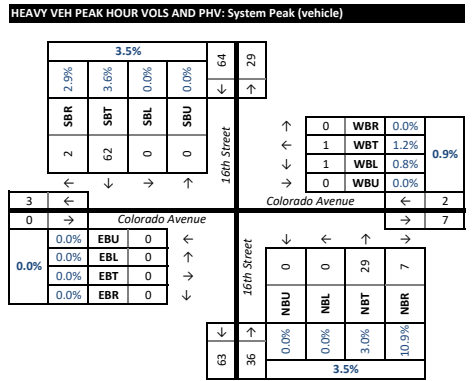
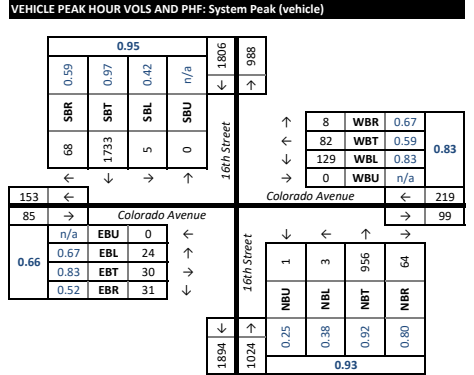
Intersection ID	Southbound	Westbound	Northbound	Eastbound	Count Date	Intersection Peak Hour
1	16th Street	Colorado Avenue	16th Street	Colorado Avenue	9/14/2017	7:45 AM to 8:45 AM
2	16th Street		16th Street	Blagden Avenue	9/14/2017	7:30 AM to 8:30 AM
3	16th Street	Decatur Street	16th Street	Decatur Street	9/14/2017	7:30 AM to 8:30 AM
4	14th Street	Bus Station	14th Street	Decatur Street	9/14/2017	8:00 AM to 9:00 AM
5	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	6:30 AM to 7:30 AM
6	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	6:30 AM to 7:30 AM
7	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	6:30 AM to 7:30 AM
8	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	6:30 AM to 7:30 AM
9	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	6:30 AM to 7:30 AM
10	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	6:30 AM to 7:30 AM
11	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	6:30 AM to 7:30 AM
12	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	6:30 AM to 7:30 AM
13	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	6:30 AM to 7:30 AM
14	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	6:30 AM to 7:30 AM
15	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	6:30 AM to 7:30 AM
16	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	6:30 AM to 7:30 AM
17	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	6:30 AM to 7:30 AM
18	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	6:30 AM to 7:30 AM
19	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	6:30 AM to 7:30 AM
20	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	6:30 AM to 7:30 AM
21	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	6:30 AM to 7:30 AM
22	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	6:30 AM to 7:30 AM
23	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	6:30 AM to 7:30 AM
24	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	6:30 AM to 7:30 AM
25	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	6:30 AM to 7:30 AM

Gorove/Slade Associates - Multimodal Turning Movement Count Report

Project Name : 5000 14th Street NW
 Analysis Period : STUDY PERIOD 06:30 AM to 09:30 AM
 Project # :
 Date of Counts : Thursday, September 14, 2017
 Location : NW Washington DC
 Weather : Partly Cloudy
 Data Source : Gorove/Slade Associates, Inc.

Volumes Displayed as: 2. System Peak (vehicle)
 Intersection Peak Hour (all vehicles): 07:45 AM to 08:45 AM
 System Peak Hour (all vehicles): 07:45 AM to 08:45 AM
 User-Defined Peak Hour: 07:30 AM to 08:30 AM

Intersection:		1. 16th Street & Colorado Avenue																				
ALL VEHICLES	Direction:	Southbound				Westbound				Northbound				Eastbound								
	Roadway:	16th Street				Colorado Avenue				16th Street				Colorado Avenue								
	Movement:	U	L	Thru	Right	Peds	U	L	Thru	Right	Peds	U	L	Thru	Right	Peds	U	L	Thru	Right	Peds	
06:30 AM to 06:45 AM		0	1	303	2	3	0	15	4	0	5	0	1	71	5	0	0	1	2	0	4	
06:45 AM to 07:00 AM		1	0	322	2	2	0	19	1	0	2	0	0	118	8	0	0	6	0	1	0	
07:00 AM to 07:15 AM		0	1	338	1	5	0	15	1	0	6	0	2	164	10	4	0	5	3	2	4	
07:15 AM to 07:30 AM		0	3	397	2	9	0	29	5	1	3	0	1	207	7	5	0	3	1	0	3	
07:30 AM to 07:45 AM		0	0	459	2	3	0	45	5	1	7	0	3	220	15	2	0	7	1	4	10	
07:45 AM to 08:00 AM		0	2	431	2	11	0	31	3	3	5	0	1	260	15	3	0	7	9	3	7	
08:00 AM to 08:15 AM		0	0	448	10	14	0	35	18	3	5	1	2	232	20	3	0	5	6	4	8	
08:15 AM to 08:30 AM		0	3	446	27	11	0	24	35	1	3	0	0	221	14	1	0	9	8	15	4	
08:30 AM to 08:45 AM		0	0	408	29	14	0	39	26	1	5	0	0	243	15	0	0	3	7	9	4	
08:45 AM to 09:00 AM		0	5	434	25	5	0	24	19	1	5	0	3	182	14	4	0	11	4	3	7	
09:00 AM to 09:15 AM		0	1	399	9	5	1	8	15	2	2	0	3	172	10	0	0	7	2	4	5	
09:15 AM to 09:30 AM		0	1	315	5	5	0	17	4	1	5	0	2	175	8	2	0	6	2	2	9	
09:30 AM to 09:45 AM																						
09:45 AM to 10:00 AM																						
10:00 AM to 10:15 AM																						
10:15 AM to 10:30 AM																						
10:30 AM to 10:45 AM																						
10:45 AM to 11:00 AM																						
11:00 AM to 11:15 AM																						
11:15 AM to 11:30 AM																						
SYSTEM PEAK HR (VEH.)		1806				50	219				18	1024				7	85				23	
07:45 AM to 08:45 AM		0	5	1733	68		0	129	82	8		1	3	956	64		0	24	30	31		
Peak Hour Factor (PHF)		0.98	n/a	0.42	0.97	0.59	0.95	n/a	0.83	0.59	0.67	0.83	0.25	0.38	0.92	0.80	0.93	n/a	0.67	0.83	0.52	0.66



DATA COLLECTION NOTES :

Gorove/Slade Associates - Multimodal Turning Movement Count Report

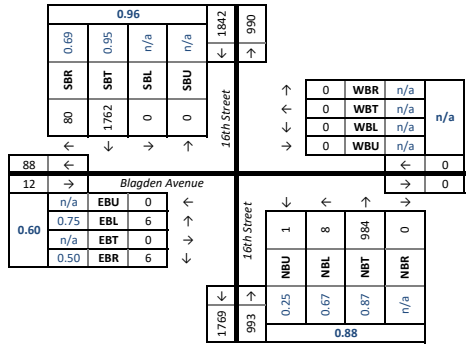
Project Name : 5000 14th Street NW
 Project # :
 Location : NW Washington DC
 Data Source : Gorove/Slade Associates, Inc.

Analysis Period : STUDY PERIOD
 Date of Counts : Thursday, September 14, 2017
 Weather : Partly Cloudy

Volumes Displayed as: 2. System Peak (vehicle)
 Intersection Peak Hour (all vehicles): 07:30 AM to 08:30 AM
 System Peak Hour (all vehicles): 07:45 AM to 08:45 AM
 User-Defined Peak Hour: 07:30 AM to 08:30 AM

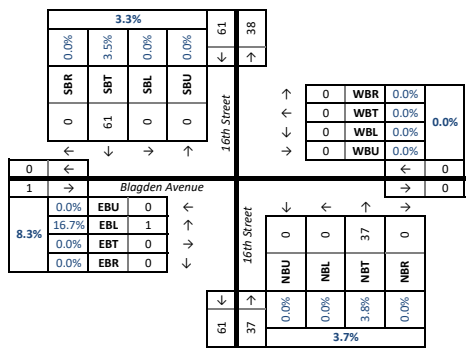
Intersection: 1. 16th Street & Blagden Avenue		Southbound				Westbound				Northbound				Eastbound							
ALL VEHICLES	Direction: Roadway: Movement:	16th Street				16th Street				16th Street				Blagden Avenue							
		U	L	Thru	R	U	L	Thru	R	U	L	Thru	R	U	L	Thru	R				
06:30 AM to 06:45 AM		0	0	310	5	0	0	0	0	0	1	72	0	0	0	1	0	2	7		
06:45 AM to 07:00 AM		0	0	326	8	0	0	0	0	0	1	134	0	0	0	0	0	0	2		
07:00 AM to 07:15 AM		0	0	352	3	0	0	0	0	0	1	171	0	0	0	4	0	0	1		
07:15 AM to 07:30 AM		0	0	417	3	0	0	0	0	0	1	215	0	2	0	0	0	0	2		
07:30 AM to 07:45 AM		0	0	500	3	1	0	0	0	0	1	219	0	1	0	0	0	2	4		
07:45 AM to 08:00 AM		0	0	450	7	0	0	0	0	0	0	283	0	1	0	1	0	1	8		
08:00 AM to 08:15 AM		0	0	463	18	1	0	0	0	0	3	247	0	4	0	2	0	1	6		
08:15 AM to 08:30 AM		0	0	427	29	0	0	0	0	1	3	207	0	3	0	2	0	3	3		
08:30 AM to 08:45 AM		0	0	422	26	0	0	0	0	0	2	247	0	0	0	1	0	1	3		
08:45 AM to 09:00 AM		0	0	402	21	1	0	0	0	0	0	198	0	1	0	2	0	0	6		
09:00 AM to 09:15 AM		0	0	395	13	0	0	0	0	0	0	183	0	0	0	2	0	1	6		
09:15 AM to 09:30 AM		0	0	318	4	0	0	0	0	0	0	173	0	2	1	2	0	1	4		
09:30 AM to 09:45 AM																					
09:45 AM to 10:00 AM																					
10:00 AM to 10:15 AM																					
10:15 AM to 10:30 AM																					
10:30 AM to 10:45 AM																					
10:45 AM to 11:00 AM																					
11:00 AM to 11:15 AM																					
11:15 AM to 11:30 AM																					
SYSTEM PEAK HR (VEH.)		1842				0				993				12				20			
07:45 AM to 08:45 AM		0	0	1762	80	0	0	0	0	0	8	984	0	0	6	0	6				
Peak Hour Overall		U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right	EB			
Factor (PHF)		0.96	n/a	n/a	0.95	0.69	0.96	n/a	n/a	n/a	n/a	0.88	0.25	0.67	0.87	n/a	0.88	n/a	0.75	0.50	0.60

VEHICLE PEAK HOUR VOLS AND PHF: System Peak (vehicle)



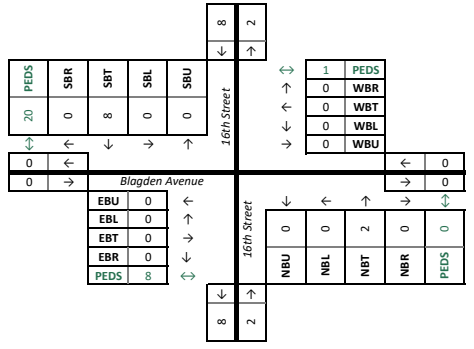
HEAVY VEHICLES (FHWA 4+)		Southbound				Westbound				Northbound				Eastbound					
ALL VEHICLES	Direction: Roadway: Movement:	16th Street				16th Street				16th Street				Blagden Avenue					
		U	L	Thru	R	U	L	Thru	R	U	L	Thru	R	U	L	Thru	R		
06:30 AM to 06:45 AM		0	0	11	0	0	0	0	0	0	0	2	0	0	1	0	0	0	0
06:45 AM to 07:00 AM		0	0	10	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0
07:00 AM to 07:15 AM		0	0	13	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0
07:15 AM to 07:30 AM		0	0	15	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0
07:30 AM to 07:45 AM		0	0	14	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0
07:45 AM to 08:00 AM		0	0	18	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0
08:00 AM to 08:15 AM		0	0	14	0	0	0	0	0	0	0	13	0	0	0	0	0	0	0
08:15 AM to 08:30 AM		0	0	16	0	0	0	0	0	0	0	12	0	0	0	0	0	0	0
08:30 AM to 08:45 AM		0	0	13	0	0	0	0	0	0	0	7	0	0	1	0	0	0	0
08:45 AM to 09:00 AM		0	0	15	1	0	0	0	0	0	0	6	0	0	0	0	0	0	0
09:00 AM to 09:15 AM		0	0	13	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0
09:15 AM to 09:30 AM		0	0	8	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0
09:30 AM to 09:45 AM																			
09:45 AM to 10:00 AM																			
10:00 AM to 10:15 AM																			
10:15 AM to 10:30 AM																			
10:30 AM to 10:45 AM																			
10:45 AM to 11:00 AM																			
11:00 AM to 11:15 AM																			
11:15 AM to 11:30 AM																			
SYSTEM PEAK HR (VEH.)		61				0				37				1					
07:45 AM to 08:45 AM		0	0	61	0	0	0	0	0	0	0	37	0	0	1	0	0		
Heavy Vehicle % (PHV)		0.0%	0.0%	3.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.8%	0.0%	0.0%	16.7%	0.0%	0.0%	8.3%	
INT. PEAK HR (HV ONLY)		62				0				39				0					
07:30 AM to 08:30 AM		0	0	62	0	0	0	0	0	0	0	39	0	0	0	0	0		
Heavy Vehicle % (PHV)		0.0%	0.0%	3.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	

HEAVY VEH PEAK HOUR VOLS AND PHV: System Peak (vehicle)



BICYCLES		Southbound				Westbound				Northbound				Eastbound					
ALL VEHICLES	Direction: Roadway: Movement:	16th Street				16th Street				16th Street				Blagden Avenue					
		U	L	Thru	R	U	L	Thru	R	U	L	Thru	R	U	L	Thru	R		
06:30 AM to 06:45 AM		0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 AM to 07:00 AM		0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00 AM to 07:15 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM to 07:30 AM		0	0	2	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0
07:30 AM to 07:45 AM		0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM to 08:00 AM		0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
08:00 AM to 08:15 AM		0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM to 08:30 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM to 08:45 AM		0	0	3	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
08:45 AM to 09:00 AM		0	0	4	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
09:00 AM to 09:15 AM		0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15 AM to 09:30 AM		0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
09:30 AM to 09:45 AM																			
09:45 AM to 10:00 AM																			
10:00 AM to 10:15 AM																			
10:15 AM to 10:30 AM																			
10:30 AM to 10:45 AM																			
10:45 AM to 11:00 AM																			
11:00 AM to 11:15 AM																			
11:15 AM to 11:30 AM																			
SYSTEM PEAK HR (VEH.)		8				0				2				0					
07:45 AM to 08:45 AM		0	0	8	0	0	0	0	0	0	0	2	0	0	0	0	0		
INT. PEAK HR (BIKES)		10				0				3				0					
08:30 AM to 09:30 AM		0	0	10	0	0	0	0	0	0	0	3	0	0	0	0	0		

PED AND BIKE PEAK HOUR VOLUMES: System Peak (vehicle)



DATA COLLECTION NOTES :

Gorove/Slade Associates - Multimodal Turning Movement Count Report

Project Name: 5000 14th Street NW
 Analysis Period: STUDY_PERIOD 06:30 AM to 09:30 AM
 Project #: _____
 Date of Counts: Thursday, September 14, 2017
 Location: NW Washington DC
 Weather: Partly Cloudy
 Data Source: Gorove/Slade Associates, Inc.

Volumes Displayed as: 2. System Peak (vehicle)

Intersection Peak Hour (all vehicles): 07:30 AM to 08:30 AM

System Peak Hour (all vehicles): 07:45 AM to 08:45 AM

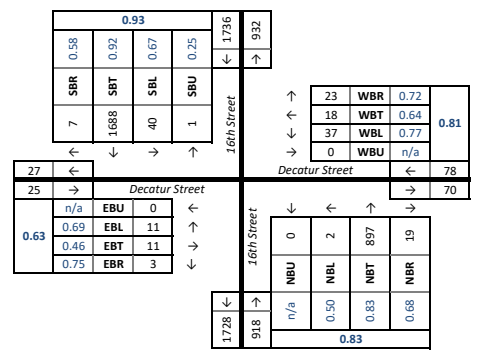
User-Defined Peak Hour: 07:30 AM to 08:30 AM

ALL VEHICLES	Direction: Roadway: Movement:	Southbound		Westbound				Northbound				Eastbound																					
		16th Street				Decatur Street				16th Street				Decatur Street																			
		U	Left	Thru	Right	U	Left	Thru	Right	Peds	U	Left	Thru	Right	Peds	U	Left	Thru	Right	Peds													
06:30 AM to 06:45 AM		0	4	316	2	1	0	3	0	1	0	0	72	0	1	0	0	0	0	0	7												
06:45 AM to 07:00 AM		0	5	307	1	0	0	1	1	1	5	0	0	125	1	1	0	0	0	1	4												
07:00 AM to 07:15 AM		0	7	358	0	1	0	3	0	3	2	0	0	161	0	0	0	3	0	3	1												
07:15 AM to 07:30 AM		0	4	381	0	0	0	7	1	2	4	0	0	197	1	3	0	1	3	2	2												
07:30 AM to 07:45 AM		0	9	510	2	2	0	7	2	3	8	0	0	204	1	1	0	0	2	2	2												
07:45 AM to 08:00 AM		0	8	457	2	9	0	9	4	5	5	0	1	269	5	5	0	3	6	1	4												
08:00 AM to 08:15 AM		0	7	426	2	3	0	7	4	4	8	0	0	212	5	3	0	2	0	0	1												
08:15 AM to 08:30 AM		1	15	404	3	0	0	9	7	8	4	0	1	189	2	3	0	2	2	1	1												
08:30 AM to 08:45 AM		0	10	401	0	1	0	12	3	6	5	0	0	227	7	5	0	4	3	1	3												
08:45 AM to 09:00 AM		0	12	397	4	0	0	10	2	6	5	0	0	163	1	4	0	2	1	0	4												
09:00 AM to 09:15 AM		0	8	426	3	1	0	1	0	3	0	0	3	174	1	0	0	1	2	1	6												
09:15 AM to 09:30 AM		0	4	321	0	0	0	1	3	3	2	0	0	163	1	0	0	1	0	3	1												
09:30 AM to 09:45 AM																																	
09:45 AM to 10:00 AM																																	
10:00 AM to 10:15 AM																																	
10:15 AM to 10:30 AM																																	
10:30 AM to 10:45 AM																																	
10:45 AM to 11:00 AM																																	
11:00 AM to 11:15 AM																																	
11:15 AM to 11:30 AM																																	
SYSTEM PEAK HR (VEH.)		1736				13				78				22				918				16				25				9			
07:45 AM to 08:45 AM		1	40	1688	7		0	37	18	23		0	2	897	19		0	11	11	3		0	11	11	3		0	11	11	3			
Peak Hour Factor (PHF)		Overall	0.90	0.25	0.67	0.92	0.58	0.93	n/a	0.77	0.64	0.72	0.81	n/a	0.50	0.83	0.68	0.83	n/a	0.69	0.46	0.75	0.63										

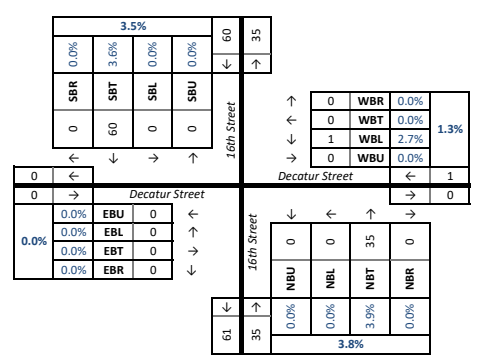
HEAVY VEHICLES (FHWA 4+)	Direction: Roadway: Movement:	Southbound		Westbound				Northbound				Eastbound									
		16th Street				Decatur Street				16th Street				Decatur Street							
		U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right				
06:30 AM to 06:45 AM		0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0				
06:45 AM to 07:00 AM		0	0	8	0	0	0	1	0	0	0	0	5	0	0	0	0				
07:00 AM to 07:15 AM		0	0	15	0	0	0	0	0	0	0	0	3	0	0	0	0				
07:15 AM to 07:30 AM		0	0	14	0	0	0	1	0	0	0	0	5	0	0	0	0				
07:30 AM to 07:45 AM		0	0	14	0	0	0	0	1	0	0	0	9	0	0	0	0				
07:45 AM to 08:00 AM		0	0	20	0	0	0	0	0	0	0	0	6	0	0	0	0				
08:00 AM to 08:15 AM		0	0	12	0	0	0	1	0	0	0	0	11	0	0	0	0				
08:15 AM to 08:30 AM		0	0	14	0	0	0	0	0	0	0	0	13	0	0	0	0				
08:30 AM to 08:45 AM		0	0	14	0	0	0	0	0	0	0	0	5	0	0	0	0				
08:45 AM to 09:00 AM		0	0	15	0	0	0	0	0	0	0	0	5	1	0	0	0				
09:00 AM to 09:15 AM		0	0	13	0	0	0	0	0	0	0	0	7	0	0	0	0				
09:15 AM to 09:30 AM		0	0	8	0	0	0	0	0	0	0	0	7	0	0	0	0				
09:30 AM to 09:45 AM																					
09:45 AM to 10:00 AM																					
10:00 AM to 10:15 AM																					
10:15 AM to 10:30 AM																					
10:30 AM to 10:45 AM																					
10:45 AM to 11:00 AM																					
11:00 AM to 11:15 AM																					
11:15 AM to 11:30 AM																					
SYSTEM PEAK HR (VEH.)		60				1				35				0							
07:45 AM to 08:45 AM		0	0	60	0		0	1	0	0		0	0	35	0		0	0	0	0	
Heavy Vehicle % (PHV)		0.0%	0.0%	3.6%	0.0%	3.5%	0.0%	2.7%	0.0%	0.0%	1.3%	0.0%	0.0%	3.9%	0.0%	3.8%	0.0%	0.0%	0.0%	0.0%	0.0%
INT. PEAK HR (HV ONLY)		60				2				39				0							
07:30 AM to 08:30 AM		0	0	60	0		0	1	0	1		0	0	39	0		0	0	0	0	
Heavy Vehicle % (PHV)		0.0%	0.0%	3.3%	0.0%	3.3%	0.0%	3.1%	0.0%	5.0%	2.9%	0.0%	0.0%	4.5%	0.0%	4.4%	0.0%	0.0%	0.0%	0.0%	0.0%

BICYCLES	Direction: Roadway: Movement:	Southbound		Westbound				Northbound				Eastbound									
		16th Street				Decatur Street				16th Street				Decatur Street							
		U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right				
06:30 AM to 06:45 AM		0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0				
06:45 AM to 07:00 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
07:00 AM to 07:15 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
07:15 AM to 07:30 AM		0	0	0	0	0	0	1	0	0	0	0	2	0	0	0	1				
07:30 AM to 07:45 AM		0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0				
07:45 AM to 08:00 AM		0	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0				
08:00 AM to 08:15 AM		0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0				
08:15 AM to 08:30 AM		0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0				
08:30 AM to 08:45 AM		0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0				
08:45 AM to 09:00 AM		0	0	4	0	0	0	1	0	0	0	0	1	0	0	0	0				
09:00 AM to 09:15 AM		0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0				
09:15 AM to 09:30 AM		0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0				
09:30 AM to 09:45 AM																					
09:45 AM to 10:00 AM																					
10:00 AM to 10:15 AM																					
10:15 AM to 10:30 AM																					
10:30 AM to 10:45 AM																					
10:45 AM to 11:00 AM																					
11:00 AM to 11:15 AM																					
11:15 AM to 11:30 AM																					
SYSTEM PEAK HR (VEH.)		6				1				2				0							
07:45 AM to 08:45 AM		0	0	6	0		0	0	1	0		0	0	2	0		0	0	0	0	
INT. PEAK HR (BIKES)		7				1				3				1							
07:15 AM to 08:15 AM		0	0	7	0		0	1	0	0		0	0	3	0		0	0	1	0	

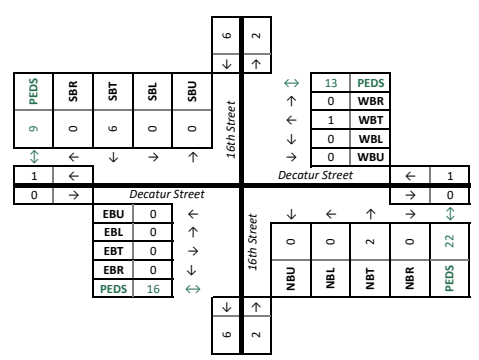
VEHICLE PEAK HOUR VOLS AND PHF: System Peak (vehicle)



HEAVY VEH PEAK HOUR VOLS AND PHV: System Peak (vehicle)



PED AND BIKE PEAK HOUR VOLUMES: System Peak (vehicle)



DATA COLLECTION NOTES :

Gorove/Slade Associates - Multimodal Turning Movement Count Report

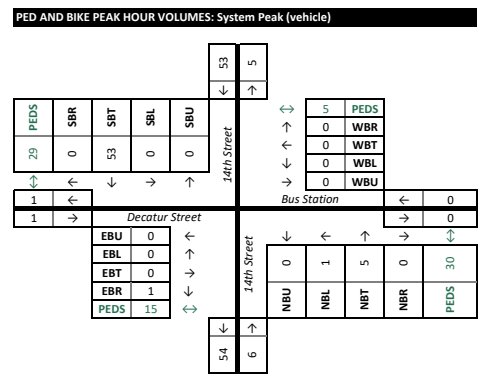
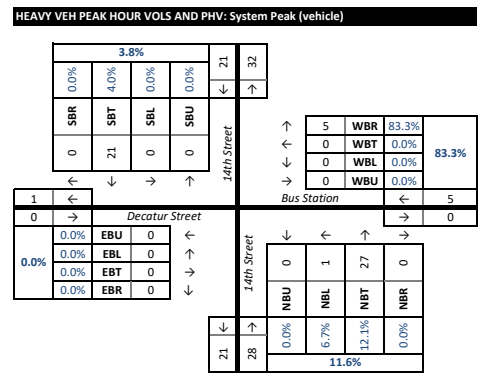
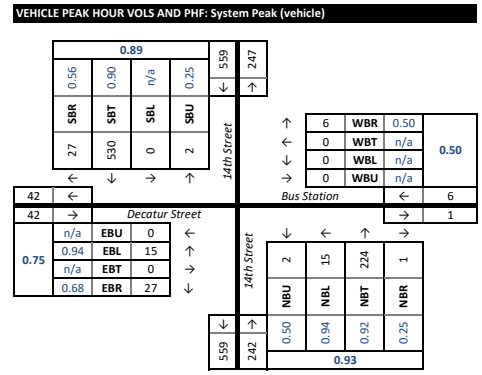
Project Name : 5000 14th Street NW
 Project # :
 Location : NW Washington DC
 Data Source : Gorove/Slade Associates, Inc.

Analysis Period: STUDY PERIOD
 Date of Counts: Thursday, September 14, 2017
 Weather: Partly Cloudy
 06:30 AM to 09:30 AM

Volumes Displayed as: 2. System Peak (vehicle)

Intersection Peak Hour (all vehicles): 08:00 AM to 09:00 AM
 System Peak Hour (all vehicles): 07:45 AM to 08:45 AM
 User-Defined Peak Hour: 07:30 AM to 08:30 AM

Intersection: 1. 14th Street & Bus Station/Decatur Street		Southbound				Westbound				Northbound				Eastbound							
ALL VEHICLES	Direction:	14th Street				Bus Station				14th Street				Decatur Street							
	Movement:	U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right				
06:30 AM to 06:45 AM		0	0	74	0	1	0	3	0	11	3	0	1	21	0	1	0	1	0	7	0
06:45 AM to 07:00 AM		0	0	79	2	1	0	0	0	6	1	0	2	38	0	1	0	3	0	2	4
07:00 AM to 07:15 AM		0	0	108	1	2	0	0	0	6	2	1	2	36	0	1	0	0	0	7	5
07:15 AM to 07:30 AM		0	0	116	2	0	0	1	0	9	3	0	4	41	0	2	0	0	0	5	0
07:30 AM to 07:45 AM		0	0	118	3	1	0	1	0	3	4	1	2	51	0	3	0	2	0	1	4
07:45 AM to 08:00 AM		0	0	114	6	1	0	0	0	3	7	1	4	58	1	5	0	4	0	8	7
08:00 AM to 08:15 AM		0	0	134	2	1	0	0	0	2	3	0	4	61	0	4	0	4	0	10	3
08:15 AM to 08:30 AM		2	0	148	7	1	0	0	0	1	13	0	4	50	0	2	0	3	0	4	8
08:30 AM to 08:45 AM		0	0	134	12	2	0	0	0	0	7	1	3	55	0	4	0	4	0	5	11
08:45 AM to 09:00 AM		0	0	123	12	3	0	0	0	1	4	0	3	54	0	1	0	2	0	8	9
09:00 AM to 09:15 AM		0	1	110	4	5	0	0	0	1	8	0	4	35	0	2	0	3	0	6	9
09:15 AM to 09:30 AM		0	0	92	3	2	0	0	0	1	5	0	2	46	0	4	0	1	0	5	3
09:30 AM to 09:45 AM																					
09:45 AM to 10:00 AM																					
10:00 AM to 10:15 AM																					
10:15 AM to 10:30 AM																					
10:30 AM to 10:45 AM																					
10:45 AM to 11:00 AM																					
11:00 AM to 11:15 AM																					
11:15 AM to 11:30 AM																					
SYSTEM PEAK HR (VEH.)		559				6				242				42							
07:45 AM to 08:45 AM		2	0	530	27	5	0	0	0	6	30	2	15	224	1	15	0	15	0	27	29
Peak Hour Factor (PHF)	Overall	0.25	n/a	0.90	0.56	0.89	n/a	n/a	n/a	n/a	0.50	0.50	0.94	0.92	0.25	0.93	n/a	0.94	n/a	0.68	0.75



DATA COLLECTION NOTES:

Project Information

Project Name:	5000 14th Street NW				
Location:	NW Washington DC			Project Number:	
Analysis Period:	STUDY_PERIOD	2:00 PM	to	7:00 PM	System Peak Hour: 5:00 PM to 6:00 PM
Notes:					

Study Intersections

Intersection ID	Southbound	Westbound	Northbound	Eastbound	Count Date	Intersection Peak Hour
1	16th Street	Colorado Avenue	16th Street	Colorado Avenue	9/14/2017	5:00 PM to 6:00 PM
2	16th Street		16th Street	Blagden Avenue	9/14/2017	5:00 PM to 6:00 PM
3	16th Street	Decatur Street	16th Street	Decatur Street	9/14/2017	5:00 PM to 6:00 PM
4	14th Street	Bus Station	14th Street	Decatur Street	9/14/2017	5:00 PM to 6:00 PM
5	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	2:00 PM to 3:00 PM
6	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	2:00 PM to 3:00 PM
7	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	2:00 PM to 3:00 PM
8	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	2:00 PM to 3:00 PM
9	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	2:00 PM to 3:00 PM
10	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	2:00 PM to 3:00 PM
11	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	2:00 PM to 3:00 PM
12	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	2:00 PM to 3:00 PM
13	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	2:00 PM to 3:00 PM
14	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	2:00 PM to 3:00 PM
15	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	2:00 PM to 3:00 PM
16	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	2:00 PM to 3:00 PM
17	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	2:00 PM to 3:00 PM
18	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	2:00 PM to 3:00 PM
19	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	2:00 PM to 3:00 PM
20	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	2:00 PM to 3:00 PM
21	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	2:00 PM to 3:00 PM
22	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	2:00 PM to 3:00 PM
23	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	2:00 PM to 3:00 PM
24	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	2:00 PM to 3:00 PM
25	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	2:00 PM to 3:00 PM

Gorove/Slade Associates - Multimodal Turning Movement Count Report

Project Name: 5000 14th Street NW
 Project #: _____
 Location: NW Washington DC
 Data Source: Gorove/Slade Associates, Inc.

Analysis Period: STUDY_PERIOD
 Date of Counts: Thursday, September 14, 2017
 Weather: Partly Cloudy

02:00 PM to 07:00 PM

Volumes Displayed as: 3. User-Defined

Intersection Peak Hour (all vehicles): 05:00 PM to 06:00 PM
 System Peak Hour (all vehicles): 05:00 PM to 06:00 PM
 User-Defined Peak Hour: 03:00 PM to 04:00 PM

Intersection:		1. 16th Street & Colorado Avenue																			
ALL VEHICLES	Direction: Roadway: Movement:	Southbound				Westbound				Northbound				Eastbound							
		16th Street				Colorado Avenue				16th Street				Colorado Avenue							
		U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right				
02:00 PM	to 02:15 PM	0	2	163	2	0	11	2	1	1	0	0	287	19	0	0	7	1	4	0	
02:15 PM	to 02:30 PM	0	0	178	7	1	0	13	1	4	1	0	2	281	12	0	0	2	4	4	12
02:30 PM	to 02:45 PM	0	0	167	2	1	0	15	4	3	0	0	4	326	16	0	0	4	3	3	1
02:45 PM	to 03:00 PM	0	1	171	4	4	0	14	5	3	8	0	0	333	28	1	0	4	3	3	2
03:00 PM	to 03:15 PM	0	4	194	6	0	0	16	7	3	1	0	0	306	16	0	0	11	5	1	2
03:15 PM	to 03:30 PM	0	0	203	3	1	0	18	3	3	0	0	0	307	25	1	0	3	5	1	0
03:30 PM	to 03:45 PM	0	3	207	5	3	0	9	3	5	5	0	2	336	21	0	0	10	4	0	6
03:45 PM	to 04:00 PM	0	1	203	3	0	0	11	2	6	2	0	3	452	22	0	0	6	7	2	1
04:00 PM	to 04:15 PM	1	1	206	6	7	0	13	0	1	6	0	0	388	50	4	0	6	1	4	6
04:15 PM	to 04:30 PM	0	0	249	5	6	0	21	4	3	2	0	4	417	57	2	0	2	4	0	5
04:30 PM	to 04:45 PM	0	1	277	3	0	0	15	3	4	6	0	2	438	48	2	0	3	1	2	1
04:45 PM	to 05:00 PM	0	4	287	4	6	0	15	3	4	5	0	3	396	42	3	0	3	7	3	1
05:00 PM	to 05:15 PM	0	1	253	2	4	0	14	6	4	3	0	3	474	39	2	0	6	5	1	1
05:15 PM	to 05:30 PM	0	1	264	3	10	0	16	7	3	14	0	0	456	38	2	0	5	9	7	5
05:30 PM	to 05:45 PM	0	0	300	3	2	0	12	1	5	5	0	4	450	43	1	0	8	10	8	1
05:45 PM	to 06:00 PM	0	2	298	3	3	0	15	6	1	9	0	4	469	53	6	0	2	7	2	4
06:00 PM	to 06:15 PM	0	0	283	2	4	0	10	10	3	5	0	4	364	39	3	0	8	6	0	3
06:15 PM	to 06:30 PM	0	2	274	5	6	0	9	5	3	3	0	5	450	31	0	0	6	5	2	4
06:30 PM	to 06:45 PM	0	2	272	7	4	0	8	6	2	16	0	5	406	26	0	0	7	6	2	9
06:45 PM	to 07:00 PM	0	5	250	5	3	0	13	3	3	5	0	3	348	16	3	0	7	5	4	4

USER-DEFINED PEAK HR		832				86				1490				55			
03:00 PM	to 04:00 PM	U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right
Overall		0	8	807	17	0	54	15	17	0	5	1401	84	0	30	21	4
Factor (PHF)		n/a	0.50	0.97	0.71	n/a	0.75	0.54	0.71	n/a	0.42	0.77	0.84	n/a	0.68	0.75	0.50

HEAVY VEHICLES (FHWA 4+)		Southbound				Westbound				Northbound				Eastbound						
ALL VEHICLES	Direction: Roadway: Movement:	16th Street				Colorado Avenue				16th Street				Colorado Avenue						
		U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right			
		02:00 PM	to 02:15 PM	0	0	3	0	0	0	0	0	0	4	0	0	0	0	0	0	0
02:15 PM	to 02:30 PM	0	0	8	0	0	0	0	0	0	6	0	0	0	1	0	0	0	0	0
02:30 PM	to 02:45 PM	0	0	2	0	0	0	0	1	0	7	0	0	0	0	0	0	0	0	0
02:45 PM	to 03:00 PM	0	0	2	0	0	0	0	0	0	11	2	0	0	0	0	0	0	0	0
03:00 PM	to 03:15 PM	0	1	5	0	0	0	0	0	0	5	2	0	0	0	0	0	0	0	0
03:15 PM	to 03:30 PM	0	0	5	0	0	0	0	0	0	6	2	0	0	0	0	0	0	0	0
03:30 PM	to 03:45 PM	0	0	4	1	0	0	0	1	0	6	0	0	0	0	0	0	0	0	0
03:45 PM	to 04:00 PM	0	0	8	0	0	0	1	0	1	14	1	0	0	0	0	0	0	0	0
04:00 PM	to 04:15 PM	0	0	10	0	0	1	0	0	0	12	4	0	0	0	0	0	0	0	0
04:15 PM	to 04:30 PM	0	0	3	0	0	0	0	0	0	11	2	0	0	0	0	0	0	0	0
04:30 PM	to 04:45 PM	0	0	7	0	0	0	0	1	0	11	3	0	0	0	0	0	0	0	0
04:45 PM	to 05:00 PM	0	0	8	0	0	0	0	0	0	8	2	0	0	0	0	0	0	0	0
05:00 PM	to 05:15 PM	0	0	3	0	0	0	0	0	0	7	1	0	0	0	0	0	0	0	0
05:15 PM	to 05:30 PM	0	0	8	0	0	0	0	0	0	12	2	0	0	0	0	0	0	0	0
05:30 PM	to 05:45 PM	0	0	5	0	0	0	0	0	0	6	2	0	0	0	0	0	0	0	0
05:45 PM	to 06:00 PM	0	0	7	0	0	0	0	0	0	7	5	0	0	0	0	0	0	0	0
06:00 PM	to 06:15 PM	0	0	5	0	0	0	0	0	0	6	3	0	0	0	0	0	0	0	0
06:15 PM	to 06:30 PM	0	0	4	0	0	0	0	0	0	7	2	0	0	0	0	0	0	0	0
06:30 PM	to 06:45 PM	0	0	3	0	0	0	0	0	0	5	2	0	0	0	0	0	0	0	0
06:45 PM	to 07:00 PM	0	0	5	0	0	0	0	0	0	5	2	0	0	0	0	0	0	0	0

USER-DEFINED PEAK HR		24				3				36				0			
03:00 PM	to 04:00 PM	U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right
Heavy Vehicle % (PHV)		0.0%	12.5%	2.7%	5.9%	2.9%	0.0%	1.9%	0.0%	11.8%	3.5%	0.0%	0.0%	2.2%	6.0%	2.4%	0.0%

INT. PEAK HR (HV ONLY)		28				4				58				0			
03:45 PM	to 04:45 PM	U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right
Heavy Vehicle % (PHV)		0.0%	0.0%	3.0%	0.0%	2.9%	0.0%	3.3%	0.0%	14.3%	4.8%	0.0%	0.0%	2.8%	5.6%	3.1%	0.0%

BICYCLES		Southbound				Westbound				Northbound				Eastbound						
ALL VEHICLES	Direction: Roadway: Movement:	16th Street				Colorado Avenue				16th Street				Colorado Avenue						
		U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right			
		02:00 PM	to 02:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 PM	to 02:30 PM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	to 02:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 PM	to 03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 PM	to 03:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
03:15 PM	to 03:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30 PM	to 03:45 PM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45 PM	to 04:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
04:00 PM	to 04:15 PM	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0
04:15 PM	to 04:30 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
04:30 PM	to 04:45 PM	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
04:45 PM	to 05:00 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
05:00 PM	to 05:15 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	1
05:15 PM	to 05:30 PM	0	0	3	1	0	0	1	0	0	3	1	0	0	0	0	0	0	0	0
05:30 PM	to 05:45 PM	0	0	0	0	0	0	0	1	0	6	1	0	0	0	0	0	0	0	0
05:45 PM	to 06:00 PM	0	0	1	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0
06:00 PM	to 06:15 PM	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
06:15 PM	to 06:30 PM	0	0	1	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0
06:30 PM	to 06:45 PM	0	0	1	0	0	0	0	0	0	1	3	1	0	0	0	0	0	0	0
06:45 PM	to 07:00 PM	0	0	2	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0

USER-DEFINED PEAK HR		2				0				2				0			
03:00 PM	to 04:00 PM	U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right
INT. PEAK HR (BIKES)		0	1	1	0	0	0	0	0	0	0	2	0	0	0	0	0

05:00 PM to 06:00 PM		5				2				19				1			
U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right		
0	0	4	1	0	0	1	1	0	3	14	2	0	0	0	1</		

Gorove/Slade Associates - Multimodal Turning Movement Count Report

Project Name : 5000 14th Street NW Analysis Period: STUDY_PERIOD 02:00 PM to 07:00 PM
 Project # : Date of Counts: Thursday, September 14, 2017
 Location : NW Washington DC Weather: Partly Cloudy
 Data Source: Gorove/Slade Associates, Inc.

Volumes Displayed as: 3. User-Defined
 Intersection Peak Hour (all vehicles): 05:00 PM to 06:00 PM
 System Peak Hour (all vehicles): 05:00 PM to 06:00 PM
 User-Defined Peak Hour: 03:00 PM to 04:00 PM

Intersection:		1. 16th Street & Blagden Avenue																			
ALL VEHICLES	Direction:	Southbound				Westbound				Northbound				Eastbound				Peds			
	Roadway:	16th Street				16th Street				Blagden Avenue				Blagden Avenue							
	Movement:	U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right				
02:00 PM to 02:15 PM		0	0	167	3	1	0	0	0	0	0	0	0	285	0	0	0	5	0	1	1
02:15 PM to 02:30 PM		0	0	184	7	0	0	0	0	0	0	0	2	293	0	0	0	2	0	3	13
02:30 PM to 02:45 PM		0	0	178	4	1	0	0	0	0	0	0	2	355	0	1	0	3	0	2	2
02:45 PM to 03:00 PM		0	0	184	6	0	0	0	0	0	0	0	1	366	0	0	0	3	0	1	3
03:00 PM to 03:15 PM		0	0	188	6	0	0	0	0	0	0	0	0	308	0	0	0	4	0	4	2
03:15 PM to 03:30 PM		0	0	206	9	0	0	0	0	0	0	0	1	315	0	1	0	5	0	1	0
03:30 PM to 03:45 PM		0	0	204	8	0	0	0	0	0	0	0	2	355	0	3	0	2	0	2	4
03:45 PM to 04:00 PM		0	0	212	5	1	0	0	0	0	0	0	0	495	0	1	0	3	0	0	0
04:00 PM to 04:15 PM		0	0	224	1	0	0	0	0	0	0	0	2	452	0	3	0	2	0	1	6
04:15 PM to 04:30 PM		0	0	255	1	0	0	0	0	0	0	0	1	424	0	6	0	1	0	0	5
04:30 PM to 04:45 PM		0	0	276	6	0	0	0	0	0	0	0	1	485	0	0	0	1	0	0	0
04:45 PM to 05:00 PM		0	0	297	6	0	0	0	0	0	0	0	0	438	0	3	0	4	0	1	4
05:00 PM to 05:15 PM		0	0	260	2	0	0	0	0	0	0	0	0	519	0	1	0	3	0	2	6
05:15 PM to 05:30 PM		0	0	266	7	1	0	0	0	0	0	0	2	491	0	0	0	0	0	4	0
05:30 PM to 05:45 PM		0	0	312	6	0	0	0	0	0	0	0	5	498	0	0	0	5	0	0	3
05:45 PM to 06:00 PM		0	0	295	5	0	0	0	0	0	0	0	2	489	0	1	0	1	0	2	1
06:00 PM to 06:15 PM		0	0	276	7	0	0	0	0	0	0	1	1	417	0	1	0	1	0	0	5
06:15 PM to 06:30 PM		0	0	267	8	0	0	0	0	0	0	0	1	470	0	1	0	3	0	1	4
06:30 PM to 06:45 PM		0	0	272	7	0	0	0	0	0	0	0	2	435	0	1	1	1	0	0	8
06:45 PM to 07:00 PM		0	0	247	11	0	0	0	0	0	0	0	1	345	0	1	0	1	0	1	6

USER-DEFINED PEAK HR		838				0				1476				21				6			
Peak Hour	Overall	U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right	EB			
	Factor (PHF)	0.82	n/a	n/a	0.96	0.78	0.97	n/a	n/a	n/a	n/a	n/a	0.38	0.74	n/a	0.75	n/a	0.70	n/a	0.44	0.66

HEAVY VEHICLES (FHWA #)		Southbound				Westbound				Northbound				Eastbound			
Direction:	Roadway:	16th Street				16th Street				Blagden Avenue				Blagden Avenue			
Movement:		U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right
02:00 PM to 02:15 PM		0	0	3	0	0	0	0	0	0	0	2	0	0	0	0	0
02:15 PM to 02:30 PM		0	0	8	0	0	0	0	0	0	0	7	0	0	0	0	0
02:30 PM to 02:45 PM		0	0	2	0	0	0	0	0	0	0	11	0	0	0	0	0
02:45 PM to 03:00 PM		0	0	2	0	0	0	0	0	0	0	11	0	0	0	0	0
03:00 PM to 03:15 PM		0	0	4	1	0	0	0	0	0	0	6	0	0	1	0	0
03:15 PM to 03:30 PM		0	0	5	0	0	0	0	0	0	0	9	0	0	0	0	0
03:30 PM to 03:45 PM		0	0	4	0	0	0	0	0	0	0	5	0	0	0	0	0
03:45 PM to 04:00 PM		0	0	9	0	0	0	0	0	0	0	16	0	0	0	0	0
04:00 PM to 04:15 PM		0	0	11	0	0	0	0	0	0	0	16	0	0	0	0	0
04:15 PM to 04:30 PM		0	0	7	0	0	0	0	0	0	0	14	0	0	0	0	0
04:30 PM to 04:45 PM		0	0	7	0	0	0	0	0	0	0	8	0	0	0	0	0
04:45 PM to 05:00 PM		0	0	3	0	0	0	0	0	0	0	11	0	0	0	0	0
05:00 PM to 05:15 PM		0	0	3	0	0	0	0	0	0	0	11	0	0	0	0	0
05:15 PM to 05:30 PM		0	0	8	0	0	0	0	0	0	0	11	0	0	0	0	0
05:30 PM to 05:45 PM		0	0	5	0	0	0	0	0	0	0	8	0	0	0	0	0
05:45 PM to 06:00 PM		0	0	6	0	0	0	0	0	0	0	12	0	0	0	0	0
06:00 PM to 06:15 PM		0	0	5	0	0	0	0	0	0	0	11	0	0	0	0	0
06:15 PM to 06:30 PM		0	0	4	0	0	0	0	0	0	0	7	0	0	0	0	0
06:30 PM to 06:45 PM		0	0	3	0	0	0	0	0	0	0	9	0	0	0	0	0
06:45 PM to 07:00 PM		0	0	5	0	0	0	0	0	0	0	5	0	0	0	0	0

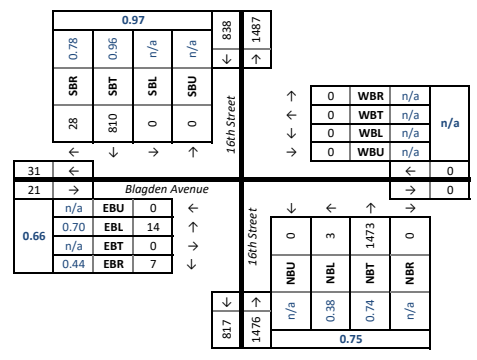
USER-DEFINED PEAK HR		23				0				36				1				4.8%		
Peak Hour	Overall	U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right	EB		
03:00 PM to 04:00 PM		0.0%	0.0%	2.7%	3.6%	2.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.4%	0.0%	2.4%	0.0%	7.1%	0.0%	0.0%	4.8%

INT. PEAK HR (HV ONLY)		30				0				60				0					
Peak Hour	Overall	U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right		
03:45 PM to 04:45 PM		0.0%	0.0%	3.1%	0.0%	3.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.2%	0.0%	3.2%	0.0%	0.0%	0.0%	0.0%

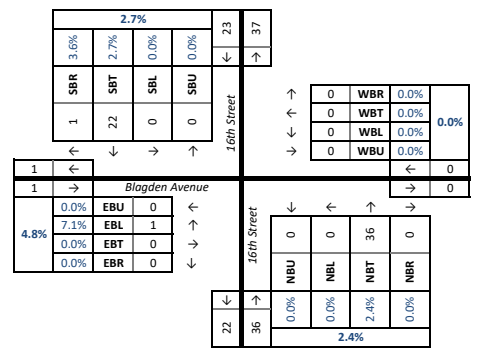
BICYCLES		Southbound				Westbound				Northbound				Eastbound			
Direction:	Roadway:	16th Street				16th Street				Blagden Avenue				Blagden Avenue			
Movement:		U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right
02:00 PM to 02:15 PM		0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 PM to 02:30 PM		0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM to 02:45 PM		0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0
02:45 PM to 03:00 PM		0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
03:00 PM to 03:15 PM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15 PM to 03:30 PM		0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
03:30 PM to 03:45 PM		0	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0
03:45 PM to 04:00 PM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00 PM to 04:15 PM		0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0
04:15 PM to 04:30 PM		0	0	0	0	0	0	0	0	0	1	4	0	0	0	0	0
04:30 PM to 04:45 PM		0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	1
04:45 PM to 05:00 PM		0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
05:00 PM to 05:15 PM		0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
05:15 PM to 05:30 PM		0	0	5	0	0	0	0	0	0	0	6	0	0	0	0	1
05:30 PM to 05:45 PM		0	0	1	0	0	0	0	0	0	0	5	0	0	0	0	0
05:45 PM to 06:00 PM		0	0	1	0	0	0	0	0	0	0	7	0	0	0	0	0
06:00 PM to 06:15 PM		0	0	2	0	0	0	0	0	0	0	1	0	0	1	0	0
06:15 PM to 06:30 PM		0	0	3	0	0	0	0	0	0	0	3	0	0	0	0	0
06:30 PM to 06:45 PM		0	0	2	0	0	0	0	0	0	0	3	0	0	1	0	0
06:45 PM to 07:00 PM		0	0	2	0	0	0	0	0	0	0	4	0	0	0	0	0

DATA COLLECTION NOTES :

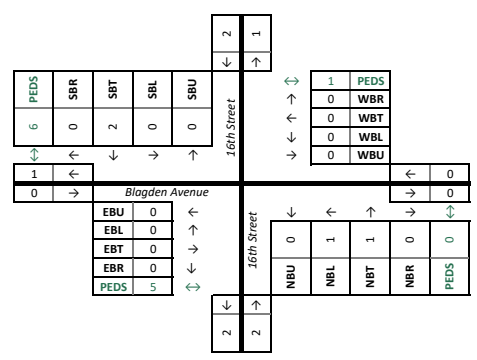
VEHICLE PEAK HOUR VOLS AND PHF: User-Defined (03:00 PM-04:00 PM)



HEAVY VEH PEAK HOUR VOLS AND PHV: User-Defined (03:00 PM-04:00 PM)



PED AND BIKE PEAK HOUR VOLUMES: User-Defined (03:00 PM-04:00 PM)



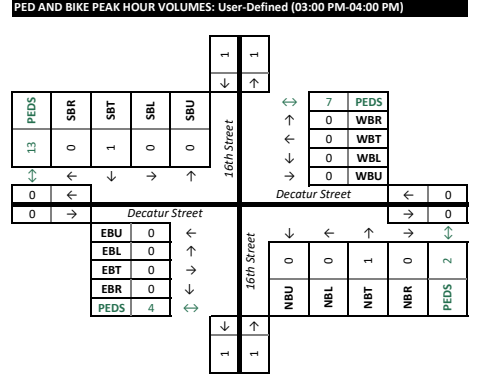
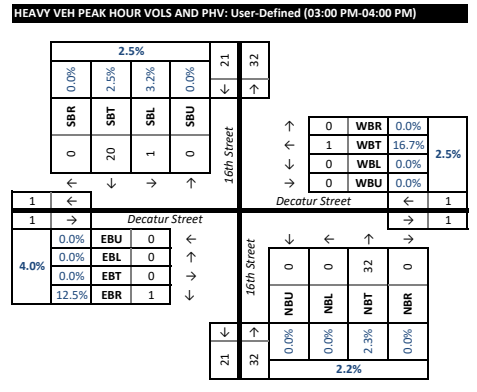
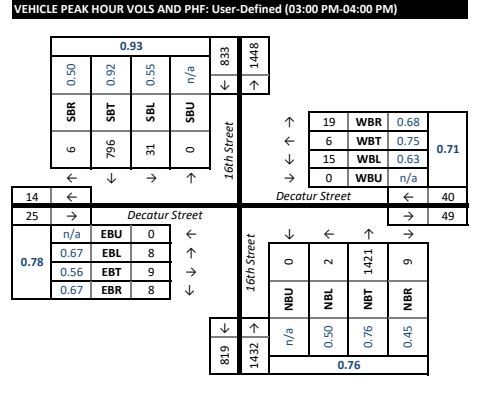
Gorove/Slade Associates - Multimodal Turning Movement Count Report

Project Name : 5000 14th Street NW
 Project # :
 Location : NW Washington DC
 Data Source : Gorove/Slade Associates, Inc.

Analysis Period : STUDY_PERIOD 02:00 PM to 07:00 PM
 Date of Counts : Thursday, September 14, 2017
 Weather : Partly Cloudy

Volumes Displayed as: 3. User-Defined
 Intersection Peak Hour (all vehicles): 05:00 PM to 06:00 PM
 System Peak Hour (all vehicles): 05:00 PM to 06:00 PM
 User-Defined Peak Hour: 03:00 PM to 04:00 PM

Intersection: 1. 16th Street & Decatur Street		Southbound				Westbound				Northbound				Eastbound																			
ALL VEHICLES	Direction: Roadway: Movement:	16th Street				Decatur Street				16th Street				Decatur Street																			
		U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right																
02:00 PM to 02:15 PM		0	0	163	0	0	0	2	3	3	0	0	284	6	1	0	2	1	1	0													
02:15 PM to 02:30 PM		0	6	192	0	1	0	2	3	1	0	0	277	2	1	0	1	0	2	3													
02:30 PM to 02:45 PM		0	3	179	1	2	0	1	2	3	1	0	3	348	1	0	0	1	3	0													
02:45 PM to 03:00 PM		0	5	164	0	1	0	1	2	2	3	0	3	331	2	2	0	3	2	2	5												
03:00 PM to 03:15 PM		0	6	194	3	0	0	2	2	1	0	0	0	317	5	1	0	1	2	2	6												
03:15 PM to 03:30 PM		0	14	191	1	1	0	4	1	5	1	0	1	299	2	1	0	3	2	3	3												
03:30 PM to 03:45 PM		0	5	194	1	3	0	6	1	7	0	0	1	337	1	0	0	3	1	2	2												
03:45 PM to 04:00 PM		0	6	217	1	3	0	3	2	6	1	0	0	468	1	2	0	1	4	1	2												
04:00 PM to 04:15 PM		0	8	201	1	3	0	1	1	4	2	0	3	429	2	4	0	2	1	1	4												
04:15 PM to 04:30 PM		0	8	258	1	0	0	3	3	2	1	0	1	412	8	2	0	3	1	1	3												
04:30 PM to 04:45 PM		0	7	274	0	1	0	4	1	6	5	0	2	461	4	4	0	2	2	2	2												
04:45 PM to 05:00 PM		0	7	296	2	2	0	0	3	4	0	0	2	440	1	0	0	3	3	1	3												
05:00 PM to 05:15 PM		0	6	250	2	1	0	2	3	6	2	0	3	484	1	5	0	0	3	1	4												
05:15 PM to 05:30 PM		0	7	259	1	0	0	2	1	5	0	0	0	484	1	0	0	3	5	1	2												
05:30 PM to 05:45 PM		0	10	293	1	1	0	1	2	3	4	0	0	497	1	2	0	2	1	3	0												
05:45 PM to 06:00 PM		0	10	291	0	3	0	2	3	4	1	0	0	472	3	2	0	3	0	1	4												
06:00 PM to 06:15 PM		0	4	299	0	1	0	1	3	6	5	0	1	422	2	1	0	1	0	0	7												
06:15 PM to 06:30 PM		0	4	249	0	1	0	3	1	0	4	0	0	439	3	0	0	1	1	0	5												
06:30 PM to 06:45 PM		0	10	269	2	0	0	3	0	3	5	0	1	441	4	0	0	0	2	3	3												
06:45 PM to 07:00 PM		0	5	235	0	0	0	0	0	1	14	0	0	338	0	4	0	1	0	0	13												
USER-DEFINED PEAK HR		833				7				40				2				1432				4				25				13			
03:00 PM to 04:00 PM		U	L	Thru	Right	SB		U	L	Thru	Right	WB		U	L	Thru	Right	NB		U	L	Thru	Right	EB									
Peak Hour Overall		n/a	0.55	0.92	0.50	0.93		n/a	0.63	0.75	0.68	0.71		n/a	0.50	0.76	0.45	0.76		n/a	0.67	0.56	0.67	0.78									
Factor (PHF)																																	



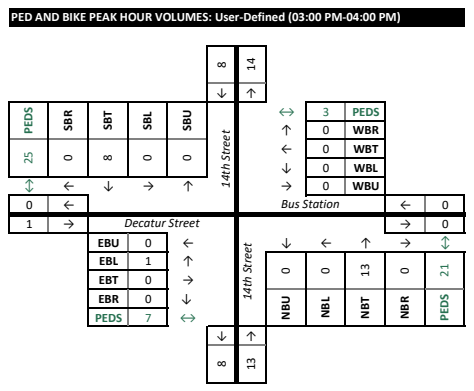
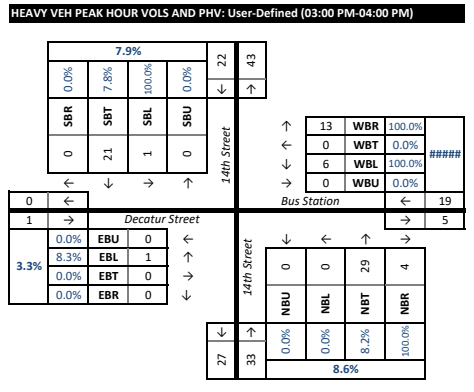
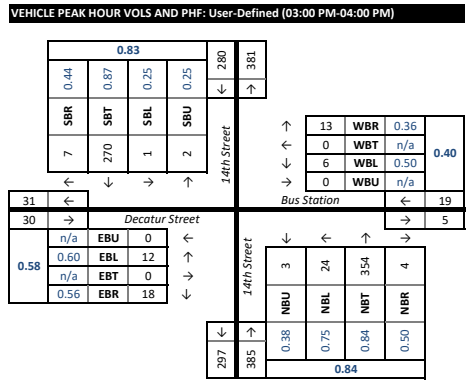
DATA COLLECTION NOTES :

Gorove/Slade Associates - Multimodal Turning Movement Count Report

Project Name: 5000 14th Street NW Analysis Period: STUDY_PERIOD 02:00 PM to 07:00 PM
 Project #: _____ Date of Counts: Thursday, September 14, 2017
 Location: NW Washington DC Weather: Partly Cloudy
 Data Source: Gorove/Slade Associates, Inc.

Volumes Displayed as: 3. User-Defined
 Intersection Peak Hour (all vehicles): 05:00 PM to 06:00 PM
 System Peak Hour (all vehicles): 05:00 PM to 06:00 PM
 User-Defined Peak Hour: 03:00 PM to 04:00 PM

Intersection: 1. 14th Street & Bus Station/Decatur Street		Southbound				Westbound				Northbound				Eastbound							
ALL VEHICLES	Direction: 14th Street	14th Street				Bus Station				14th Street				Decatur Street							
		U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right				
02:00 PM	to 02:15 PM	0	0	49	4	0	0	1	0	3	1	0	4	65	0	0	0	4	0	4	3
02:15 PM	to 02:30 PM	0	0	57	1	2	0	0	0	0	3	0	2	62	0	1	0	2	0	3	1
02:30 PM	to 02:45 PM	0	0	76	4	0	0	1	0	3	3	2	4	74	0	9	0	1	0	0	0
02:45 PM	to 03:00 PM	0	2	62	3	0	0	3	0	6	3	0	3	85	0	1	0	3	0	8	8
03:00 PM	to 03:15 PM	0	0	74	0	1	0	3	0	9	3	2	3	79	0	0	0	4	0	5	5
03:15 PM	to 03:30 PM	0	1	58	2	0	0	2	0	2	10	1	8	89	1	4	0	2	0	3	10
03:30 PM	to 03:45 PM	2	0	78	4	0	0	0	0	2	2	0	5	81	2	3	0	5	0	8	9
03:45 PM	to 04:00 PM	0	0	60	1	2	0	1	0	0	6	0	8	105	1	0	0	1	0	2	1
04:00 PM	to 04:15 PM	0	1	82	2	2	0	1	0	0	9	0	7	127	1	1	0	5	0	11	5
04:15 PM	to 04:30 PM	0	0	71	4	3	0	1	0	1	5	1	11	122	1	3	0	1	0	5	11
04:30 PM	to 04:45 PM	0	0	58	1	3	0	0	0	0	6	0	5	100	0	2	0	4	0	4	13
04:45 PM	to 05:00 PM	0	0	62	1	1	0	0	0	0	4	0	8	108	1	4	0	4	0	4	6
05:00 PM	to 05:15 PM	0	1	79	2	4	0	0	0	0	5	0	5	112	0	1	0	4	0	2	12
05:15 PM	to 05:30 PM	0	1	83	2	5	0	0	0	0	2	0	2	123	0	1	0	2	0	9	7
05:30 PM	to 05:45 PM	0	0	70	1	2	0	0	0	0	3	0	5	123	0	4	0	3	0	9	4
05:45 PM	to 06:00 PM	0	1	90	1	0	0	0	0	0	6	1	6	127	0	3	0	5	0	7	5
06:00 PM	to 06:15 PM	0	2	84	1	0	0	0	0	0	6	0	2	104	0	3	0	3	0	4	7
06:15 PM	to 06:30 PM	0	2	66	1	2	0	0	0	0	8	1	2	106	0	4	0	2	0	3	7
06:30 PM	to 06:45 PM	0	3	81	2	1	0	0	0	0	7	0	4	100	0	0	0	4	0	4	5
06:45 PM	to 07:00 PM	0	10	47	2	2	0	0	0	1	3	0	4	77	2	1	0	0	0	3	5
USER-DEFINED PEAK HR		280				19				385				30							
03:00 PM	to 04:00 PM	2	1	270	7	0	6	0	13	3	24	354	4	0	12	0	18	25			
Peak Hour Factor (PHF)	Overall	0.25	0.25	0.87	0.44	0.83	n/a	0.50	n/a	0.36	0.40	0.38	0.75	0.84	0.50	0.84	n/a	0.60	n/a	0.56	0.58



DATA COLLECTION NOTES:

Project Information

Project Name:	5000 14th Street NW				
Location:	NW Washington DC			Project Number:	
Analysis Period:	STUDY_PERIOD	2:00 PM	to	7:00 PM	System Peak Hour: 5:00 PM to 6:00 PM
Notes:					

Study Intersections

Intersection ID	Southbound	Westbound	Northbound	Eastbound	Count Date	Intersection Peak Hour
1	16th Street	Colorado Avenue	16th Street	Colorado Avenue	9/14/2017	5:00 PM to 6:00 PM
2	16th Street		16th Street	Blagden Avenue	9/14/2017	5:00 PM to 6:00 PM
3	16th Street	Decatur Street	16th Street	Decatur Street	9/14/2017	5:00 PM to 6:00 PM
4	14th Street	Bus Station	14th Street	Decatur Street	9/14/2017	5:00 PM to 6:00 PM
5	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	2:00 PM to 3:00 PM
6	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	2:00 PM to 3:00 PM
7	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	2:00 PM to 3:00 PM
8	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	2:00 PM to 3:00 PM
9	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	2:00 PM to 3:00 PM
10	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	2:00 PM to 3:00 PM
11	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	2:00 PM to 3:00 PM
12	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	2:00 PM to 3:00 PM
13	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	2:00 PM to 3:00 PM
14	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	2:00 PM to 3:00 PM
15	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	2:00 PM to 3:00 PM
16	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	2:00 PM to 3:00 PM
17	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	2:00 PM to 3:00 PM
18	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	2:00 PM to 3:00 PM
19	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	2:00 PM to 3:00 PM
20	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	2:00 PM to 3:00 PM
21	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	2:00 PM to 3:00 PM
22	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	2:00 PM to 3:00 PM
23	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	2:00 PM to 3:00 PM
24	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	2:00 PM to 3:00 PM
25	SB Street	WB Ave	NB Street	EB Ave	1/1/1999	2:00 PM to 3:00 PM

Gorove/Slade Associates - Multimodal Turning Movement Count Report

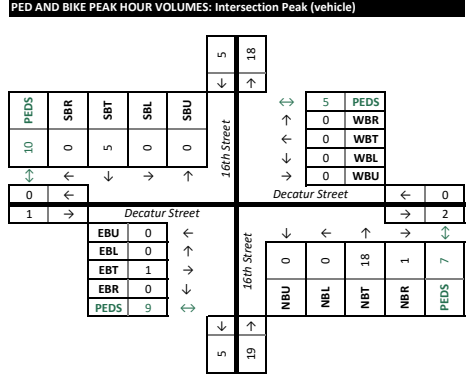
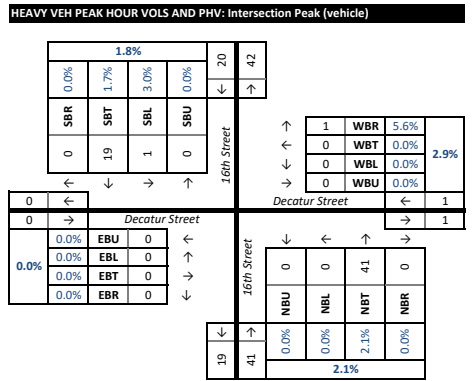
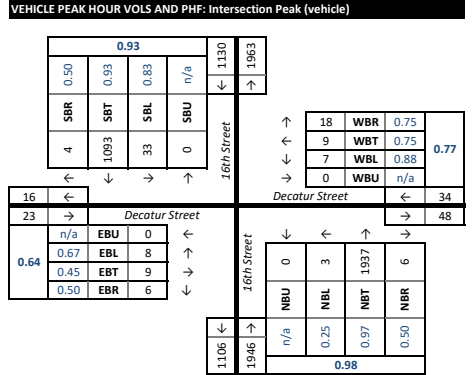
Project Name: 5000 14th Street NW
 Project #: _____
 Location: NW Washington DC
 Data Source: Gorove/Slade Associates, Inc.

Analysis Period: STUDY_PERIOD
 Date of Counts: Thursday, September 14, 2017
 Weather: Partly Cloudy

02:00 PM to 07:00 PM

Volumes Displayed as: 1. Intersection Peak (vehicle)
 Intersection Peak Hour (all vehicles): 05:00 PM to 06:00 PM
 System Peak Hour (all vehicles): 05:00 PM to 06:00 PM
 User-Defined Peak Hour: 03:00 PM to 04:00 PM

Intersection: 1. 16th Street & Decatur Street		Southbound				Westbound				Northbound				Eastbound							
ALL VEHICLES	Direction: Roadway: Movement:	16th Street				Decatur Street				16th Street				Decatur Street							
		U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right				
02:00 PM	to 02:15 PM	0	0	163	0	0	0	2	3	3	0	0	284	6	1	0	2	1	1	0	
02:15 PM	to 02:30 PM	0	6	192	0	1	0	2	3	1	0	0	277	2	1	0	1	0	2	3	
02:30 PM	to 02:45 PM	0	3	179	1	2	0	1	2	3	1	0	3	348	1	0	0	1	3	0	
02:45 PM	to 03:00 PM	0	5	164	0	1	0	1	2	2	3	0	3	331	2	2	0	3	2	5	
03:00 PM	to 03:15 PM	0	6	194	3	0	0	2	2	1	0	0	0	317	5	1	0	1	2	6	
03:15 PM	to 03:30 PM	0	14	191	1	1	0	4	1	5	1	0	1	299	2	1	0	3	2	3	
03:30 PM	to 03:45 PM	0	5	194	1	3	0	6	1	7	0	0	1	337	1	0	0	3	1	2	
03:45 PM	to 04:00 PM	0	6	217	1	3	0	3	2	6	1	0	0	468	1	2	0	1	4	1	
04:00 PM	to 04:15 PM	0	8	201	1	1	0	1	1	4	2	0	3	429	2	4	0	2	1	1	
04:15 PM	to 04:30 PM	0	8	258	1	0	0	3	3	2	1	0	1	412	8	2	0	3	1	3	
04:30 PM	to 04:45 PM	0	7	274	0	1	0	4	1	6	5	0	2	461	4	4	0	2	2	2	
04:45 PM	to 05:00 PM	0	7	296	2	2	0	0	3	4	0	0	2	440	1	0	0	3	3	1	
05:00 PM	to 05:15 PM	0	6	250	2	1	0	2	3	6	2	0	3	484	1	5	0	0	3	1	
05:15 PM	to 05:30 PM	0	7	259	1	0	0	2	1	5	0	0	0	484	1	0	0	3	5	1	
05:30 PM	to 05:45 PM	0	10	293	1	1	0	1	2	3	4	0	0	497	1	2	0	2	1	3	
05:45 PM	to 06:00 PM	0	10	291	0	3	0	2	3	4	1	0	0	472	3	2	0	3	0	1	
06:00 PM	to 06:15 PM	0	4	299	0	1	0	1	3	6	5	0	1	422	2	1	0	1	0	7	
06:15 PM	to 06:30 PM	0	4	249	0	1	0	3	1	0	4	0	0	439	3	0	0	1	1	0	
06:30 PM	to 06:45 PM	0	10	269	2	0	0	3	0	3	5	0	1	441	4	0	0	0	2	3	
06:45 PM	to 07:00 PM	0	5	235	0	0	0	0	0	1	14	0	0	338	0	4	0	1	0	13	
INT. PEAK HR (ALL VEH)		1130				34				1946				23				10			
05:00 PM	to 06:00 PM	U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right
Peak Hour Factor (PHF)	Overall	n/a	0.83	0.93	0.50	0.93	n/a	0.88	0.75	0.75	0.77	n/a	0.25	0.97	0.50	0.98	n/a	0.67	0.45	0.50	0.64



DATA COLLECTION NOTES:

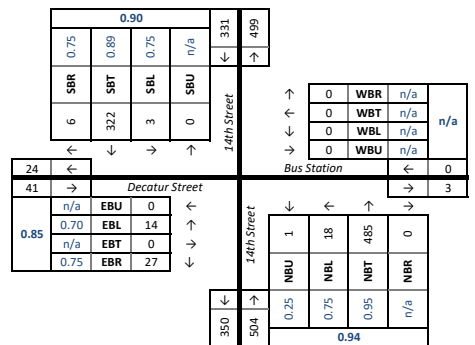
Gorove/Slade Associates - Multimodal Turning Movement Count Report

Project Name : 5000 14th Street NW Analysis Period: STUDY PERIOD 02:00 PM to 07:00 PM
 Project # : Date of Counts: Thursday, September 14, 2017
 Location: NW Washington DC Weather: Partly Cloudy
 Data Source: Gorove/Slade Associates, Inc.

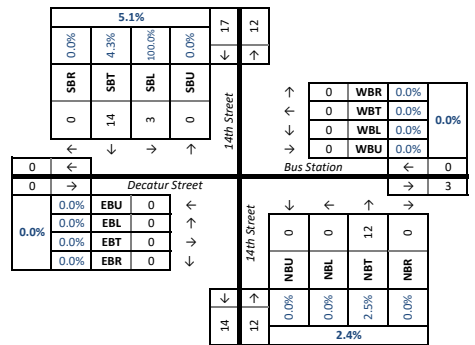
Volumes Displayed as: 1. Intersection Peak (vehicle)
 Intersection Peak Hour (all vehicles): 05:00 PM to 06:00 PM
 System Peak Hour (all vehicles): 05:00 PM to 06:00 PM
 User-Defined Peak Hour: 03:00 PM to 04:00 PM

ALL VEHICLES	Intersection: 1. 14th Street & Bus Station/Decatur Street																																		
	Southbound				Westbound				Northbound				Eastbound																						
	14th Street				Bus Station				14th Street				Decatur Street																						
Direction:	U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right	U	L	Thru	Right																			
02:00 PM to 02:15 PM	0	0	49	4	0	0	1	0	3	1	0	4	65	0	0	0	4	0	4	3															
02:15 PM to 02:30 PM	0	0	57	1	2	0	0	0	0	3	0	2	62	0	1	0	2	0	3	1															
02:30 PM to 02:45 PM	0	0	76	4	0	0	1	0	3	3	2	4	74	0	9	0	1	0	4	0															
02:45 PM to 03:00 PM	0	2	62	3	0	0	3	0	6	3	0	3	85	0	1	0	3	0	8	8															
03:00 PM to 03:15 PM	0	0	74	0	1	0	3	0	9	3	2	3	79	0	0	0	4	0	5	5															
03:15 PM to 03:30 PM	0	1	58	2	0	0	2	0	2	10	1	8	89	1	4	0	2	0	3	10															
03:30 PM to 03:45 PM	2	0	78	4	0	0	0	0	2	2	0	5	81	2	3	0	5	0	8	9															
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04:30 PM to 04:45 PM	0	0	58	1	3	0	0	0	0	6	0	5	100	0	2	0	4	0	4	13															
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05:30 PM to 05:45 PM	0	0	70	1	2	0	0	0	0	3	0	5	123	0	4	0	3	0	9	4															
05:45 PM to 06:00 PM	0	1	90	1	0	0	0	0	0	6	1	6	127	0	3	0	5	0	7	5															
06:00 PM to 06:15 PM	0	2	84	1	0	0	0	0	0	6	0	2	104	0	3	0	3	0	4	7															
06:15 PM to 06:30 PM	0	2	66	1	2	0	0	0	0	8	1	2	106	0	4	0	2	0	3	7															
06:30 PM to 06:45 PM	0	3	81	2	1	0	0	0	0	7	0	4	100	0	0	0	4	0	4	5															
06:45 PM to 07:00 PM	0	10	47	2	2	0	0	0	1	3	0	4	77	2	1	0	0	0	3	5															
INT. PEAK HR (ALL VEH)	331				11				0				16				504				9				41				28						
05:00 PM to 06:00 PM	0	3	322	6		0	0	0	0		1	18	485	0		0	14	0	27		0	0	0	0		0	0	0	0		0	0	0	0	
Peak Hour	U	L	Thru	Right	SB	U	L	Thru	Right	WB	U	L	Thru	Right	NB	U	L	Thru	Right	EB	U	L	Thru	Right	WB	U	L	Thru	Right	EB					
Factor (PHF)	n/a	0.75	0.89	0.75	0.90	n/a	n/a	n/a	n/a	n/a	0.25	0.75	0.95	n/a	0.94	n/a	0.70	n/a	0.75	0.85	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a					

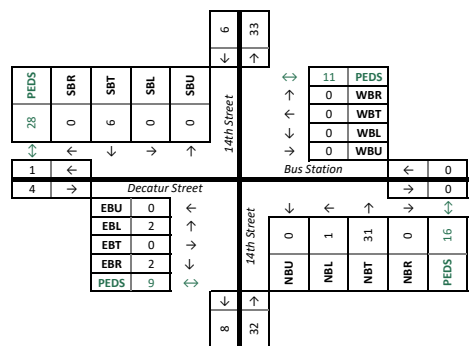
VEHICLE PEAK HOUR VOLS AND PHF: Intersection Peak (vehicle)



HEAVY VEH PEAK HOUR VOLS AND PHV: Intersection Peak (vehicle)



PED AND BIKE PEAK HOUR VOLUMES: Intersection Peak (vehicle)



DATA COLLECTION NOTES :



A. LEVEL OF SERVICE DEFINITIONS

All capacity analyses are based on the procedures specified by the Transportation Research Board, Special Report 209: Highway Capacity Manual (HCM), 2000. Levels of service (LOS) range from A to F. A brief description of each level of service for signalized and unsignalized intersections is provided below.

SIGNALIZED INTERSECTIONS

Level of service is based upon the traffic volume present in each lane on the roadway, the capacity of each lane at the intersection and the delay associated with each directional movement. The levels of service for signalized intersections are defined below:

- **LOS A** describes operations with very low average delay per vehicle, i.e., less than 10.0 seconds. This occurs when progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop. Short signal cycle lengths may also contribute to low delay.
- **LOS B** describes operations with average delay in the range of 10.1 to 20.0 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.
- **LOS C** describes operations with delay in the range of 20.1 to 35.0 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level although many still pass through the intersection without stopping. This is generally considered the lower end of the range of the acceptable level of service in rural areas.
- **LOS D** describes operations with delay in the range of 35.1 to 55.0 seconds per vehicle. At LOS D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, and/or high traffic volumes as compared to the roadway capacity. Many vehicles are required to stop and the number of vehicles that do not have to stop declines. Individual signal cycle failures, where all waiting vehicles do not clear the intersection during a single green time, are noticeable. This is generally considered the lower end of the range of the acceptable level of service in urban areas.
- **LOS E** describes operations with delay in the range of 55.1 to 80.0 seconds per vehicle. These higher delay values generally indicate poor progression, long cycle lengths, and high traffic volumes. Individual cycle failures are frequent occurrences. LOS E has been set as the limit of acceptable conditions.
- **LOS F** describes operations with average delay in excess of 80.0 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with over-saturation, i.e., when traffic arrives at a flow rate that exceeds the capacity of the intersection. It may also occur at high volumes with many individual cycle failures. Poor progression and long cycle lengths may also contribute to such delays.

UNSIGNALIZED INTERSECTIONS

At an unsignalized intersection, the major street through traffic and right turns are assumed to operate unimpeded and therefore receive no level of service rating. The level of service for the minor street and the major street left turn traffic is dependent on the volume and capacity of the available lanes, and, the number and frequency of acceptable gaps in the major street traffic to make a conflicting turn.

The level of service grade is provided for each conflicting movement at an unsignalized intersection and is based on the total average delay experienced by each vehicle. The delay includes the time it takes a vehicle to move from the back of a queue through the intersection.



The unsignalized intersection level of service analysis does not account for variations in driver behavior or the effects of nearby traffic signals. Therefore, the results from this analysis usually indicate worse levels of service than may be experienced in the field. The unsignalized intersection level of service descriptions are provided below:

- **LOS A** describes operations where there is very little to no conflicting traffic for a minor side street movement, i.e., an average total delay of less than 10.0 seconds per vehicle.
- **LOS B** describes operations with average total delay in the range of 10.1 to 15.0 seconds per vehicle.
- **LOS C** describes operations with average total delay in the range of 15.1 to 25.0 second per vehicle.
- **LOS D** describes operations with average total delay in the range of 25.1 to 35.0 seconds per vehicle.
- **LOS E** describes operations with average total delay in the range of 35.1 to 50.0 seconds per vehicle.
- **LOS F** describes operations with average total delay of 50 seconds per vehicle. LOS F exists when there are insufficient gaps of suitable size to allow a side street demand to cross safely through or enter a major street traffic stream. This level of service is generally evident from extremely long total delays experienced by side street traffic and by queuing on the minor approaches. It is important to note that LOS F may not always result in long queues but may result in adjustments to normal driver behavior.

Queues

5000 14th Street NW

13: Colorado Ave NW & 16th St NW
























Lane Group	NBL	NBT	SBL	SBT	NEL	NET	SWL	SWT
Lane Group Flow (vph)	3	1098	5	1896	28	71	152	105
v/c Ratio	0.05	0.51	0.02	0.88	0.08	0.14	0.42	0.21
Control Delay	22.3	27.6	9.0	24.9	33.2	25.9	40.4	33.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.3	27.6	9.0	24.9	33.2	25.9	40.4	33.9
Queue Length 50th (ft)	1	380	1	600	16	31	97	60
Queue Length 95th (ft)	m4	463	7	729	39	64	153	101
Internal Link Dist (ft)		656		1112		318		260
Turn Bay Length (ft)	70		40		100			
Base Capacity (vph)	60	2146	235	2152	337	491	359	502
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.51	0.02	0.88	0.08	0.14	0.42	0.21

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.














HCM Signalized Intersection Capacity Analysis
 13: Colorado Ave NW & 16th St NW

5000 14th Street NW

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	3	957	64	5	1733	68	24	30	31	129	82	8
Future Volume (vph)	3	957	64	5	1733	68	24	30	31	129	82	8
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	6.0		6.0	6.0		6.5	6.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		0.94	1.00		0.99	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.92		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1736	3426		1725	3441		1693	1738		1775	1844	
Flt Permitted	0.05	1.00		0.21	1.00		0.69	1.00		0.71	1.00	
Satd. Flow (perm)	97	3426		376	3441		1228	1738		1328	1844	
Peak-hour factor, PHF	0.93	0.93	0.93	0.95	0.95	0.95	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	3	1029	69	5	1824	72	28	35	36	152	96	9
RTOR Reduction (vph)	0	4	0	0	2	0	0	13	0	0	3	0
Lane Group Flow (vph)	3	1094	0	5	1894	0	28	58	0	152	102	0
Confl. Peds. (#/hr)	23		18	18		23	50		7	7		50
Confl. Bikes (#/hr)			2			6						3
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	0%	0%	0%	1%	1%	1%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	75.0	75.0		75.0	75.0		33.0	33.0		32.5	32.5	
Effective Green, g (s)	75.0	75.0		75.0	75.0		33.0	33.0		32.5	32.5	
Actuated g/C Ratio	0.62	0.62		0.62	0.62		0.28	0.28		0.27	0.27	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.5	6.5	
Lane Grp Cap (vph)	60	2141		235	2150		337	477		359	499	
v/s Ratio Prot		0.32			c0.55			0.03			0.06	
v/s Ratio Perm	0.03			0.01			0.02			c0.11		
v/c Ratio	0.05	0.51		0.02	0.88		0.08	0.12		0.42	0.20	
Uniform Delay, d1	8.7	12.4		8.6	18.8		32.3	32.6		36.0	33.8	
Progression Factor	2.16	2.15		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.5	0.8		0.2	5.6		0.5	0.5		3.6	0.9	
Delay (s)	20.3	27.5		8.7	24.4		32.8	33.1		39.7	34.7	
Level of Service	C	C		A	C		C	C		D	C	
Approach Delay (s)		27.5			24.3			33.0			37.6	
Approach LOS		C			C			C			D	
Intersection Summary												
HCM 2000 Control Delay			26.6			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.74									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)				12.5		
Intersection Capacity Utilization			87.7%			ICU Level of Service				E		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis
 14: Blagden Ave NW & 16th St NW

5000 14th Street NW

						
Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		 	 		 	
Traffic Volume (veh/h)	8	985	1762	80	6	6
Future Volume (Veh/h)	8	985	1762	80	6	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.88	0.88	0.96	0.96	0.85	0.85
Hourly flow rate (vph)	9	1119	1835	83	7	7
Pedestrians		8	1		20	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		3.5	3.5		3.5	
Percent Blockage		1	0		2	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		851	736			
pX, platoon unblocked	0.51				0.57	0.51
vC, conflicting volume	1938				2475	987
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	926				1198	0
tC, single (s)	4.2				7.0	7.1
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.4
p0 queue free %	98				92	99
cM capacity (veh/h)	362				92	531
Direction, Lane #	NB 1	NB 2	NB 3	SB 1	SB 2	NE 1
Volume Total	9	560	560	1223	695	14
Volume Left	9	0	0	0	0	7
Volume Right	0	0	0	0	83	7
cSH	362	1700	1700	1700	1700	157
Volume to Capacity	0.02	0.33	0.33	0.72	0.41	0.09
Queue Length 95th (ft)	2	0	0	0	0	7
Control Delay (s)	15.2	0.0	0.0	0.0	0.0	30.2
Lane LOS	C					D
Approach Delay (s)	0.1			0.0		30.2
Approach LOS						D
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			63.7%		ICU Level of Service	B
Analysis Period (min)			15			

Queues
15: 16th St NW & Decatur St NW

5000 14th Street NW






















Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	30	92	2	1077	43	1823
v/c Ratio	0.11	0.35	0.02	0.42	0.14	0.71
Control Delay	39.0	46.8	4.5	6.4	1.4	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.0	46.8	4.5	6.4	1.4	3.3
Queue Length 50th (ft)	17	50	0	142	1	16
Queue Length 95th (ft)	43	95	2	160	m2	87
Internal Link Dist (ft)	287	971		103		771
Turn Bay Length (ft)			60		60	
Base Capacity (vph)	279	266	111	2565	317	2571
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.35	0.02	0.42	0.14	0.71

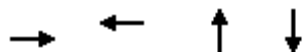
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
 15: 16th St NW & Decatur St NW

5000 14th Street NW

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	11	3	37	18	23	2	897	19	40	1688	7
Future Volume (vph)	11	11	3	37	18	23	2	897	19	40	1688	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frbp, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99			0.99		1.00	1.00		0.98	1.00	
Frt		0.98			0.96		1.00	1.00		1.00	1.00	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1802			1723		1736	3458		1709	3468	
Flt Permitted		0.88			0.84		0.08	1.00		0.24	1.00	
Satd. Flow (perm)		1616			1488		150	3458		428	3468	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.93	0.93	0.93
Adj. Flow (vph)	13	13	4	44	21	27	2	1055	22	43	1815	8
RTOR Reduction (vph)	0	3	0	0	12	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	27	0	0	80	0	2	1076	0	43	1823	0
Confl. Peds. (#/hr)	13		16	16		13	9		22	22		9
Confl. Bikes (#/hr)						1			2			6
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	4%	4%	4%	4%	4%	4%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			6				2
Permitted Phases	4			4			6			2		
Actuated Green, G (s)		20.5			20.5		89.0	89.0		89.0	89.0	
Effective Green, g (s)		20.5			20.5		89.0	89.0		89.0	89.0	
Actuated g/C Ratio		0.17			0.17		0.74	0.74		0.74	0.74	
Clearance Time (s)		5.5			5.5		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)		276			254		111	2564		317	2572	
v/s Ratio Prot								0.31				c0.53
v/s Ratio Perm		0.02			c0.05		0.01			0.10		
v/c Ratio		0.10			0.31		0.02	0.42		0.14	0.71	
Uniform Delay, d1		41.9			43.6		4.1	5.8		4.5	8.4	
Progression Factor		1.00			1.17		1.00	1.00		0.19	0.27	
Incremental Delay, d2		0.7			3.2		0.3	0.5		0.5	0.9	
Delay (s)		42.6			53.9		4.4	6.3		1.3	3.2	
Level of Service		D			D		A	A		A	A	
Approach Delay (s)		42.6			53.9			6.3			3.2	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			6.2				HCM 2000 Level of Service				A	
HCM 2000 Volume to Capacity ratio			0.63									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)				10.5		
Intersection Capacity Utilization			72.3%			ICU Level of Service				C		
Analysis Period (min)			15									
c Critical Lane Group												



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	50	7	260	628
v/c Ratio	0.12	0.01	0.24	0.52
Control Delay	14.1	0.0	8.6	12.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	14.1	0.0	8.6	12.1
Queue Length 50th (ft)	9	0	73	226
Queue Length 95th (ft)	37	0	111	309
Internal Link Dist (ft)	971	92	167	155
Turn Bay Length (ft)				
Base Capacity (vph)	402	671	1078	1202
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.12	0.01	0.24	0.52
Intersection Summary				

HCM Signalized Intersection Capacity Analysis
 16: 14th St NW & Decatur St NW/WMATA Garage

5000 14th Street NW



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	15	0	27	0	0	6	15	226	1	0	532	27
Future Volume (vph)	15	0	27	0	0	6	15	226	1	0	532	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5			5.0			5.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frbp, ped/bikes		0.97			0.96			1.00			0.99	
Flpb, ped/bikes		0.99			1.00			1.00			1.00	
Frt		0.91			0.86			1.00			0.99	
Flt Protected		0.98			1.00			1.00			1.00	
Satd. Flow (prot)		1641			865			1689			1800	
Flt Permitted		0.92			1.00			0.95			1.00	
Satd. Flow (perm)		1538			865			1618			1800	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.93	0.93	0.93	0.89	0.89	0.89
Adj. Flow (vph)	18	0	32	0	0	7	16	243	1	0	598	30
RTOR Reduction (vph)	0	24	0	0	5	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	26	0	0	2	0	0	260	0	0	626	0
Confl. Peds. (#/hr)	5		15	15		5	29		30	30		29
Confl. Bikes (#/hr)									5			53
Heavy Vehicles (%)	0%	0%	0%	83%	83%	83%	12%	12%	12%	4%	4%	4%
Turn Type	Perm	NA			NA		Perm	NA			NA	
Protected Phases		8			4			2			6	
Permitted Phases	8			4			2			6		
Actuated Green, G (s)		29.5			29.5			80.0			80.0	
Effective Green, g (s)		29.5			29.5			80.0			80.0	
Actuated g/C Ratio		0.25			0.25			0.67			0.67	
Clearance Time (s)		5.5			5.5			5.0			5.0	
Lane Grp Cap (vph)		378			212			1078			1200	
v/s Ratio Prot					0.00						c0.35	
v/s Ratio Perm		c0.02						0.16				
v/c Ratio		0.07			0.01			0.24			0.52	
Uniform Delay, d1		34.7			34.2			7.9			10.2	
Progression Factor		0.77			1.00			1.00			1.00	
Incremental Delay, d2		0.3			0.1			0.5			1.6	
Delay (s)		27.1			34.3			8.5			11.8	
Level of Service		C			C			A			B	
Approach Delay (s)		27.1			34.3			8.5			11.8	
Approach LOS		C			C			A			B	

Intersection Summary

HCM 2000 Control Delay	11.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

13: Colorado Ave NW & 16th St NW























Lane Group	NBL	NBT	SBL	SBT	NEL	NET	SWL	SWT
Lane Group Flow (vph)	3	1114	5	1925	28	71	153	105
v/c Ratio	0.05	0.52	0.02	0.89	0.08	0.14	0.43	0.21
Control Delay	21.3	27.8	9.0	26.0	33.2	26.3	40.5	33.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.3	27.8	9.0	26.0	33.2	26.3	40.5	33.9
Queue Length 50th (ft)	1	388	1	621	16	31	98	60
Queue Length 95th (ft)	m4	474	7	754	39	65	153	101
Internal Link Dist (ft)		656		1112		318		260
Turn Bay Length (ft)	70		40		100			
Base Capacity (vph)	60	2146	229	2152	337	490	359	502
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.52	0.02	0.89	0.08	0.14	0.43	0.21

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.














HCM Signalized Intersection Capacity Analysis
 13: Colorado Ave NW & 16th St NW

5000 14th Street NW

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	3	971	65	5	1759	69	24	30	31	130	82	8
Future Volume (vph)	3	971	65	5	1759	69	24	30	31	130	82	8
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	6.0		6.0	6.0		6.5	6.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		0.94	1.00		0.99	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.92		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1736	3426		1726	3441		1693	1738		1775	1844	
Flt Permitted	0.05	1.00		0.20	1.00		0.69	1.00		0.71	1.00	
Satd. Flow (perm)	97	3426		367	3441		1228	1738		1328	1844	
Peak-hour factor, PHF	0.93	0.93	0.93	0.95	0.95	0.95	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	3	1044	70	5	1852	73	28	35	36	153	96	9
RTOR Reduction (vph)	0	4	0	0	2	0	0	12	0	0	3	0
Lane Group Flow (vph)	3	1110	0	5	1923	0	28	59	0	153	102	0
Confl. Peds. (#/hr)	23		18	18		23	50		7	7		50
Confl. Bikes (#/hr)			2			6						3
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	0%	0%	0%	1%	1%	1%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	75.0	75.0		75.0	75.0		33.0	33.0		32.5	32.5	
Effective Green, g (s)	75.0	75.0		75.0	75.0		33.0	33.0		32.5	32.5	
Actuated g/C Ratio	0.62	0.62		0.62	0.62		0.28	0.28		0.27	0.27	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.5	6.5	
Lane Grp Cap (vph)	60	2141		229	2150		337	477		359	499	
v/s Ratio Prot		0.32			c0.56			0.03			0.06	
v/s Ratio Perm	0.03			0.01			0.02			c0.12		
v/c Ratio	0.05	0.52		0.02	0.89		0.08	0.12		0.43	0.20	
Uniform Delay, d1	8.7	12.5		8.6	19.1		32.3	32.6		36.1	33.8	
Progression Factor	2.07	2.16		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.5	0.8		0.2	6.3		0.5	0.5		3.7	0.9	
Delay (s)	19.5	27.7		8.7	25.4		32.8	33.2		39.7	34.7	
Level of Service	B	C		A	C		C	C		D	C	
Approach Delay (s)		27.7			25.3			33.1			37.7	
Approach LOS		C			C			C			D	
Intersection Summary												
HCM 2000 Control Delay			27.3	HCM 2000 Level of Service				C				
HCM 2000 Volume to Capacity ratio			0.75									
Actuated Cycle Length (s)			120.0	Sum of lost time (s)				12.5				
Intersection Capacity Utilization			88.4%	ICU Level of Service				E				
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Unsignalized Intersection Capacity Analysis
 14: Blagden Ave NW & 16th St NW

5000 14th Street NW

						
Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		 	 		 	
Traffic Volume (veh/h)	8	1000	1789	81	6	6
Future Volume (Veh/h)	8	1000	1789	81	6	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.88	0.88	0.96	0.96	0.85	0.85
Hourly flow rate (vph)	9	1136	1864	84	7	7
Pedestrians		8	1		20	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		3.5	3.5		3.5	
Percent Blockage		1	0		2	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		851	736			
pX, platoon unblocked	0.49				0.55	0.49
vC, conflicting volume	1968				2513	1002
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	902				1178	0
tC, single (s)	4.2				7.0	7.1
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.4
p0 queue free %	97				92	99
cM capacity (veh/h)	356				92	510
Direction, Lane #	NB 1	NB 2	NB 3	SB 1	SB 2	NE 1
Volume Total	9	568	568	1243	705	14
Volume Left	9	0	0	0	0	7
Volume Right	0	0	0	0	84	7
cSH	356	1700	1700	1700	1700	156
Volume to Capacity	0.03	0.33	0.33	0.73	0.41	0.09
Queue Length 95th (ft)	2	0	0	0	0	7
Control Delay (s)	15.4	0.0	0.0	0.0	0.0	30.4
Lane LOS	C					D
Approach Delay (s)	0.1			0.0		30.4
Approach LOS						D
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			64.5%		ICU Level of Service	C
Analysis Period (min)			15			

Queues
15: 16th St NW & Decatur St NW

5000 14th Street NW



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	30	92	2	1094	44	1850
v/c Ratio	0.11	0.35	0.02	0.43	0.14	0.72
Control Delay	39.0	46.9	4.5	6.4	1.4	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.0	46.9	4.5	6.4	1.4	3.4
Queue Length 50th (ft)	17	50	0	145	1	16
Queue Length 95th (ft)	43	95	3	163	m2	93
Internal Link Dist (ft)	287	971		103		771
Turn Bay Length (ft)			60		60	
Base Capacity (vph)	279	266	105	2565	311	2571
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.35	0.02	0.43	0.14	0.72

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
 15: 16th St NW & Decatur St NW

5000 14th Street NW

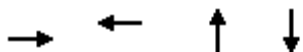


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕		↗	↕	
Traffic Volume (vph)	11	11	3	37	18	23	2	911	19	41	1713	7
Future Volume (vph)	11	11	3	37	18	23	2	911	19	41	1713	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frbp, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99			0.99		1.00	1.00		0.99	1.00	
Frt		0.98			0.96		1.00	1.00		1.00	1.00	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1802			1723		1736	3458		1710	3468	
Flt Permitted		0.88			0.84		0.08	1.00		0.23	1.00	
Satd. Flow (perm)		1616			1488		143	3458		419	3468	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.93	0.93	0.93
Adj. Flow (vph)	13	13	4	44	21	27	2	1072	22	44	1842	8
RTOR Reduction (vph)	0	3	0	0	12	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	27	0	0	80	0	2	1093	0	44	1850	0
Confl. Peds. (#/hr)	13		16	16		13	9		22	22		9
Confl. Bikes (#/hr)						1			2			6
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	4%	4%	4%	4%	4%	4%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			6				2
Permitted Phases	4			4			6			2		
Actuated Green, G (s)		20.5			20.5		89.0	89.0		89.0	89.0	
Effective Green, g (s)		20.5			20.5		89.0	89.0		89.0	89.0	
Actuated g/C Ratio		0.17			0.17		0.74	0.74		0.74	0.74	
Clearance Time (s)		5.5			5.5		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)		276			254		106	2564		310	2572	
v/s Ratio Prot								0.32			c0.53	
v/s Ratio Perm		0.02			c0.05		0.01			0.10		
v/c Ratio		0.10			0.31		0.02	0.43		0.14	0.72	
Uniform Delay, d1		41.9			43.6		4.1	5.9		4.5	8.6	
Progression Factor		1.00			1.17		1.00	1.00		0.19	0.28	
Incremental Delay, d2		0.7			3.2		0.3	0.5		0.5	0.9	
Delay (s)		42.6			54.1		4.4	6.4		1.3	3.3	
Level of Service		D			D		A	A		A	A	
Approach Delay (s)		42.6			54.1			6.4			3.3	
Approach LOS		D			D			A			A	

Intersection Summary

HCM 2000 Control Delay	6.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	73.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	50	7	262	632
v/c Ratio	0.12	0.01	0.24	0.53
Control Delay	14.3	0.0	8.6	12.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	14.3	0.0	8.6	12.1
Queue Length 50th (ft)	9	0	74	228
Queue Length 95th (ft)	38	0	112	312
Internal Link Dist (ft)	971	92	167	155
Turn Bay Length (ft)				
Base Capacity (vph)	402	670	1078	1202
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.12	0.01	0.24	0.53
Intersection Summary				

HCM Signalized Intersection Capacity Analysis
 16: 14th St NW & Decatur St NW/WMATA Garage

5000 14th Street NW



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	15	0	27	0	0	6	15	228	1	0	536	27
Future Volume (vph)	15	0	27	0	0	6	15	228	1	0	536	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5			5.0			5.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frbp, ped/bikes		0.97			0.96			1.00			0.99	
Flpb, ped/bikes		0.99			1.00			1.00			1.00	
Frt		0.91			0.86			1.00			0.99	
Flt Protected		0.98			1.00			1.00			1.00	
Satd. Flow (prot)		1641			865			1689			1800	
Flt Permitted		0.92			1.00			0.95			1.00	
Satd. Flow (perm)		1538			865			1618			1800	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.93	0.93	0.93	0.89	0.89	0.89
Adj. Flow (vph)	18	0	32	0	0	7	16	245	1	0	602	30
RTOR Reduction (vph)	0	24	0	0	5	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	26	0	0	2	0	0	262	0	0	631	0
Confl. Peds. (#/hr)	5		15	15		5	29		30	30		29
Confl. Bikes (#/hr)									5			53
Heavy Vehicles (%)	0%	0%	0%	83%	83%	83%	12%	12%	12%	4%	4%	4%
Turn Type	Perm	NA			NA		Perm	NA			NA	
Protected Phases		8			4			2			6	
Permitted Phases	8			4			2			6		
Actuated Green, G (s)		29.5			29.5			80.0			80.0	
Effective Green, g (s)		29.5			29.5			80.0			80.0	
Actuated g/C Ratio		0.25			0.25			0.67			0.67	
Clearance Time (s)		5.5			5.5			5.0			5.0	
Lane Grp Cap (vph)		378			212			1078			1200	
v/s Ratio Prot					0.00						c0.35	
v/s Ratio Perm		c0.02						0.16				
v/c Ratio		0.07			0.01			0.24			0.53	
Uniform Delay, d1		34.7			34.2			8.0			10.3	
Progression Factor		0.78			1.00			1.00			1.00	
Incremental Delay, d2		0.3			0.1			0.5			1.6	
Delay (s)		27.4			34.3			8.5			11.9	
Level of Service		C			C			A			B	
Approach Delay (s)		27.4			34.3			8.5			11.9	
Approach LOS		C			C			A			B	

Intersection Summary

HCM 2000 Control Delay	11.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	53.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

13: Colorado Ave NW & 16th St NW
























Lane Group	NBL	NBT	SBL	SBT	NEL	NET	SWL	SWT
Lane Group Flow (vph)	3	1127	5	1948	28	71	153	105
v/c Ratio	0.05	0.53	0.02	0.91	0.08	0.15	0.43	0.21
Control Delay	21.3	27.8	9.0	26.9	33.2	26.6	40.5	33.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.3	27.8	9.0	26.9	33.2	26.6	40.5	33.9
Queue Length 50th (ft)	1	393	1	638	16	32	98	60
Queue Length 95th (ft)	m3	480	7	776	39	65	153	101
Internal Link Dist (ft)		656		1112		318		260
Turn Bay Length (ft)	70		40		100			
Base Capacity (vph)	60	2146	225	2152	337	489	359	502
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.53	0.02	0.91	0.08	0.15	0.43	0.21

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.














HCM Signalized Intersection Capacity Analysis
 13: Colorado Ave NW & 16th St NW

5000 14th Street NW

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	3	983	65	5	1781	69	24	30	31	130	82	8
Future Volume (vph)	3	983	65	5	1781	69	24	30	31	130	82	8
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	6.0		6.0	6.0		6.5	6.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		0.94	1.00		0.99	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.92		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1736	3427		1726	3441		1693	1738		1775	1844	
Flt Permitted	0.05	1.00		0.20	1.00		0.69	1.00		0.71	1.00	
Satd. Flow (perm)	97	3427		360	3441		1228	1738		1328	1844	
Peak-hour factor, PHF	0.93	0.93	0.93	0.95	0.95	0.95	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	3	1057	70	5	1875	73	28	35	36	153	96	9
RTOR Reduction (vph)	0	4	0	0	2	0	0	12	0	0	3	0
Lane Group Flow (vph)	3	1123	0	5	1946	0	28	59	0	153	102	0
Confl. Peds. (#/hr)	23		18	18		23	50		7	7		50
Confl. Bikes (#/hr)			2			6						3
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	0%	0%	0%	1%	1%	1%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	75.0	75.0		75.0	75.0		33.0	33.0		32.5	32.5	
Effective Green, g (s)	75.0	75.0		75.0	75.0		33.0	33.0		32.5	32.5	
Actuated g/C Ratio	0.62	0.62		0.62	0.62		0.28	0.28		0.27	0.27	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.5	6.5	
Lane Grp Cap (vph)	60	2141		225	2150		337	477		359	499	
v/s Ratio Prot		0.33			c0.57			0.03			0.06	
v/s Ratio Perm	0.03			0.01			0.02			c0.12		
v/c Ratio	0.05	0.52		0.02	0.91		0.08	0.12		0.43	0.20	
Uniform Delay, d1	8.7	12.6		8.6	19.4		32.3	32.7		36.1	33.8	
Progression Factor	2.06	2.14		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.5	0.9		0.2	6.9		0.5	0.5		3.7	0.9	
Delay (s)	19.4	27.7		8.7	26.3		32.8	33.2		39.7	34.7	
Level of Service	B	C		A	C		C	C		D	C	
Approach Delay (s)		27.7			26.3			33.1			37.7	
Approach LOS		C			C			C			D	
Intersection Summary												
HCM 2000 Control Delay			27.8			HCM 2000 Level of Service		C				
HCM 2000 Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)		12.5				
Intersection Capacity Utilization			89.0%			ICU Level of Service		E				
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis
 14: Blagden Ave NW & 16th St NW

5000 14th Street NW

						
Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		 	 		 	
Traffic Volume (veh/h)	9	1011	1789	81	7	6
Future Volume (Veh/h)	9	1011	1789	81	7	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.88	0.88	0.96	0.96	0.85	0.85
Hourly flow rate (vph)	10	1149	1864	84	8	7
Pedestrians		8	1		20	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		3.5	3.5		3.5	
Percent Blockage		1	0		2	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		851	736			
pX, platoon unblocked	0.48				0.54	0.48
vC, conflicting volume	1968				2522	1002
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	851				1143	0
tC, single (s)	4.2				7.0	7.1
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.4
p0 queue free %	97				92	99
cM capacity (veh/h)	363				95	498
Direction, Lane #	NB 1	NB 2	NB 3	SB 1	SB 2	NE 1
Volume Total	10	574	574	1243	705	15
Volume Left	10	0	0	0	0	8
Volume Right	0	0	0	0	84	7
cSH	363	1700	1700	1700	1700	152
Volume to Capacity	0.03	0.34	0.34	0.73	0.41	0.10
Queue Length 95th (ft)	2	0	0	0	0	8
Control Delay (s)	15.2	0.0	0.0	0.0	0.0	31.2
Lane LOS	C					D
Approach Delay (s)	0.1			0.0		31.2
Approach LOS						D
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			64.5%		ICU Level of Service	C
Analysis Period (min)			15			

Queues
15: 16th St NW & Decatur St NW

5000 14th Street NW



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	31	105	2	1106	44	1852
v/c Ratio	0.11	0.41	0.02	0.43	0.14	0.72
Control Delay	39.1	49.5	4.5	6.5	1.4	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.1	49.5	4.5	6.5	1.4	3.3
Queue Length 50th (ft)	18	61	0	147	1	16
Queue Length 95th (ft)	44	109	3	166	m2	92
Internal Link Dist (ft)	287	971		103		771
Turn Bay Length (ft)			60		60	
Base Capacity (vph)	279	258	105	2563	306	2571
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.41	0.02	0.43	0.14	0.72

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
 15: 16th St NW & Decatur St NW

5000 14th Street NW



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕		↗	↕	
Traffic Volume (vph)	11	12	3	48	19	23	2	917	23	41	1715	7
Future Volume (vph)	11	12	3	48	19	23	2	917	23	41	1715	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frbp, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99			0.99		1.00	1.00		0.99	1.00	
Frt		0.98			0.97		1.00	1.00		1.00	1.00	
Flt Protected		0.98			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1806			1726		1736	3455		1711	3468	
Flt Permitted		0.88			0.82		0.08	1.00		0.23	1.00	
Satd. Flow (perm)		1617			1451		142	3455		413	3468	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.93	0.93	0.93
Adj. Flow (vph)	13	14	4	56	22	27	2	1079	27	44	1844	8
RTOR Reduction (vph)	0	3	0	0	11	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	28	0	0	94	0	2	1104	0	44	1852	0
Confl. Peds. (#/hr)	13		16	16			13	9		22	22	9
Confl. Bikes (#/hr)							1			2		6
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	4%	4%	4%	4%	4%	4%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			6				2
Permitted Phases	4			4			6			2		
Actuated Green, G (s)		20.5			20.5		89.0	89.0		89.0	89.0	
Effective Green, g (s)		20.5			20.5		89.0	89.0		89.0	89.0	
Actuated g/C Ratio		0.17			0.17		0.74	0.74		0.74	0.74	
Clearance Time (s)		5.5			5.5		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)		276			247		105	2562		306	2572	
v/s Ratio Prot								0.32			c0.53	
v/s Ratio Perm		0.02			c0.06		0.01			0.11		
v/c Ratio		0.10			0.38		0.02	0.43		0.14	0.72	
Uniform Delay, d1		42.0			44.1		4.1	5.9		4.5	8.6	
Progression Factor		1.00			1.14		1.00	1.00		0.19	0.27	
Incremental Delay, d2		0.7			4.4		0.3	0.5		0.5	0.9	
Delay (s)		42.7			54.6		4.4	6.4		1.4	3.2	
Level of Service		D			D		A	A		A	A	
Approach Delay (s)		42.7			54.6			6.4			3.2	
Approach LOS		D			D			A			A	

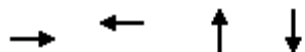
Intersection Summary

HCM 2000 Control Delay	6.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Queues
 16: 14th St NW & Decatur St NW/WMATA Garage

5000 14th Street NW



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	56	7	280	648
v/c Ratio	0.14	0.01	0.26	0.54
Control Delay	15.7	0.0	8.8	12.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	15.7	0.0	8.8	12.4
Queue Length 50th (ft)	12	0	80	238
Queue Length 95th (ft)	43	0	121	324
Internal Link Dist (ft)	971	92	167	155
Turn Bay Length (ft)				
Base Capacity (vph)	398	654	1082	1202
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.14	0.01	0.26	0.54
Intersection Summary				

HCM Signalized Intersection Capacity Analysis
 16: 14th St NW & Decatur St NW/WMATA Garage

5000 14th Street NW



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	20	0	27	0	0	6	15	245	1	0	550	27
Future Volume (vph)	20	0	27	0	0	6	15	245	1	0	550	27
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5			5.0			5.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frbp, ped/bikes		0.97			0.96			1.00			0.99	
Flpb, ped/bikes		0.99			1.00			1.00			1.00	
Frt		0.92			0.86			1.00			0.99	
Flt Protected		0.98			1.00			1.00			1.00	
Satd. Flow (prot)		1656			865			1690			1801	
Flt Permitted		0.90			1.00			0.96			1.00	
Satd. Flow (perm)		1520			865			1621			1801	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.93	0.93	0.93	0.89	0.89	0.89
Adj. Flow (vph)	24	0	32	0	0	7	16	263	1	0	618	30
RTOR Reduction (vph)	0	24	0	0	5	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	32	0	0	2	0	0	280	0	0	647	0
Confl. Peds. (#/hr)	5		15	15		5	29		30	30		29
Confl. Bikes (#/hr)									5			53
Heavy Vehicles (%)	0%	0%	0%	83%	83%	83%	12%	12%	12%	4%	4%	4%
Turn Type	Perm	NA			NA		Perm	NA			NA	
Protected Phases		8			4			2			6	
Permitted Phases	8			4			2			6		
Actuated Green, G (s)		29.5			29.5			80.0			80.0	
Effective Green, g (s)		29.5			29.5			80.0			80.0	
Actuated g/C Ratio		0.25			0.25			0.67			0.67	
Clearance Time (s)		5.5			5.5			5.0			5.0	
Lane Grp Cap (vph)		373			212			1080			1200	
v/s Ratio Prot					0.00						c0.36	
v/s Ratio Perm		c0.02						0.17				
v/c Ratio		0.09			0.01			0.26			0.54	
Uniform Delay, d1		34.9			34.2			8.1			10.4	
Progression Factor		0.79			1.00			1.00			1.00	
Incremental Delay, d2		0.4			0.1			0.6			1.7	
Delay (s)		28.1			34.3			8.6			12.1	
Level of Service		C			C			A			B	
Approach Delay (s)		28.1			34.3			8.6			12.1	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	12.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	54.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Queues
13: Colorado Ave NW & 16th St NW

5000 14th Street NW



Lane Group	NBL	NBT	SBL	SBT	NEL	NET	SWL	SWT
Lane Group Flow (vph)	3	1156	5	1997	28	74	155	108
v/c Ratio	0.05	0.54	0.02	0.93	0.08	0.15	0.43	0.22
Control Delay	22.0	28.1	9.0	29.2	33.2	27.2	40.7	34.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.0	28.1	9.0	29.2	33.2	27.2	40.7	34.0
Queue Length 50th (ft)	1	407	1	675	16	34	99	62
Queue Length 95th (ft)	m3	496	7	#834	39	69	155	105
Internal Link Dist (ft)		656		1112		318		260
Turn Bay Length (ft)	70		40		100			
Base Capacity (vph)	60	2146	215	2152	336	488	358	502
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.54	0.02	0.93	0.08	0.15	0.43	0.22

Intersection Summary





















95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.














HCM Signalized Intersection Capacity Analysis
 13: Colorado Ave NW & 16th St NW

5000 14th Street NW

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	3	1008	67	5	1826	71	24	31	32	132	84	8
Future Volume (vph)	3	1008	67	5	1826	71	24	31	32	132	84	8
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.5	6.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		0.94	1.00		0.99	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.92		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1736	3426		1726	3441		1693	1736		1775	1845	
Flt Permitted	0.05	1.00		0.19	1.00		0.69	1.00		0.71	1.00	
Satd. Flow (perm)	97	3426		345	3441		1225	1736		1324	1845	
Peak-hour factor, PHF	0.93	0.93	0.93	0.95	0.95	0.95	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	3	1084	72	5	1922	75	28	36	38	155	99	9
RTOR Reduction (vph)	0	4	0	0	2	0	0	11	0	0	3	0
Lane Group Flow (vph)	3	1152	0	5	1995	0	28	63	0	155	105	0
Confl. Peds. (#/hr)	23		18	18		23	50		7	7		50
Confl. Bikes (#/hr)			2			6						3
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	0%	0%	0%	1%	1%	1%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	75.0	75.0		75.0	75.0		33.0	33.0		32.5	32.5	
Effective Green, g (s)	75.0	75.0		75.0	75.0		33.0	33.0		32.5	32.5	
Actuated g/C Ratio	0.62	0.62		0.62	0.62		0.28	0.28		0.27	0.27	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.5	6.5	
Lane Grp Cap (vph)	60	2141		215	2150		336	477		358	499	
v/s Ratio Prot		0.34			c0.58			0.04			0.06	
v/s Ratio Perm	0.03			0.01			0.02			c0.12		
v/c Ratio	0.05	0.54		0.02	0.93		0.08	0.13		0.43	0.21	
Uniform Delay, d1	8.7	12.7		8.6	20.1		32.3	32.7		36.1	33.8	
Progression Factor	2.13	2.13		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.5	0.9		0.2	8.5		0.5	0.6		3.8	1.0	
Delay (s)	20.0	28.0		8.8	28.6		32.8	33.3		39.9	34.8	
Level of Service	B	C		A	C		C	C		D	C	
Approach Delay (s)		28.0			28.6			33.2			37.8	
Approach LOS		C			C			C			D	
Intersection Summary												
HCM 2000 Control Delay			29.2			HCM 2000 Level of Service		C				
HCM 2000 Volume to Capacity ratio			0.78									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)		12.5				
Intersection Capacity Utilization			90.3%			ICU Level of Service		E				
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis
 14: Blagden Ave NW & 16th St NW

5000 14th Street NW

						
Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		 	 		 	
Traffic Volume (veh/h)	9	1036	1834	83	7	6
Future Volume (Veh/h)	9	1036	1834	83	7	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.88	0.88	0.96	0.96	0.85	0.85
Hourly flow rate (vph)	10	1177	1910	86	8	7
Pedestrians		8	1		20	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		3.5	3.5		3.5	
Percent Blockage		1	0		2	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		851	736			
pX, platoon unblocked	0.44				0.50	0.44
vC, conflicting volume	2016				2582	1026
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	783				1088	0
tC, single (s)	4.2				7.0	7.1
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.4
p0 queue free %	97				92	98
cM capacity (veh/h)	356				96	460
Direction, Lane #	NB 1	NB 2	NB 3	SB 1	SB 2	NE 1
Volume Total	10	588	588	1273	723	15
Volume Left	10	0	0	0	0	8
Volume Right	0	0	0	0	86	7
cSH	356	1700	1700	1700	1700	153
Volume to Capacity	0.03	0.35	0.35	0.75	0.43	0.10
Queue Length 95th (ft)	2	0	0	0	0	8
Control Delay (s)	15.4	0.0	0.0	0.0	0.0	31.1
Lane LOS	C					D
Approach Delay (s)	0.1			0.0		31.1
Approach LOS						D
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			65.8%		ICU Level of Service	C
Analysis Period (min)			15			

Queues
15: 16th St NW & Decatur St NW

5000 14th Street NW



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	31	113	2	1134	45	1899
v/c Ratio	0.11	0.43	0.02	0.44	0.15	0.74
Control Delay	39.1	49.8	4.5	6.6	1.4	3.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.1	49.8	4.5	6.6	1.4	3.5
Queue Length 50th (ft)	18	65	0	153	1	16
Queue Length 95th (ft)	44	116	3	171	m2	m104
Internal Link Dist (ft)	287	971		103		771
Turn Bay Length (ft)			60		60	
Base Capacity (vph)	279	260	97	2563	296	2571
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.43	0.02	0.44	0.15	0.74

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
 15: 16th St NW & Decatur St NW

5000 14th Street NW



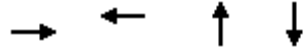
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕		↗	↕	
Traffic Volume (vph)	11	12	3	49	19	28	2	940	24	42	1759	7
Future Volume (vph)	11	12	3	49	19	28	2	940	24	42	1759	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frbp, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99			0.99		1.00	1.00		0.99	1.00	
Frt		0.98			0.96		1.00	1.00		1.00	1.00	
Flt Protected		0.98			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1806			1719		1736	3455		1713	3468	
Flt Permitted		0.87			0.82		0.07	1.00		0.22	1.00	
Satd. Flow (perm)		1613			1450		131	3455		399	3468	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.93	0.93	0.93
Adj. Flow (vph)	13	14	4	58	22	33	2	1106	28	45	1891	8
RTOR Reduction (vph)	0	3	0	0	12	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	28	0	0	101	0	2	1132	0	45	1899	0
Confl. Peds. (#/hr)	13		16	16			13	9		22	22	9
Confl. Bikes (#/hr)							1			2		6
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	4%	4%	4%	4%	4%	4%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			6				2
Permitted Phases	4			4			6			2		
Actuated Green, G (s)		20.5			20.5		89.0	89.0		89.0	89.0	
Effective Green, g (s)		20.5			20.5		89.0	89.0		89.0	89.0	
Actuated g/C Ratio		0.17			0.17		0.74	0.74		0.74	0.74	
Clearance Time (s)		5.5			5.5		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)		275			247		97	2562		295	2572	
v/s Ratio Prot								0.33				c0.55
v/s Ratio Perm		0.02			c0.07		0.02			0.11		
v/c Ratio		0.10			0.41		0.02	0.44		0.15	0.74	
Uniform Delay, d1		42.0			44.3		4.1	6.0		4.5	8.8	
Progression Factor		1.00			1.14		1.00	1.00		0.19	0.28	
Incremental Delay, d2		0.7			4.9		0.4	0.6		0.5	0.9	
Delay (s)		42.7			55.3		4.5	6.5		1.4	3.4	
Level of Service		D			E		A	A		A	A	
Approach Delay (s)		42.7			55.3			6.5			3.3	
Approach LOS		D			E			A			A	

Intersection Summary		
HCM 2000 Control Delay	6.7	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.68	A
Actuated Cycle Length (s)	120.0	Sum of lost time (s)
Intersection Capacity Utilization	74.3%	10.5
Analysis Period (min)	15	ICU Level of Service
		D

c Critical Lane Group

Queues
 16: 14th St NW & Decatur St NW/WMATA Garage

5000 14th Street NW



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	57	7	284	657
v/c Ratio	0.14	0.01	0.26	0.55
Control Delay	15.5	0.0	8.8	12.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	15.5	0.0	8.8	12.5
Queue Length 50th (ft)	12	0	81	243
Queue Length 95th (ft)	43	0	122	330
Internal Link Dist (ft)	971	92	167	155
Turn Bay Length (ft)				
Base Capacity (vph)	398	651	1082	1202
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.14	0.01	0.26	0.55

Intersection Summary

HCM Signalized Intersection Capacity Analysis
 16: 14th St NW & Decatur St NW/WMATA Garage

5000 14th Street NW



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	20	0	28	0	0	6	15	248	1	0	557	28
Future Volume (vph)	20	0	28	0	0	6	15	248	1	0	557	28
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5			5.0			5.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frbp, ped/bikes		0.97			0.96			1.00			0.99	
Flpb, ped/bikes		0.99			1.00			1.00			1.00	
Frt		0.92			0.86			1.00			0.99	
Flt Protected		0.98			1.00			1.00			1.00	
Satd. Flow (prot)		1654			865			1690			1800	
Flt Permitted		0.90			1.00			0.96			1.00	
Satd. Flow (perm)		1521			865			1621			1800	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.93	0.93	0.93	0.89	0.89	0.89
Adj. Flow (vph)	24	0	33	0	0	7	16	267	1	0	626	31
RTOR Reduction (vph)	0	25	0	0	5	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	32	0	0	2	0	0	284	0	0	656	0
Confl. Peds. (#/hr)	5		15	15		5	29		30	30		29
Confl. Bikes (#/hr)									5			53
Heavy Vehicles (%)	0%	0%	0%	83%	83%	83%	12%	12%	12%	4%	4%	4%
Turn Type	Perm	NA			NA		Perm	NA			NA	
Protected Phases		8			4			2			6	
Permitted Phases	8			4			2			6		
Actuated Green, G (s)		29.5			29.5			80.0			80.0	
Effective Green, g (s)		29.5			29.5			80.0			80.0	
Actuated g/C Ratio		0.25			0.25			0.67			0.67	
Clearance Time (s)		5.5			5.5			5.0			5.0	
Lane Grp Cap (vph)		373			212			1080			1200	
v/s Ratio Prot					0.00						c0.36	
v/s Ratio Perm		c0.02						0.18				
v/c Ratio		0.09			0.01			0.26			0.55	
Uniform Delay, d1		34.9			34.2			8.1			10.5	
Progression Factor		0.80			1.00			1.00			1.00	
Incremental Delay, d2		0.4			0.1			0.6			1.8	
Delay (s)		28.2			34.3			8.7			12.3	
Level of Service		C			C			A			B	
Approach Delay (s)		28.2			34.3			8.7			12.3	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	12.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	54.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Queues
13: Colorado Ave NW & 16th St NW

5000 14th Street NW



Lane Group	NBL	NBT	SBL	SBT	NEL	NET	SWL	SWT
Lane Group Flow (vph)	3	1164	5	2014	28	74	155	108
v/c Ratio	0.05	0.54	0.02	0.94	0.08	0.15	0.43	0.22
Control Delay	22.0	28.3	9.0	30.1	33.2	27.6	40.7	34.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.0	28.3	9.0	30.1	33.2	27.6	40.7	34.0
Queue Length 50th (ft)	1	412	1	690	16	35	99	62
Queue Length 95th (ft)	m3	503	7	#871	39	69	155	105
Internal Link Dist (ft)		656		1112		318		260
Turn Bay Length (ft)	70		40		100			
Base Capacity (vph)	60	2146	212	2152	336	487	358	502
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.54	0.02	0.94	0.08	0.15	0.43	0.22

Intersection Summary























95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.














HCM Signalized Intersection Capacity Analysis
 13: Colorado Ave NW & 16th St NW

5000 14th Street NW

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		 			 							
Traffic Volume (vph)	3	1016	67	5	1842	71	24	31	32	132	84	8
Future Volume (vph)	3	1016	67	5	1842	71	24	31	32	132	84	8
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.5	6.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		0.94	1.00		0.99	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.92		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1736	3427		1727	3441		1693	1736		1775	1845	
Flt Permitted	0.05	1.00		0.19	1.00		0.69	1.00		0.71	1.00	
Satd. Flow (perm)	97	3427		341	3441		1225	1736		1324	1845	
Peak-hour factor, PHF	0.93	0.93	0.93	0.95	0.95	0.95	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	3	1092	72	5	1939	75	28	36	38	155	99	9
RTOR Reduction (vph)	0	4	0	0	2	0	0	10	0	0	3	0
Lane Group Flow (vph)	3	1160	0	5	2012	0	28	64	0	155	105	0
Confl. Peds. (#/hr)	23		18	18		23	50		7	7		50
Confl. Bikes (#/hr)			2			6						3
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	0%	0%	0%	1%	1%	1%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	75.0	75.0		75.0	75.0		33.0	33.0		32.5	32.5	
Effective Green, g (s)	75.0	75.0		75.0	75.0		33.0	33.0		32.5	32.5	
Actuated g/C Ratio	0.62	0.62		0.62	0.62		0.28	0.28		0.27	0.27	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.5	6.5	
Lane Grp Cap (vph)	60	2141		213	2150		336	477		358	499	
v/s Ratio Prot		0.34			c0.58			0.04			0.06	
v/s Ratio Perm	0.03			0.01			0.02			c0.12		
v/c Ratio	0.05	0.54		0.02	0.94		0.08	0.13		0.43	0.21	
Uniform Delay, d1	8.7	12.8		8.6	20.3		32.3	32.7		36.1	33.8	
Progression Factor	2.14	2.14		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.5	0.9		0.2	9.2		0.5	0.6		3.8	1.0	
Delay (s)	20.1	28.2		8.8	29.6		32.8	33.3		39.9	34.8	
Level of Service	C	C		A	C		C	C		D	C	
Approach Delay (s)		28.2			29.5			33.2			37.8	
Approach LOS		C			C			C			D	
Intersection Summary												
HCM 2000 Control Delay			29.8	HCM 2000 Level of Service				C				
HCM 2000 Volume to Capacity ratio			0.78									
Actuated Cycle Length (s)			120.0	Sum of lost time (s)				12.5				
Intersection Capacity Utilization			90.8%	ICU Level of Service				E				
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis
 14: Blagden Ave NW & 16th St NW

5000 14th Street NW

						
Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		 	 		 	
Traffic Volume (veh/h)	10	1041	1834	83	8	6
Future Volume (Veh/h)	10	1041	1834	83	8	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.88	0.88	0.96	0.96	0.85	0.85
Hourly flow rate (vph)	11	1183	1910	86	9	7
Pedestrians		8	1		20	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		3.5	3.5		3.5	
Percent Blockage		1	0		2	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		851	736			
pX, platoon unblocked	0.43				0.50	0.43
vC, conflicting volume	2016				2588	1026
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	733				1053	0
tC, single (s)	4.2				7.0	7.1
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.4
p0 queue free %	97				91	98
cM capacity (veh/h)	364				100	450
Direction, Lane #	NB 1	NB 2	NB 3	SB 1	SB 2	NE 1
Volume Total	11	592	592	1273	723	16
Volume Left	11	0	0	0	0	9
Volume Right	0	0	0	0	86	7
cSH	364	1700	1700	1700	1700	151
Volume to Capacity	0.03	0.35	0.35	0.75	0.43	0.11
Queue Length 95th (ft)	2	0	0	0	0	9
Control Delay (s)	15.2	0.0	0.0	0.0	0.0	31.6
Lane LOS	C					D
Approach Delay (s)	0.1			0.0		31.6
Approach LOS						D
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			65.8%		ICU Level of Service	C
Analysis Period (min)			15			

Queues
15: 16th St NW & Decatur St NW

5000 14th Street NW



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	32	117	2	1142	45	1899
v/c Ratio	0.11	0.46	0.02	0.45	0.15	0.74
Control Delay	39.3	52.3	4.5	6.6	1.4	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.3	52.3	4.5	6.6	1.4	3.4
Queue Length 50th (ft)	19	71	0	155	1	16
Queue Length 95th (ft)	45	123	3	173	m2	m98
Internal Link Dist (ft)	287	971		103		771
Turn Bay Length (ft)			60		60	
Base Capacity (vph)	279	255	97	2563	292	2571
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.46	0.02	0.45	0.15	0.74

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
 15: 16th St NW & Decatur St NW

5000 14th Street NW



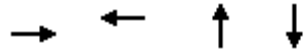
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕		↗	↕	
Traffic Volume (vph)	11	13	3	55	21	23	2	944	26	42	1759	7
Future Volume (vph)	11	13	3	55	21	23	2	944	26	42	1759	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frbp, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99			0.98		1.00	1.00		0.99	1.00	
Frt		0.98			0.97		1.00	1.00		1.00	1.00	
Flt Protected		0.98			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1809			1732		1736	3454		1714	3468	
Flt Permitted		0.88			0.81		0.07	1.00		0.22	1.00	
Satd. Flow (perm)		1619			1441		131	3454		396	3468	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.93	0.93	0.93
Adj. Flow (vph)	13	15	4	65	25	27	2	1111	31	45	1891	8
RTOR Reduction (vph)	0	3	0	0	9	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	29	0	0	108	0	2	1140	0	45	1899	0
Confl. Peds. (#/hr)	13		16	16			13	9		22	22	9
Confl. Bikes (#/hr)							1			2		6
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	4%	4%	4%	4%	4%	4%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			6				2
Permitted Phases	4			4			6			2		
Actuated Green, G (s)		20.5			20.5		89.0	89.0		89.0	89.0	
Effective Green, g (s)		20.5			20.5		89.0	89.0		89.0	89.0	
Actuated g/C Ratio		0.17			0.17		0.74	0.74		0.74	0.74	
Clearance Time (s)		5.5			5.5		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)		276			246		97	2561		293	2572	
v/s Ratio Prot								0.33				c0.55
v/s Ratio Perm		0.02			c0.07		0.02			0.11		
v/c Ratio		0.10			0.44		0.02	0.45		0.15	0.74	
Uniform Delay, d1		42.0			44.6		4.1	6.0		4.5	8.8	
Progression Factor		1.00			1.13		1.00	1.00		0.19	0.27	
Incremental Delay, d2		0.8			5.5		0.4	0.6		0.5	0.9	
Delay (s)		42.8			55.9		4.5	6.5		1.4	3.3	
Level of Service		D			E		A	A		A	A	
Approach Delay (s)		42.8			55.9			6.5			3.3	
Approach LOS		D			E			A			A	

Intersection Summary		
HCM 2000 Control Delay	6.7	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.68	A
Actuated Cycle Length (s)	120.0	Sum of lost time (s)
Intersection Capacity Utilization	74.3%	10.5
Analysis Period (min)	15	ICU Level of Service
		D

c Critical Lane Group

Queues
 16: 14th St NW & Decatur St NW/WMATA Garage

5000 14th Street NW



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	60	7	292	667
v/c Ratio	0.15	0.01	0.27	0.55
Control Delay	16.2	0.0	8.9	12.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	16.2	0.0	8.9	12.7
Queue Length 50th (ft)	14	0	84	248
Queue Length 95th (ft)	47	0	126	338
Internal Link Dist (ft)	971	92	167	155
Turn Bay Length (ft)				
Base Capacity (vph)	396	644	1082	1202
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.15	0.01	0.27	0.55
Intersection Summary				

HCM Signalized Intersection Capacity Analysis
 16: 14th St NW & Decatur St NW/WMATA Garage

5000 14th Street NW

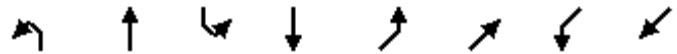


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	23	0	28	0	0	6	15	256	1	0	566	28
Future Volume (vph)	23	0	28	0	0	6	15	256	1	0	566	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5			5.0			5.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frbp, ped/bikes		0.97			0.96			1.00			0.99	
Flpb, ped/bikes		0.99			1.00			1.00			1.00	
Frt		0.93			0.86			1.00			0.99	
Flt Protected		0.98			1.00			1.00			1.00	
Satd. Flow (prot)		1661			865			1690			1801	
Flt Permitted		0.89			1.00			0.96			1.00	
Satd. Flow (perm)		1512			865			1622			1801	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.93	0.93	0.93	0.89	0.89	0.89
Adj. Flow (vph)	27	0	33	0	0	7	16	275	1	0	636	31
RTOR Reduction (vph)	0	25	0	0	5	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	35	0	0	2	0	0	292	0	0	666	0
Confl. Peds. (#/hr)	5		15	15		5	29		30	30		29
Confl. Bikes (#/hr)									5			53
Heavy Vehicles (%)	0%	0%	0%	83%	83%	83%	12%	12%	12%	4%	4%	4%
Turn Type	Perm	NA			NA		Perm	NA			NA	
Protected Phases		8			4			2			6	
Permitted Phases	8			4			2			6		
Actuated Green, G (s)		29.5			29.5			80.0			80.0	
Effective Green, g (s)		29.5			29.5			80.0			80.0	
Actuated g/C Ratio		0.25			0.25			0.67			0.67	
Clearance Time (s)		5.5			5.5			5.0			5.0	
Lane Grp Cap (vph)		371			212			1081			1200	
v/s Ratio Prot					0.00						c0.37	
v/s Ratio Perm		c0.02						0.18				
v/c Ratio		0.09			0.01			0.27			0.55	
Uniform Delay, d1		34.9			34.2			8.1			10.6	
Progression Factor		0.80			1.00			1.00			1.00	
Incremental Delay, d2		0.5			0.1			0.6			1.9	
Delay (s)		28.5			34.3			8.7			12.4	
Level of Service		C			C			A			B	
Approach Delay (s)		28.5			34.3			8.7			12.4	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	12.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

13: Colorado Ave NW & 16th St NW
























Lane Group	NBL	NBT	SBL	SBT	NEL	NET	SWL	SWT
Lane Group Flow (vph)	6	1747	8	850	35	30	64	38
v/c Ratio	0.02	0.80	0.11	0.39	0.09	0.06	0.17	0.08
Control Delay	7.0	12.4	13.8	11.8	33.7	28.8	34.7	19.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.0	12.4	13.8	11.8	33.7	28.8	34.7	19.5
Queue Length 50th (ft)	1	157	2	159	20	14	38	10
Queue Length 95th (ft)	m2	163	11	199	45	36	71	35
Internal Link Dist (ft)		656		1112		318		260
Turn Bay Length (ft)	70		40		100			
Base Capacity (vph)	339	2190	70	2183	375	504	370	473
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.80	0.11	0.39	0.09	0.06	0.17	0.08

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.














HCM Signalized Intersection Capacity Analysis
 13: Colorado Ave NW & 16th St NW

5000 14th Street NW

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	5	1401	84	8	807	17	30	21	4	54	15	17
Future Volume (vph)	5	1401	84	8	807	17	30	21	4	54	15	17
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	6.0		6.5	6.5		6.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00		1.00	0.97		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1761	3501		1752	3491		1798	1848		1733	1668	
Flt Permitted	0.29	1.00		0.06	1.00		0.73	1.00		0.74	1.00	
Satd. Flow (perm)	543	3501		113	3491		1386	1848		1346	1668	
Peak-hour factor, PHF	0.85	0.85	0.85	0.97	0.97	0.97	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	6	1648	99	8	832	18	35	25	5	64	18	20
RTOR Reduction (vph)	0	4	0	0	1	0	0	4	0	0	15	0
Lane Group Flow (vph)	6	1743	0	8	849	0	35	26	0	64	24	0
Confl. Peds. (#/hr)	9		8	8		9	4		1	1		4
Confl. Bikes (#/hr)			2			1						
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	0%	0%	0%	4%	4%	4%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			8				4
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	75.0	75.0		75.0	75.0		32.5	32.5		33.0	33.0	
Effective Green, g (s)	75.0	75.0		75.0	75.0		32.5	32.5		33.0	33.0	
Actuated g/C Ratio	0.62	0.62		0.62	0.62		0.27	0.27		0.28	0.28	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.5	6.5		6.0	6.0	
Lane Grp Cap (vph)	339	2188		70	2181		375	500		370	458	
v/s Ratio Prot		c0.50			0.24			0.01				0.01
v/s Ratio Perm	0.01			0.07			0.03			c0.05		
v/c Ratio	0.02	0.80		0.11	0.39		0.09	0.05		0.17	0.05	
Uniform Delay, d1	8.5	16.8		9.1	11.1		32.7	32.4		33.1	32.0	
Progression Factor	0.79	0.58		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	2.5		3.3	0.5		0.5	0.2		1.0	0.2	
Delay (s)	6.8	12.2		12.4	11.7		33.2	32.6		34.1	32.2	
Level of Service	A	B		B	B		C	C		C	C	
Approach Delay (s)		12.1			11.7			32.9			33.4	
Approach LOS		B			B			C			C	
Intersection Summary												
HCM 2000 Control Delay			13.3			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.61									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)				12.5		
Intersection Capacity Utilization			78.9%			ICU Level of Service				D		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis
 14: Blagden Ave NW & 16th St NW

5000 14th Street NW

						
Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		 	 		 	
Traffic Volume (veh/h)	3	1473	810	28	14	7
Future Volume (Veh/h)	3	1473	810	28	14	7
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.85	0.85	0.97	0.97	0.85	0.85
Hourly flow rate (vph)	4	1733	835	29	16	8
Pedestrians		5	1		6	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		3.5	3.5		3.5	
Percent Blockage		0	0		1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		851	736			
pX, platoon unblocked	0.89				0.78	0.89
vC, conflicting volume	870				1731	443
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	609				745	130
tC, single (s)	4.1				6.9	7.0
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				94	99
cM capacity (veh/h)	855				265	782
Direction, Lane #	NB 1	NB 2	NB 3	SB 1	SB 2	NE 1
Volume Total	4	866	866	557	307	24
Volume Left	4	0	0	0	0	16
Volume Right	0	0	0	0	29	8
cSH	855	1700	1700	1700	1700	340
Volume to Capacity	0.00	0.51	0.51	0.33	0.18	0.07
Queue Length 95th (ft)	0	0	0	0	0	6
Control Delay (s)	9.2	0.0	0.0	0.0	0.0	16.4
Lane LOS	A					C
Approach Delay (s)	0.0			0.0		16.4
Approach LOS						C
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			52.3%		ICU Level of Service	A
Analysis Period (min)			15			

Queues
15: 16th St NW & Decatur St NW

5000 14th Street NW



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	29	47	2	1683	33	864
v/c Ratio	0.10	0.17	0.00	0.64	0.24	0.33
Control Delay	33.2	23.6	4.0	9.0	9.2	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.2	23.6	4.0	9.0	9.2	5.2
Queue Length 50th (ft)	13	11	0	293	6	95
Queue Length 95th (ft)	38	31	2	315	20	118
Internal Link Dist (ft)	287	971		103		771
Turn Bay Length (ft)			60		60	
Base Capacity (vph)	281	279	419	2622	140	2595
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.17	0.00	0.64	0.24	0.33

Intersection Summary

HCM Signalized Intersection Capacity Analysis
 15: 16th St NW & Decatur St NW

5000 14th Street NW

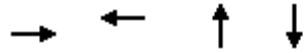


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕		↗	↕	
Traffic Volume (vph)	8	9	8	15	6	19	2	1421	9	31	796	7
Future Volume (vph)	8	9	8	15	6	19	2	1421	9	31	796	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frbp, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		0.98	1.00		1.00	1.00	
Frt		0.96			0.94		1.00	1.00		1.00	1.00	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1707			1672		1743	3535		1752	3497	
Flt Permitted		0.93			0.90		0.31	1.00		0.10	1.00	
Satd. Flow (perm)		1607			1531		565	3535		191	3497	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.93	0.93	0.93
Adj. Flow (vph)	9	11	9	18	7	22	2	1672	11	33	856	8
RTOR Reduction (vph)	0	7	0	0	18	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	22	0	0	29	0	2	1683	0	33	863	0
Confl. Peds. (#/hr)	7		4	4		7	13		2	2		13
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	2%	2%	2%	3%	3%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			6				2
Permitted Phases	4			4			6			2		
Actuated Green, G (s)		20.5			20.5		89.0	89.0		89.0	89.0	
Effective Green, g (s)		20.5			20.5		89.0	89.0		89.0	89.0	
Actuated g/C Ratio		0.17			0.17		0.74	0.74		0.74	0.74	
Clearance Time (s)		5.5			5.5		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)		274			261		419	2621		141	2593	
v/s Ratio Prot								c0.48				0.25
v/s Ratio Perm		0.01			c0.02		0.00			0.17		
v/c Ratio		0.08			0.11		0.00	0.64		0.23	0.33	
Uniform Delay, d1		41.8			42.0		4.0	7.6		4.8	5.3	
Progression Factor		1.00			0.83		1.00	1.00		0.96	0.91	
Incremental Delay, d2		0.6			0.8		0.0	1.2		3.7	0.3	
Delay (s)		42.4			35.9		4.0	8.9		8.4	5.2	
Level of Service		D			D		A	A		A	A	
Approach Delay (s)		42.4			35.9			8.9			5.3	
Approach LOS		D			D			A			A	

Intersection Summary

HCM 2000 Control Delay	8.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	65.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	35	22	453	353
v/c Ratio	0.14	0.16	0.36	0.27
Control Delay	25.3	23.3	6.1	5.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	25.3	23.3	6.1	5.2
Queue Length 50th (ft)	13	3	103	71
Queue Length 95th (ft)	m34	25	136	96
Internal Link Dist (ft)	971	92	167	155
Turn Bay Length (ft)				
Base Capacity (vph)	259	141	1254	1289
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.14	0.16	0.36	0.27

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
 16: 14th St NW & Decatur St NW/WMATA Garage

5000 14th Street NW



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↕			↕			↕			↕		
Traffic Volume (vph)	12	0	18	6	0	13	24	357	4	1	272	27	
Future Volume (vph)	12	0	18	6	0	13	24	357	4	1	272	27	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		5.5			5.5			5.0			5.0		
Lane Util. Factor		1.00			1.00			1.00			1.00		
Frbp, ped/bikes		0.98			0.98			1.00			0.99		
Flpb, ped/bikes		1.00			0.99			1.00			1.00		
Frt		0.92			0.91			1.00			0.99		
Flt Protected		0.98			0.98			1.00			1.00		
Satd. Flow (prot)		1615			826			1726			1716		
Flt Permitted		0.90			0.93			0.96			1.00		
Satd. Flow (perm)		1486			781			1670			1715		
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	
Adj. Flow (vph)	14	0	21	7	0	15	28	420	5	1	320	32	
RTOR Reduction (vph)	0	18	0	0	15	0	0	0	0	0	3	0	
Lane Group Flow (vph)	0	17	0	0	7	0	0	453	0	0	350	0	
Confl. Peds. (#/hr)	3		7	7		3	25		21	21		25	
Confl. Bikes (#/hr)									13			8	
Heavy Vehicles (%)	3%	3%	3%	100%	100%	100%	9%	9%	9%	8%	8%	8%	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA		
Protected Phases		8			4			2			6		
Permitted Phases	8			4			2			6			
Actuated Green, G (s)		19.5			19.5			90.0			90.0		
Effective Green, g (s)		19.5			19.5			90.0			90.0		
Actuated g/C Ratio		0.16			0.16			0.75			0.75		
Clearance Time (s)		5.5			5.5			5.0			5.0		
Lane Grp Cap (vph)		241			126			1252			1286		
v/s Ratio Prot													
v/s Ratio Perm		c0.01			0.01			c0.27			0.20		
v/c Ratio		0.07			0.05			0.36			0.27		
Uniform Delay, d1		42.6			42.5			5.1			4.7		
Progression Factor		1.01			1.00			1.00			1.00		
Incremental Delay, d2		0.6			0.8			0.8			0.5		
Delay (s)		43.5			43.3			6.0			5.2		
Level of Service		D			D			A			A		
Approach Delay (s)		43.5			43.3			6.0			5.2		
Approach LOS		D			D			A			A		
Intersection Summary													
HCM 2000 Control Delay			8.1									HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.31										
Actuated Cycle Length (s)			120.0									Sum of lost time (s)	10.5
Intersection Capacity Utilization			60.8%									ICU Level of Service	B
Analysis Period (min)			15										
c Critical Lane Group													

Queues

5000 14th Street NW

13: Colorado Ave NW & 16th St NW

























Lane Group	NBL	NBT	SBL	SBT	NEL	NET	SWL	SWT
Lane Group Flow (vph)	6	1773	8	957	35	30	64	38
v/c Ratio	0.02	0.81	0.12	0.44	0.09	0.06	0.17	0.08
Control Delay	7.0	12.7	14.5	12.4	33.7	28.8	34.7	19.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.0	12.7	14.5	12.4	33.7	28.8	34.7	19.5
Queue Length 50th (ft)	1	159	2	187	20	14	38	10
Queue Length 95th (ft)	m2	166	11	231	45	36	71	35
Internal Link Dist (ft)		656		1112		318		260
Turn Bay Length (ft)	70		40		100			
Base Capacity (vph)	293	2193	65	2183	375	504	370	473
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.81	0.12	0.44	0.09	0.06	0.17	0.08

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.














HCM Signalized Intersection Capacity Analysis
 13: Colorado Ave NW & 16th St NW

5000 14th Street NW

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		 			 							
Traffic Volume (vph)	5	1422	85	8	911	17	30	21	4	54	15	17
Future Volume (vph)	5	1422	85	8	911	17	30	21	4	54	15	17
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	6.0		6.5	6.5		6.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00		1.00	0.97		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1763	3501		1752	3492		1798	1848		1733	1668	
Flt Permitted	0.25	1.00		0.06	1.00		0.73	1.00		0.74	1.00	
Satd. Flow (perm)	470	3501		105	3492		1386	1848		1346	1668	
Peak-hour factor, PHF	0.85	0.85	0.85	0.97	0.97	0.97	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	6	1673	100	8	939	18	35	25	5	64	18	20
RTOR Reduction (vph)	0	4	0	0	1	0	0	4	0	0	15	0
Lane Group Flow (vph)	6	1769	0	8	956	0	35	26	0	64	24	0
Confl. Peds. (#/hr)	9		8	8		9	4		1	1		4
Confl. Bikes (#/hr)			2			1						
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	0%	0%	0%	4%	4%	4%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			8				4
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	75.0	75.0		75.0	75.0		32.5	32.5		33.0	33.0	
Effective Green, g (s)	75.0	75.0		75.0	75.0		32.5	32.5		33.0	33.0	
Actuated g/C Ratio	0.62	0.62		0.62	0.62		0.27	0.27		0.28	0.28	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.5	6.5		6.0	6.0	
Lane Grp Cap (vph)	293	2188		65	2182		375	500		370	458	
v/s Ratio Prot		c0.51			0.27			0.01				0.01
v/s Ratio Perm	0.01			0.08			0.03			c0.05		
v/c Ratio	0.02	0.81		0.12	0.44		0.09	0.05		0.17	0.05	
Uniform Delay, d1	8.5	17.1		9.1	11.6		32.7	32.4		33.1	32.0	
Progression Factor	0.78	0.58		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	2.6		3.8	0.6		0.5	0.2		1.0	0.2	
Delay (s)	6.8	12.5		13.0	12.3		33.2	32.6		34.1	32.2	
Level of Service	A	B		B	B		C	C		C	C	
Approach Delay (s)		12.5			12.3			32.9			33.4	
Approach LOS		B			B			C			C	
Intersection Summary												
HCM 2000 Control Delay			13.6			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.62									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)				12.5		
Intersection Capacity Utilization			79.6%			ICU Level of Service				D		
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Unsignalized Intersection Capacity Analysis
 14: Blagden Ave NW & 16th St NW

5000 14th Street NW

						
Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		 	 		 	
Traffic Volume (veh/h)	3	1495	822	28	14	7
Future Volume (Veh/h)	3	1495	822	28	14	7
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.85	0.85	0.97	0.97	0.85	0.85
Hourly flow rate (vph)	4	1759	847	29	16	8
Pedestrians		5	1		6	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		3.5	3.5		3.5	
Percent Blockage		0	0		1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		851	736			
pX, platoon unblocked	0.88				0.78	0.88
vC, conflicting volume	882				1756	449
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	595				706	103
tC, single (s)	4.1				6.9	7.0
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				94	99
cM capacity (veh/h)	856				279	804
Direction, Lane #	NB 1	NB 2	NB 3	SB 1	SB 2	NE 1
Volume Total	4	880	880	565	311	24
Volume Left	4	0	0	0	0	16
Volume Right	0	0	0	0	29	8
cSH	856	1700	1700	1700	1700	357
Volume to Capacity	0.00	0.52	0.52	0.33	0.18	0.07
Queue Length 95th (ft)	0	0	0	0	0	5
Control Delay (s)	9.2	0.0	0.0	0.0	0.0	15.8
Lane LOS	A					C
Approach Delay (s)	0.0			0.0		15.8
Approach LOS						C
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			52.9%		ICU Level of Service	A
Analysis Period (min)			15			

Queues
15: 16th St NW & Decatur St NW

5000 14th Street NW



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	29	47	2	1707	33	877
v/c Ratio	0.10	0.17	0.00	0.65	0.24	0.34
Control Delay	33.2	23.7	4.0	9.2	9.4	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.2	23.7	4.0	9.2	9.4	5.3
Queue Length 50th (ft)	13	11	0	302	6	98
Queue Length 95th (ft)	38	31	2	323	m21	122
Internal Link Dist (ft)	287	971		103		771
Turn Bay Length (ft)			60		60	
Base Capacity (vph)	281	279	412	2622	136	2595
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.17	0.00	0.65	0.24	0.34

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
 15: 16th St NW & Decatur St NW

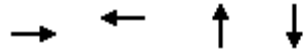
5000 14th Street NW



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕		↗	↕	
Traffic Volume (vph)	8	9	8	15	6	19	2	1442	9	31	808	7
Future Volume (vph)	8	9	8	15	6	19	2	1442	9	31	808	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frbp, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		0.99	1.00		1.00	1.00	
Frt		0.96			0.94		1.00	1.00		1.00	1.00	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1707			1672		1744	3535		1752	3497	
Flt Permitted		0.93			0.90		0.30	1.00		0.10	1.00	
Satd. Flow (perm)		1607			1531		556	3535		184	3497	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.93	0.93	0.93
Adj. Flow (vph)	9	11	9	18	7	22	2	1696	11	33	869	8
RTOR Reduction (vph)	0	7	0	0	18	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	22	0	0	29	0	2	1707	0	33	876	0
Confl. Peds. (#/hr)	7		4	4		7	13		2	2		13
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	2%	2%	2%	3%	3%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			6				2
Permitted Phases	4			4			6			2		
Actuated Green, G (s)		20.5			20.5		89.0	89.0		89.0	89.0	
Effective Green, g (s)		20.5			20.5		89.0	89.0		89.0	89.0	
Actuated g/C Ratio		0.17			0.17		0.74	0.74		0.74	0.74	
Clearance Time (s)		5.5			5.5		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)		274			261		412	2621		136	2593	
v/s Ratio Prot								c0.48				0.25
v/s Ratio Perm		0.01			c0.02		0.00			0.18		
v/c Ratio		0.08			0.11		0.00	0.65		0.24	0.34	
Uniform Delay, d1		41.8			42.0		4.0	7.7		4.9	5.3	
Progression Factor		1.00			0.84		1.00	1.00		0.95	0.92	
Incremental Delay, d2		0.6			0.8		0.0	1.3		3.9	0.3	
Delay (s)		42.4			36.0		4.0	9.0		8.6	5.3	
Level of Service		D			D		A	A		A	A	
Approach Delay (s)		42.4			36.0			9.0			5.4	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	65.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	35	22	457	355
v/c Ratio	0.14	0.16	0.36	0.28
Control Delay	25.3	23.3	6.1	5.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	25.3	23.3	6.1	5.2
Queue Length 50th (ft)	13	3	105	72
Queue Length 95th (ft)	m33	25	137	97
Internal Link Dist (ft)	971	92	167	155
Turn Bay Length (ft)				
Base Capacity (vph)	259	141	1254	1289
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.14	0.16	0.36	0.28

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
 16: 14th St NW & Decatur St NW/WMATA Garage

5000 14th Street NW



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	12	0	18	6	0	13	24	360	4	1	274	27
Future Volume (vph)	12	0	18	6	0	13	24	360	4	1	274	27
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5			5.0			5.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frbp, ped/bikes		0.98			0.98			1.00			0.99	
Flpb, ped/bikes		1.00			0.99			1.00			1.00	
Frt		0.92			0.91			1.00			0.99	
Flt Protected		0.98			0.98			1.00			1.00	
Satd. Flow (prot)		1615			826			1726			1716	
Flt Permitted		0.90			0.93			0.96			1.00	
Satd. Flow (perm)		1486			781			1670			1715	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	14	0	21	7	0	15	28	424	5	1	322	32
RTOR Reduction (vph)	0	18	0	0	15	0	0	0	0	0	3	0
Lane Group Flow (vph)	0	17	0	0	7	0	0	457	0	0	352	0
Confl. Peds. (#/hr)	3		7	7		3	25		21	21		25
Confl. Bikes (#/hr)									13			8
Heavy Vehicles (%)	3%	3%	3%	100%	100%	100%	9%	9%	9%	8%	8%	8%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			2			6	
Permitted Phases	8			4			2			6		
Actuated Green, G (s)		19.5			19.5			90.0			90.0	
Effective Green, g (s)		19.5			19.5			90.0			90.0	
Actuated g/C Ratio		0.16			0.16			0.75			0.75	
Clearance Time (s)		5.5			5.5			5.0			5.0	
Lane Grp Cap (vph)		241			126			1252			1286	
v/s Ratio Prot												
v/s Ratio Perm		c0.01			0.01			c0.27			0.21	
v/c Ratio		0.07			0.05			0.36			0.27	
Uniform Delay, d1		42.6			42.5			5.2			4.7	
Progression Factor		1.01			1.00			1.00			1.00	
Incremental Delay, d2		0.6			0.8			0.8			0.5	
Delay (s)		43.6			43.3			6.0			5.2	
Level of Service		D			D			A			A	
Approach Delay (s)		43.6			43.3			6.0			5.2	
Approach LOS		D			D			A			A	

Intersection Summary

HCM 2000 Control Delay	8.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	61.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Queues

5000 14th Street NW

13: Colorado Ave NW & 16th St NW























Lane Group	NBL	NBT	SBL	SBT	NEL	NET	SWL	SWT
Lane Group Flow (vph)	6	1784	8	970	35	30	64	38
v/c Ratio	0.02	0.81	0.13	0.44	0.09	0.06	0.17	0.08
Control Delay	7.2	12.9	14.9	12.4	33.7	28.8	34.7	19.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.2	12.9	14.9	12.4	33.7	28.8	34.7	19.5
Queue Length 50th (ft)	1	161	2	190	20	14	38	10
Queue Length 95th (ft)	m2	168	12	236	45	36	71	35
Internal Link Dist (ft)		656		1112		318		260
Turn Bay Length (ft)	70		40		100			
Base Capacity (vph)	288	2193	63	2183	375	504	370	473
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.81	0.13	0.44	0.09	0.06	0.17	0.08

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.














HCM Signalized Intersection Capacity Analysis
13: Colorado Ave NW & 16th St NW

5000 14th Street NW

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	5	1431	85	8	923	17	30	21	4	54	15	17
Future Volume (vph)	5	1431	85	8	923	17	30	21	4	54	15	17
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	6.0		6.5	6.5		6.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00		1.00	0.97		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1763	3501		1752	3493		1798	1848		1733	1668	
Flt Permitted	0.25	1.00		0.06	1.00		0.73	1.00		0.74	1.00	
Satd. Flow (perm)	462	3501		102	3493		1386	1848		1346	1668	
Peak-hour factor, PHF	0.85	0.85	0.85	0.97	0.97	0.97	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	6	1684	100	8	952	18	35	25	5	64	18	20
RTOR Reduction (vph)	0	4	0	0	1	0	0	4	0	0	15	0
Lane Group Flow (vph)	6	1780	0	8	969	0	35	26	0	64	24	0
Confl. Peds. (#/hr)	9		8	8		9	4		1	1		4
Confl. Bikes (#/hr)			2			1						
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	0%	0%	0%	4%	4%	4%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			8				4
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	75.0	75.0		75.0	75.0		32.5	32.5		33.0	33.0	
Effective Green, g (s)	75.0	75.0		75.0	75.0		32.5	32.5		33.0	33.0	
Actuated g/C Ratio	0.62	0.62		0.62	0.62		0.27	0.27		0.28	0.28	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.5	6.5		6.0	6.0	
Lane Grp Cap (vph)	288	2188		63	2183		375	500		370	458	
v/s Ratio Prot		c0.51			0.28			0.01				0.01
v/s Ratio Perm	0.01			0.08			0.03			c0.05		
v/c Ratio	0.02	0.81		0.13	0.44		0.09	0.05		0.17	0.05	
Uniform Delay, d1	8.5	17.2		9.2	11.7		32.7	32.4		33.1	32.0	
Progression Factor	0.81	0.58		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	2.7		4.1	0.7		0.5	0.2		1.0	0.2	
Delay (s)	7.0	12.7		13.3	12.3		33.2	32.6		34.1	32.2	
Level of Service	A	B		B	B		C	C		C	C	
Approach Delay (s)		12.7			12.3			32.9			33.4	
Approach LOS		B			B			C			C	
Intersection Summary												
HCM 2000 Control Delay			13.7			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.62									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)				12.5		
Intersection Capacity Utilization			79.8%			ICU Level of Service				D		
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Unsignalized Intersection Capacity Analysis
 14: Blagden Ave NW & 16th St NW

5000 14th Street NW

						
Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		 	 		 	
Traffic Volume (veh/h)	3	1502	822	28	14	7
Future Volume (Veh/h)	3	1502	822	28	14	7
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.85	0.85	0.97	0.97	0.85	0.85
Hourly flow rate (vph)	4	1767	847	29	16	8
Pedestrians		5	1		6	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		3.5	3.5		3.5	
Percent Blockage		0	0		1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		851	736			
pX, platoon unblocked	0.88				0.77	0.88
vC, conflicting volume	882				1760	449
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	592				699	100
tC, single (s)	4.1				6.9	7.0
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				94	99
cM capacity (veh/h)	857				281	807
Direction, Lane #	NB 1	NB 2	NB 3	SB 1	SB 2	NE 1
Volume Total	4	884	884	565	311	24
Volume Left	4	0	0	0	0	16
Volume Right	0	0	0	0	29	8
cSH	857	1700	1700	1700	1700	359
Volume to Capacity	0.00	0.52	0.52	0.33	0.18	0.07
Queue Length 95th (ft)	0	0	0	0	0	5
Control Delay (s)	9.2	0.0	0.0	0.0	0.0	15.7
Lane LOS	A					C
Approach Delay (s)	0.0			0.0		15.7
Approach LOS						C
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			53.1%		ICU Level of Service	A
Analysis Period (min)			15			

Queues
15: 16th St NW & Decatur St NW

5000 14th Street NW



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	29	56	2	1715	33	878
v/c Ratio	0.10	0.20	0.00	0.65	0.25	0.34
Control Delay	33.2	26.1	4.0	9.2	9.5	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.2	26.1	4.0	9.2	9.5	5.3
Queue Length 50th (ft)	13	15	0	304	7	99
Queue Length 95th (ft)	38	37	2	325	m20	122
Internal Link Dist (ft)	287	971		103		771
Turn Bay Length (ft)			60		60	
Base Capacity (vph)	281	275	412	2622	134	2595
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.20	0.00	0.65	0.25	0.34

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
 15: 16th St NW & Decatur St NW

5000 14th Street NW

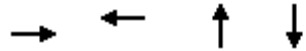


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕		↗	↕	
Traffic Volume (vph)	8	9	8	21	8	19	2	1446	12	31	809	7
Future Volume (vph)	8	9	8	21	8	19	2	1446	12	31	809	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frbp, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		0.99	1.00		1.00	1.00	
Frt		0.96			0.95		1.00	1.00		1.00	1.00	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1707			1687		1744	3534		1752	3497	
Flt Permitted		0.93			0.87		0.30	1.00		0.10	1.00	
Satd. Flow (perm)		1604			1507		556	3534		181	3497	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.93	0.93	0.93
Adj. Flow (vph)	9	11	9	25	9	22	2	1701	14	33	870	8
RTOR Reduction (vph)	0	7	0	0	18	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	22	0	0	38	0	2	1714	0	33	877	0
Confl. Peds. (#/hr)	7		4	4		7	13		2	2		13
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	2%	2%	2%	3%	3%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			6			2	
Permitted Phases	4			4			6			2		
Actuated Green, G (s)		20.5			20.5		89.0	89.0		89.0	89.0	
Effective Green, g (s)		20.5			20.5		89.0	89.0		89.0	89.0	
Actuated g/C Ratio		0.17			0.17		0.74	0.74		0.74	0.74	
Clearance Time (s)		5.5			5.5		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)		274			257		412	2621		134	2593	
v/s Ratio Prot								c0.49				0.25
v/s Ratio Perm		0.01			c0.03		0.00			0.18		
v/c Ratio		0.08			0.15		0.00	0.65		0.25	0.34	
Uniform Delay, d1		41.8			42.3		4.0	7.8		4.9	5.3	
Progression Factor		1.00			0.84		1.00	1.00		0.95	0.92	
Incremental Delay, d2		0.6			1.2		0.0	1.3		4.1	0.3	
Delay (s)		42.4			36.8		4.0	9.1		8.7	5.3	
Level of Service		D			D		A	A		A	A	
Approach Delay (s)		42.4			36.8			9.1			5.4	
Approach LOS		D			D			A			A	

Intersection Summary		
HCM 2000 Control Delay	8.8	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.56	A
Actuated Cycle Length (s)	120.0	Sum of lost time (s)
Intersection Capacity Utilization	65.8%	10.5
Analysis Period (min)	15	ICU Level of Service
		C

c Critical Lane Group

16: 14th St NW & Decatur St NW/WMATA Garage



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	39	22	467	366
v/c Ratio	0.15	0.16	0.37	0.28
Control Delay	25.8	23.3	6.2	5.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	25.8	23.3	6.2	5.2
Queue Length 50th (ft)	15	3	108	75
Queue Length 95th (ft)	m35	25	142	101
Internal Link Dist (ft)	971	92	167	155
Turn Bay Length (ft)				
Base Capacity (vph)	256	141	1254	1289
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.15	0.16	0.37	0.28

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
 16: 14th St NW & Decatur St NW/WMATA Garage

5000 14th Street NW



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	15	0	18	6	0	13	24	369	4	1	283	27
Future Volume (vph)	15	0	18	6	0	13	24	369	4	1	283	27
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5			5.0			5.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frbp, ped/bikes		0.98			0.98			1.00			0.99	
Flpb, ped/bikes		1.00			0.99			1.00			1.00	
Frt		0.93			0.91			1.00			0.99	
Flt Protected		0.98			0.98			1.00			1.00	
Satd. Flow (prot)		1628			826			1727			1717	
Flt Permitted		0.88			0.93			0.96			1.00	
Satd. Flow (perm)		1468			781			1671			1717	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	18	0	21	7	0	15	28	434	5	1	333	32
RTOR Reduction (vph)	0	18	0	0	15	0	0	0	0	0	3	0
Lane Group Flow (vph)	0	21	0	0	7	0	0	467	0	0	363	0
Confl. Peds. (#/hr)	3		7	7		3	25		21	21		25
Confl. Bikes (#/hr)									13			8
Heavy Vehicles (%)	3%	3%	3%	100%	100%	100%	9%	9%	9%	8%	8%	8%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			2			6	
Permitted Phases	8			4			2			6		
Actuated Green, G (s)		19.5			19.5			90.0			90.0	
Effective Green, g (s)		19.5			19.5			90.0			90.0	
Actuated g/C Ratio		0.16			0.16			0.75			0.75	
Clearance Time (s)		5.5			5.5			5.0			5.0	
Lane Grp Cap (vph)		238			126			1253			1287	
v/s Ratio Prot												
v/s Ratio Perm		c0.01			0.01			c0.28			0.21	
v/c Ratio		0.09			0.05			0.37			0.28	
Uniform Delay, d1		42.7			42.5			5.2			4.8	
Progression Factor		0.98			1.00			1.00			1.00	
Incremental Delay, d2		0.7			0.8			0.9			0.5	
Delay (s)		42.4			43.3			6.1			5.3	
Level of Service		D			D			A			A	
Approach Delay (s)		42.4			43.3			6.1			5.3	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			8.3					HCM 2000 Level of Service			A	
HCM 2000 Volume to Capacity ratio			0.32									
Actuated Cycle Length (s)			120.0					Sum of lost time (s)			10.5	
Intersection Capacity Utilization			61.5%					ICU Level of Service			B	
Analysis Period (min)			15									
c	Critical Lane Group											

Queues
13: Colorado Ave NW & 16th St NW

5000 14th Street NW
























Lane Group	NBL	NBT	SBL	SBT	NEL	NET	SWL	SWT
Lane Group Flow (vph)	6	1828	8	994	36	30	65	38
v/c Ratio	0.02	0.83	0.13	0.46	0.10	0.06	0.18	0.08
Control Delay	7.0	13.5	15.2	12.6	33.8	28.8	34.8	19.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.0	13.5	15.2	12.6	33.8	28.8	34.8	19.5
Queue Length 50th (ft)	1	165	2	197	21	14	38	10
Queue Length 95th (ft)	m2	171	12	244	46	36	72	35
Internal Link Dist (ft)		656		1112		318		260
Turn Bay Length (ft)	70		40		100			
Base Capacity (vph)	279	2192	61	2183	375	504	370	473
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.83	0.13	0.46	0.10	0.06	0.18	0.08

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.















HCM Signalized Intersection Capacity Analysis
 13: Colorado Ave NW & 16th St NW

5000 14th Street NW

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	5	1467	87	8	946	18	31	21	4	55	15	17
Future Volume (vph)	5	1467	87	8	946	18	31	21	4	55	15	17
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	6.0		6.5	6.5		6.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00		1.00	0.97		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1763	3501		1752	3492		1798	1848		1733	1668	
Flt Permitted	0.24	1.00		0.05	1.00		0.73	1.00		0.74	1.00	
Satd. Flow (perm)	446	3501		98	3492		1386	1848		1346	1668	
Peak-hour factor, PHF	0.85	0.85	0.85	0.97	0.97	0.97	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	6	1726	102	8	975	19	36	25	5	65	18	20
RTOR Reduction (vph)	0	3	0	0	1	0	0	4	0	0	15	0
Lane Group Flow (vph)	6	1825	0	8	993	0	36	26	0	65	24	0
Confl. Peds. (#/hr)	9		8	8		9	4		1	1		4
Confl. Bikes (#/hr)			2			1						
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	0%	0%	0%	4%	4%	4%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			8				4
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	75.0	75.0		75.0	75.0		32.5	32.5		33.0	33.0	
Effective Green, g (s)	75.0	75.0		75.0	75.0		32.5	32.5		33.0	33.0	
Actuated g/C Ratio	0.62	0.62		0.62	0.62		0.27	0.27		0.28	0.28	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.5	6.5		6.0	6.0	
Lane Grp Cap (vph)	278	2188		61	2182		375	500		370	458	
v/s Ratio Prot		c0.52			0.28			0.01				0.01
v/s Ratio Perm	0.01			0.08			0.03			c0.05		
v/c Ratio	0.02	0.83		0.13	0.46		0.10	0.05		0.18	0.05	
Uniform Delay, d1	8.6	17.6		9.2	11.8		32.8	32.4		33.1	32.0	
Progression Factor	0.78	0.58		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	3.0		4.4	0.7		0.5	0.2		1.0	0.2	
Delay (s)	6.8	13.3		13.6	12.5		33.3	32.6		34.2	32.2	
Level of Service	A	B		B	B		C	C		C	C	
Approach Delay (s)		13.3			12.5			32.9			33.4	
Approach LOS		B			B			C			C	
Intersection Summary												
HCM 2000 Control Delay			14.1			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.64									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)				12.5		
Intersection Capacity Utilization			80.9%			ICU Level of Service				D		
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Unsignalized Intersection Capacity Analysis
 14: Blagden Ave NW & 16th St NW

5000 14th Street NW

						
Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		 	  		 	
Traffic Volume (veh/h)	3	1540	843	29	14	7
Future Volume (Veh/h)	3	1540	843	29	14	7
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.85	0.85	0.97	0.97	0.85	0.85
Hourly flow rate (vph)	4	1812	869	30	16	8
Pedestrians		5	1		6	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		3.5	3.5		3.5	
Percent Blockage		0	0		1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		851	736			
pX, platoon unblocked	0.87				0.76	0.87
vC, conflicting volume	905				1805	460
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	602				676	94
tC, single (s)	4.1				6.9	7.0
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				94	99
cM capacity (veh/h)	844				285	809
Direction, Lane #	NB 1	NB 2	NB 3	SB 1	SB 2	NE 1
Volume Total	4	906	906	579	320	24
Volume Left	4	0	0	0	0	16
Volume Right	0	0	0	0	30	8
cSH	844	1700	1700	1700	1700	364
Volume to Capacity	0.00	0.53	0.53	0.34	0.19	0.07
Queue Length 95th (ft)	0	0	0	0	0	5
Control Delay (s)	9.3	0.0	0.0	0.0	0.0	15.6
Lane LOS	A					C
Approach Delay (s)	0.0			0.0		15.6
Approach LOS						C
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			54.1%		ICU Level of Service	A
Analysis Period (min)			15			

Queues
15: 16th St NW & Decatur St NW

5000 14th Street NW



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	29	56	2	1759	34	899
v/c Ratio	0.10	0.20	0.00	0.67	0.27	0.35
Control Delay	33.2	26.3	4.0	9.5	11.9	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.2	26.3	4.0	9.5	11.9	5.4
Queue Length 50th (ft)	13	15	0	319	7	102
Queue Length 95th (ft)	38	37	2	341	m28	126
Internal Link Dist (ft)	287	971		103		771
Turn Bay Length (ft)			60		60	
Base Capacity (vph)	281	275	401	2622	124	2595
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.20	0.00	0.67	0.27	0.35

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
 15: 16th St NW & Decatur St NW

5000 14th Street NW



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕		↗	↕	
Traffic Volume (vph)	8	9	8	21	8	19	2	1483	12	32	829	7
Future Volume (vph)	8	9	8	21	8	19	2	1483	12	32	829	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frbp, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		0.99	1.00		1.00	1.00	
Frt		0.96			0.95		1.00	1.00		1.00	1.00	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1707			1687		1745	3534		1752	3498	
Flt Permitted		0.93			0.87		0.30	1.00		0.09	1.00	
Satd. Flow (perm)		1604			1507		542	3534		169	3498	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.93	0.93	0.93
Adj. Flow (vph)	9	11	9	25	9	22	2	1745	14	34	891	8
RTOR Reduction (vph)	0	7	0	0	18	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	22	0	0	38	0	2	1758	0	34	898	0
Confl. Peds. (#/hr)	7		4	4		7	13		2	2		13
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	2%	2%	2%	3%	3%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			6			2	
Permitted Phases	4			4			6			2		
Actuated Green, G (s)		20.5			20.5		89.0	89.0		89.0	89.0	
Effective Green, g (s)		20.5			20.5		89.0	89.0		89.0	89.0	
Actuated g/C Ratio		0.17			0.17		0.74	0.74		0.74	0.74	
Clearance Time (s)		5.5			5.5		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)		274			257		401	2621		125	2594	
v/s Ratio Prot								c0.50				0.26
v/s Ratio Perm		0.01			c0.03		0.00			0.20		
v/c Ratio		0.08			0.15		0.00	0.67		0.27	0.35	
Uniform Delay, d1		41.8			42.3		4.0	8.0		5.0	5.4	
Progression Factor		1.00			0.85		1.00	1.00		1.13	0.92	
Incremental Delay, d2		0.6			1.2		0.0	1.4		4.9	0.3	
Delay (s)		42.4			37.1		4.0	9.4		10.6	5.3	
Level of Service		D			D		A	A		B	A	
Approach Delay (s)		42.4			37.1			9.4			5.5	
Approach LOS		D			D			A			A	

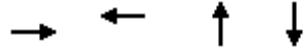
Intersection Summary

HCM 2000 Control Delay	9.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	66.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Queues
 16: 14th St NW & Decatur St NW/WMATA Garage

5000 14th Street NW



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	39	22	472	370
v/c Ratio	0.15	0.16	0.38	0.29
Control Delay	25.2	23.3	6.2	5.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	25.2	23.3	6.2	5.3
Queue Length 50th (ft)	15	3	109	76
Queue Length 95th (ft)	m33	25	144	102
Internal Link Dist (ft)	971	92	167	155
Turn Bay Length (ft)				
Base Capacity (vph)	256	141	1254	1289
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.15	0.16	0.38	0.29

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
 16: 14th St NW & Decatur St NW/WMATA Garage

5000 14th Street NW



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	15	0	18	6	0	13	24	373	4	1	286	28
Future Volume (vph)	15	0	18	6	0	13	24	373	4	1	286	28
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5			5.0			5.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frbp, ped/bikes		0.98			0.98			1.00			0.99	
Flpb, ped/bikes		1.00			0.99			1.00			1.00	
Frt		0.93			0.91			1.00			0.99	
Flt Protected		0.98			0.98			1.00			1.00	
Satd. Flow (prot)		1628			826			1727			1716	
Flt Permitted		0.88			0.93			0.96			1.00	
Satd. Flow (perm)		1468			781			1671			1716	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	18	0	21	7	0	15	28	439	5	1	336	33
RTOR Reduction (vph)	0	18	0	0	15	0	0	0	0	0	3	0
Lane Group Flow (vph)	0	21	0	0	7	0	0	472	0	0	367	0
Confl. Peds. (#/hr)	3		7	7		3	25		21	21		25
Confl. Bikes (#/hr)									13			8
Heavy Vehicles (%)	3%	3%	3%	100%	100%	100%	9%	9%	9%	8%	8%	8%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			2			6	
Permitted Phases	8			4			2			6		
Actuated Green, G (s)		19.5			19.5			90.0			90.0	
Effective Green, g (s)		19.5			19.5			90.0			90.0	
Actuated g/C Ratio		0.16			0.16			0.75			0.75	
Clearance Time (s)		5.5			5.5			5.0			5.0	
Lane Grp Cap (vph)		238			126			1253			1287	
v/s Ratio Prot												
v/s Ratio Perm		c0.01			0.01			c0.28			0.21	
v/c Ratio		0.09			0.05			0.38			0.29	
Uniform Delay, d1		42.7			42.5			5.2			4.8	
Progression Factor		0.95			1.00			1.00			1.00	
Incremental Delay, d2		0.7			0.8			0.9			0.6	
Delay (s)		41.4			43.3			6.1			5.3	
Level of Service		D			D			A			A	
Approach Delay (s)		41.4			43.3			6.1			5.3	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	61.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

13: Colorado Ave NW & 16th St NW























Lane Group	NBL	NBT	SBL	SBT	NEL	NET	SWL	SWT
Lane Group Flow (vph)	6	1824	8	1000	36	30	65	38
v/c Ratio	0.02	0.83	0.13	0.46	0.10	0.06	0.18	0.08
Control Delay	7.0	13.3	15.2	12.6	33.8	28.8	34.8	19.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.0	13.3	15.2	12.6	33.8	28.8	34.8	19.5
Queue Length 50th (ft)	1	164	2	199	21	14	38	10
Queue Length 95th (ft)	m2	170	12	246	46	36	72	35
Internal Link Dist (ft)		656		1112		318		260
Turn Bay Length (ft)	70		40		100			
Base Capacity (vph)	276	2193	61	2183	375	504	370	473
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.83	0.13	0.46	0.10	0.06	0.18	0.08

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.














HCM Signalized Intersection Capacity Analysis
 13: Colorado Ave NW & 16th St NW

5000 14th Street NW

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	5	1464	87	8	952	18	31	21	4	55	15	17
Future Volume (vph)	5	1464	87	8	952	18	31	21	4	55	15	17
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	6.0		6.5	6.5		6.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00		1.00	0.97		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1763	3501		1752	3492		1798	1848		1733	1668	
Flt Permitted	0.24	1.00		0.05	1.00		0.73	1.00		0.74	1.00	
Satd. Flow (perm)	443	3501		98	3492		1386	1848		1346	1668	
Peak-hour factor, PHF	0.85	0.85	0.85	0.97	0.97	0.97	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	6	1722	102	8	981	19	36	25	5	65	18	20
RTOR Reduction (vph)	0	4	0	0	1	0	0	4	0	0	15	0
Lane Group Flow (vph)	6	1820	0	8	999	0	36	26	0	65	24	0
Confl. Peds. (#/hr)	9		8	8		9	4		1	1		4
Confl. Bikes (#/hr)			2			1						
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	0%	0%	0%	4%	4%	4%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			8				4
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	75.0	75.0		75.0	75.0		32.5	32.5		33.0	33.0	
Effective Green, g (s)	75.0	75.0		75.0	75.0		32.5	32.5		33.0	33.0	
Actuated g/C Ratio	0.62	0.62		0.62	0.62		0.27	0.27		0.28	0.28	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.5	6.5		6.0	6.0	
Lane Grp Cap (vph)	276	2188		61	2182		375	500		370	458	
v/s Ratio Prot		c0.52			0.29			0.01				0.01
v/s Ratio Perm	0.01			0.08			0.03			c0.05		
v/c Ratio	0.02	0.83		0.13	0.46		0.10	0.05		0.18	0.05	
Uniform Delay, d1	8.6	17.6		9.2	11.8		32.8	32.4		33.1	32.0	
Progression Factor	0.78	0.58		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	3.0		4.4	0.7		0.5	0.2		1.0	0.2	
Delay (s)	6.8	13.1		13.6	12.5		33.3	32.6		34.2	32.2	
Level of Service	A	B		B	B		C	C		C	C	
Approach Delay (s)		13.1			12.5			32.9			33.4	
Approach LOS		B			B			C			C	
Intersection Summary												
HCM 2000 Control Delay			14.0				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.63									
Actuated Cycle Length (s)			120.0				Sum of lost time (s)			12.5		
Intersection Capacity Utilization			80.8%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis
 14: Blagden Ave NW & 16th St NW

5000 14th Street NW

						
Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		 	 		 	
Traffic Volume (veh/h)	3	1542	843	29	14	7
Future Volume (Veh/h)	3	1542	843	29	14	7
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.85	0.85	0.97	0.97	0.85	0.85
Hourly flow rate (vph)	4	1814	869	30	16	8
Pedestrians		5	1		6	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		3.5	3.5		3.5	
Percent Blockage		0	0		1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		851	736			
pX, platoon unblocked	0.87				0.76	0.87
vC, conflicting volume	905				1806	460
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	601				672	92
tC, single (s)	4.1				6.9	7.0
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				94	99
cM capacity (veh/h)	844				287	810
Direction, Lane #	NB 1	NB 2	NB 3	SB 1	SB 2	NE 1
Volume Total	4	907	907	579	320	24
Volume Left	4	0	0	0	0	16
Volume Right	0	0	0	0	30	8
cSH	844	1700	1700	1700	1700	365
Volume to Capacity	0.00	0.53	0.53	0.34	0.19	0.07
Queue Length 95th (ft)	0	0	0	0	0	5
Control Delay (s)	9.3	0.0	0.0	0.0	0.0	15.5
Lane LOS	A					C
Approach Delay (s)	0.0			0.0		15.5
Approach LOS						C
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			54.2%		ICU Level of Service	A
Analysis Period (min)			15			

Queues
15: 16th St NW & Decatur St NW

5000 14th Street NW





















Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	29	59	2	1762	34	899
v/c Ratio	0.10	0.22	0.00	0.67	0.27	0.35
Control Delay	33.2	26.9	4.0	9.6	12.0	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.2	26.9	4.0	9.6	12.0	5.4
Queue Length 50th (ft)	13	16	0	321	7	102
Queue Length 95th (ft)	38	39	2	342	m25	126
Internal Link Dist (ft)	287	971		103		771
Turn Bay Length (ft)			60		60	
Base Capacity (vph)	281	271	401	2622	124	2595
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.22	0.00	0.67	0.27	0.35

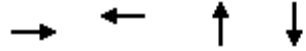
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
 15: 16th St NW & Decatur St NW

5000 14th Street NW

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	8	9	8	25	7	19	2	1485	13	32	829	7	
Future Volume (vph)	8	9	8	25	7	19	2	1485	13	32	829	7	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		5.5			5.5		5.0	5.0		5.0	5.0		
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95		
Frbp, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00		
Flpb, ped/bikes		1.00			1.00		0.99	1.00		1.00	1.00		
Frt		0.96			0.95		1.00	1.00		1.00	1.00		
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00		
Satd. Flow (prot)		1707			1688		1745	3534		1752	3498		
Flt Permitted		0.92			0.86		0.30	1.00		0.09	1.00		
Satd. Flow (perm)		1603			1483		542	3534		168	3498		
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.93	0.93	0.93	
Adj. Flow (vph)	9	11	9	29	8	22	2	1747	15	34	891	8	
RTOR Reduction (vph)	0	7	0	0	18	0	0	1	0	0	1	0	
Lane Group Flow (vph)	0	22	0	0	41	0	2	1761	0	34	898	0	
Confl. Peds. (#/hr)	7		4	4		7	13		2	2		13	
Confl. Bikes (#/hr)									1			1	
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	2%	2%	2%	3%	3%	3%	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA		
Protected Phases		4			4			6			2		
Permitted Phases	4			4			6			2			
Actuated Green, G (s)		20.5			20.5		89.0	89.0		89.0	89.0		
Effective Green, g (s)		20.5			20.5		89.0	89.0		89.0	89.0		
Actuated g/C Ratio		0.17			0.17		0.74	0.74		0.74	0.74		
Clearance Time (s)		5.5			5.5		5.0	5.0		5.0	5.0		
Lane Grp Cap (vph)		273			253		401	2621		124	2594		
v/s Ratio Prot								c0.50				0.26	
v/s Ratio Perm		0.01			c0.03		0.00			0.20			
v/c Ratio		0.08			0.16		0.00	0.67		0.27	0.35		
Uniform Delay, d1		41.8			42.4		4.0	8.0		5.0	5.4		
Progression Factor		1.00			0.85		1.00	1.00		1.14	0.92		
Incremental Delay, d2		0.6			1.3		0.0	1.4		5.0	0.3		
Delay (s)		42.4			37.4		4.0	9.4		10.8	5.3		
Level of Service		D			D		A	A		B	A		
Approach Delay (s)		42.4			37.4			9.4			5.5		
Approach LOS		D			D			A			A		
Intersection Summary													
HCM 2000 Control Delay			9.0									HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.58										
Actuated Cycle Length (s)			120.0									Sum of lost time (s)	10.5
Intersection Capacity Utilization			66.9%									ICU Level of Service	C
Analysis Period (min)			15										
c Critical Lane Group													



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	40	22	479	374
v/c Ratio	0.16	0.16	0.38	0.29
Control Delay	25.3	23.3	6.3	5.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	25.3	23.3	6.3	5.3
Queue Length 50th (ft)	16	3	112	77
Queue Length 95th (ft)	m33	25	146	104
Internal Link Dist (ft)	971	92	167	155
Turn Bay Length (ft)				
Base Capacity (vph)	255	141	1254	1289
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.16	0.16	0.38	0.29

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
 16: 14th St NW & Decatur St NW/WMATA Garage

5000 14th Street NW



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↕			↕			↕			↕		
Traffic Volume (vph)	16	0	18	6	0	13	24	379	4	1	289	28	
Future Volume (vph)	16	0	18	6	0	13	24	379	4	1	289	28	
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		5.5			5.5			5.0			5.0		
Lane Util. Factor		1.00			1.00			1.00			1.00		
Frbp, ped/bikes		0.98			0.98			1.00			0.99		
Flpb, ped/bikes		1.00			0.99			1.00			1.00		
Frt		0.93			0.91			1.00			0.99		
Flt Protected		0.98			0.98			1.00			1.00		
Satd. Flow (prot)		1630			826			1727			1717		
Flt Permitted		0.88			0.93			0.97			1.00		
Satd. Flow (perm)		1464			781			1672			1716		
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	
Adj. Flow (vph)	19	0	21	7	0	15	28	446	5	1	340	33	
RTOR Reduction (vph)	0	18	0	0	15	0	0	0	0	0	3	0	
Lane Group Flow (vph)	0	22	0	0	7	0	0	479	0	0	371	0	
Confl. Peds. (#/hr)	3		7	7		3	25		21	21		25	
Confl. Bikes (#/hr)									13			8	
Heavy Vehicles (%)	3%	3%	3%	100%	100%	100%	9%	9%	9%	8%	8%	8%	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA		
Protected Phases		8			4			2			6		
Permitted Phases	8			4			2			6			
Actuated Green, G (s)		19.5			19.5			90.0			90.0		
Effective Green, g (s)		19.5			19.5			90.0			90.0		
Actuated g/C Ratio		0.16			0.16			0.75			0.75		
Clearance Time (s)		5.5			5.5			5.0			5.0		
Lane Grp Cap (vph)		237			126			1254			1287		
v/s Ratio Prot													
v/s Ratio Perm		c0.02			0.01			c0.29			0.22		
v/c Ratio		0.09			0.05			0.38			0.29		
Uniform Delay, d1		42.7			42.5			5.3			4.8		
Progression Factor		0.94			1.00			1.00			1.00		
Incremental Delay, d2		0.8			0.8			0.9			0.6		
Delay (s)		40.9			43.3			6.1			5.3		
Level of Service		D			D			A			A		
Approach Delay (s)		40.9			43.3			6.1			5.3		
Approach LOS		D			D			A			A		
Intersection Summary													
HCM 2000 Control Delay			8.2									HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.33										
Actuated Cycle Length (s)			120.0									Sum of lost time (s)	10.5
Intersection Capacity Utilization			62.0%									ICU Level of Service	B
Analysis Period (min)			15										
c Critical Lane Group													
























Lane Group	NBL	NBT	SBL	SBT	NEL	NET	SWL	SWT
Lane Group Flow (vph)	11	2084	4	1211	25	57	66	38
v/c Ratio	0.06	0.96	0.07	0.55	0.07	0.11	0.18	0.08
Control Delay	7.3	21.6	12.0	14.0	33.3	23.4	35.2	23.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.3	21.6	12.0	14.0	33.3	23.4	35.2	23.0
Queue Length 50th (ft)	2	736	1	262	14	21	39	13
Queue Length 95th (ft)	m3	#980	7	320	36	51	75	39
Internal Link Dist (ft)		656		1112		318		260
Turn Bay Length (ft)	70		40		100			
Base Capacity (vph)	200	2178	61	2208	369	496	365	488
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.96	0.07	0.55	0.07	0.11	0.18	0.08

Intersection Summary

- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
 13: Colorado Ave NW & 16th St NW

5000 14th Street NW
 09/23/2017

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	11	1849	173	4	1115	11	21	31	18	57	20	13
Future Volume (vph)	11	1849	173	4	1115	11	21	31	18	57	20	13
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	6.0		6.5	6.5		6.5	6.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	0.99	1.00		1.00	1.00		0.98	1.00		0.99	1.00	
Frt	1.00	0.99		1.00	1.00		1.00	0.94		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1755	3477		1770	3531		1770	1777		1779	1764	
Flt Permitted	0.17	1.00		0.05	1.00		0.73	1.00		0.72	1.00	
Satd. Flow (perm)	322	3477		99	3531		1364	1777		1348	1764	
Peak-hour factor, PHF	0.97	0.97	0.97	0.93	0.93	0.93	0.85	0.85	0.85	0.87	0.87	0.87
Adj. Flow (vph)	11	1906	178	4	1199	12	25	36	21	66	23	15
RTOR Reduction (vph)	0	6	0	0	1	0	0	15	0	0	11	0
Lane Group Flow (vph)	11	2078	0	4	1210	0	25	42	0	66	27	0
Confl. Peds. (#/hr)	31		11	11		31	19		11	11		19
Confl. Bikes (#/hr)			14			4						1
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			8				4
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	75.0	75.0		75.0	75.0		32.5	32.5		32.5	32.5	
Effective Green, g (s)	75.0	75.0		75.0	75.0		32.5	32.5		32.5	32.5	
Actuated g/C Ratio	0.62	0.62		0.62	0.62		0.27	0.27		0.27	0.27	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.5	6.5		6.5	6.5	
Lane Grp Cap (vph)	201	2173		61	2206		369	481		365	477	
v/s Ratio Prot		c0.60			0.34			0.02				0.02
v/s Ratio Perm	0.03			0.04			0.02			c0.05		
v/c Ratio	0.05	0.96		0.07	0.55		0.07	0.09		0.18	0.06	
Uniform Delay, d1	8.7	21.0		8.8	12.8		32.5	32.7		33.5	32.4	
Progression Factor	0.76	0.57		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	8.7		2.1	1.0		0.4	0.4		1.1	0.2	
Delay (s)	7.0	20.7		10.9	13.8		32.9	33.0		34.6	32.6	
Level of Service	A	C		B	B		C	C		C	C	
Approach Delay (s)		20.6			13.8			33.0			33.9	
Approach LOS		C			B			C			C	

Intersection Summary		
HCM 2000 Control Delay	18.9	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.72	B
Actuated Cycle Length (s)	120.0	Sum of lost time (s)
Intersection Capacity Utilization	94.6%	12.5
Analysis Period (min)	15	ICU Level of Service
		F

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
 14: Blagden Ave NW & 16th St NW

5000 14th Street NW
 09/23/2017



Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Volume (veh/h)	9	1997	1133	20	9	8
Future Volume (Veh/h)	9	1997	1133	20	9	8
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.97	0.97	0.91	0.91	0.85	0.85
Hourly flow rate (vph)	9	2059	1245	22	11	9
Pedestrians		2	1		10	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		3.5	3.5		3.5	
Percent Blockage		0	0		1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		851	736			
pX, platoon unblocked	0.80				0.63	0.80
vC, conflicting volume	1277				2314	646
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	843				484	53
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				97	99
cM capacity (veh/h)	624				319	798
Direction, Lane #	NB 1	NB 2	NB 3	SB 1	SB 2	NE 1
Volume Total	9	1030	1030	830	437	20
Volume Left	9	0	0	0	0	11
Volume Right	0	0	0	0	22	9
cSH	624	1700	1700	1700	1700	437
Volume to Capacity	0.01	0.61	0.61	0.49	0.26	0.05
Queue Length 95th (ft)	1	0	0	0	0	4
Control Delay (s)	10.9	0.0	0.0	0.0	0.0	13.6
Lane LOS	B					B
Approach Delay (s)	0.0			0.0		13.6
Approach LOS						B
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			65.8%		ICU Level of Service	C
Analysis Period (min)			15			



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	27	40	3	1983	35	1179
v/c Ratio	0.09	0.14	0.01	0.76	0.42	0.45
Control Delay	34.7	23.3	4.3	11.5	29.5	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.7	23.3	4.3	11.5	29.5	6.8
Queue Length 50th (ft)	13	8	1	412	8	147
Queue Length 95th (ft)	38	30	3	498	m32	232
Internal Link Dist (ft)	287	971		103		771
Turn Bay Length (ft)			60		60	
Base Capacity (vph)	292	293	287	2625	84	2622
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.14	0.01	0.76	0.42	0.45

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
 15: 16th St NW & Decatur St NW

5000 14th Street NW
 09/23/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕		↗	↕	↘
Traffic Volume (vph)	8	9	6	7	9	18	3	1937	6	33	1093	4
Future Volume (vph)	8	9	6	7	9	18	3	1937	6	33	1093	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frbp, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		0.99	1.00		1.00	1.00	
Frt		0.96			0.93		1.00	1.00		1.00	1.00	
Flt Protected		0.98			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1785			1673		1761	3537		1770	3537	
Flt Permitted		0.92			0.96		0.21	1.00		0.06	1.00	
Satd. Flow (perm)		1676			1615		388	3537		113	3537	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.98	0.98	0.98	0.93	0.93	0.93
Adj. Flow (vph)	9	11	7	8	11	21	3	1977	6	35	1175	4
RTOR Reduction (vph)	0	6	0	0	17	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	21	0	0	23	0	3	1983	0	35	1179	0
Confl. Peds. (#/hr)	5		9	9		5	10		7	7		10
Confl. Bikes (#/hr)			1						18			5
Heavy Vehicles (%)	0%	0%	0%	3%	3%	3%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			6				2
Permitted Phases	4			4			6			2		
Actuated Green, G (s)		20.5			20.5		89.0	89.0		89.0	89.0	
Effective Green, g (s)		20.5			20.5		89.0	89.0		89.0	89.0	
Actuated g/C Ratio		0.17			0.17		0.74	0.74		0.74	0.74	
Clearance Time (s)		5.5			5.5		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)		286			275		287	2623		83	2623	
v/s Ratio Prot								c0.56				0.33
v/s Ratio Perm		0.01			c0.01		0.01			0.31		
v/c Ratio		0.07			0.08		0.01	0.76		0.42	0.45	
Uniform Delay, d1		41.8			41.8		4.0	9.1		5.8	6.0	
Progression Factor		1.00			0.90		1.00	1.00		1.89	1.04	
Incremental Delay, d2		0.5			0.6		0.1	2.1		13.0	0.5	
Delay (s)		42.3			38.0		4.1	11.2		24.1	6.7	
Level of Service		D			D		A	B		C	A	
Approach Delay (s)		42.3			38.0			11.2			7.2	
Approach LOS		D			D			B			A	

Intersection Summary			
HCM 2000 Control Delay	10.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBT	NBT	SBT
Lane Group Flow (vph)	48	536	368
v/c Ratio	0.18	0.39	0.27
Control Delay	24.6	6.3	5.3
Queue Delay	0.0	0.0	0.0
Total Delay	24.6	6.3	5.3
Queue Length 50th (ft)	19	126	77
Queue Length 95th (ft)	m32	177	111
Internal Link Dist (ft)	971	167	155
Turn Bay Length (ft)			
Base Capacity (vph)	274	1368	1345
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.18	0.39	0.27

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
 16: 14th St NW & Decatur St NW/WMATA Garage

5000 14th Street NW
 09/23/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	14	0	27	0	0	0	18	486	0	3	322	6
Future Volume (vph)	14	0	27	0	0	0	18	486	0	3	322	6
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5						5.0			5.0	
Lane Util. Factor		1.00						1.00			1.00	
Frbp, ped/bikes		0.97						1.00			1.00	
Flpb, ped/bikes		0.99						1.00			1.00	
Frt		0.91						1.00			1.00	
Flt Protected		0.98						1.00			1.00	
Satd. Flow (prot)		1627						1855			1799	
Flt Permitted		0.92						0.98			1.00	
Satd. Flow (perm)		1521						1824			1795	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.94	0.94	0.94	0.90	0.90	0.90
Adj. Flow (vph)	16	0	32	0	0	0	19	517	0	3	358	7
RTOR Reduction (vph)	0	27	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	21	0	0	0	0	0	536	0	0	368	0
Confl. Peds. (#/hr)	11		9	9			11	28		16	16	28
Confl. Bikes (#/hr)										31		6
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	2%	2%	5%	5%	5%
Turn Type	Perm	NA					Perm	NA		Perm	NA	
Protected Phases		8			4			2			6	
Permitted Phases	8			4			2			6		
Actuated Green, G (s)		19.5						90.0			90.0	
Effective Green, g (s)		19.5						90.0			90.0	
Actuated g/C Ratio		0.16						0.75			0.75	
Clearance Time (s)		5.5						5.0			5.0	
Lane Grp Cap (vph)		247						1368			1346	
v/s Ratio Prot												
v/s Ratio Perm		c0.01						c0.29			0.20	
v/c Ratio		0.09						0.39			0.27	
Uniform Delay, d1		42.7						5.3			4.7	
Progression Factor		1.10						1.00			1.00	
Incremental Delay, d2		0.6						0.8			0.5	
Delay (s)		47.7						6.2			5.2	
Level of Service		D						A			A	
Approach Delay (s)		47.7			0.0			6.2			5.2	
Approach LOS		D			A			A			A	
Intersection Summary												
HCM 2000 Control Delay			7.9									A
HCM 2000 Volume to Capacity ratio			0.34									
Actuated Cycle Length (s)			120.0								10.5	
Intersection Capacity Utilization			60.9%									B
Analysis Period (min)			15									
c Critical Lane Group												

Queues
13: Colorado Ave NW & 16th St NW

5000 14th Street NW



Lane Group	NBL	NBT	SBL	SBT	NEL	NET	SWL	SWT
Lane Group Flow (vph)	11	2116	4	1229	25	57	66	38
v/c Ratio	0.06	0.97	0.07	0.56	0.07	0.11	0.18	0.08
Control Delay	7.2	23.7	12.0	14.1	33.3	23.4	35.2	23.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.2	23.7	12.0	14.1	33.3	23.4	35.2	23.0
Queue Length 50th (ft)	2	765	1	267	14	21	39	13
Queue Length 95th (ft)	m3	#1006	7	326	36	51	75	39
Internal Link Dist (ft)		656		1112		318		260
Turn Bay Length (ft)	70		40		100			
Base Capacity (vph)	195	2178	61	2208	369	496	365	488
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.97	0.07	0.56	0.07	0.11	0.18	0.08

Intersection Summary






















95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.














HCM Signalized Intersection Capacity Analysis
 13: Colorado Ave NW & 16th St NW

5000 14th Street NW

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	11	1877	176	4	1132	11	21	31	18	57	20	13
Future Volume (vph)	11	1877	176	4	1132	11	21	31	18	57	20	13
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	6.0		6.5	6.5		6.5	6.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	0.99	1.00		1.00	1.00		0.98	1.00		0.99	1.00	
Frt	1.00	0.99		1.00	1.00		1.00	0.94		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1756	3477		1770	3531		1770	1777		1779	1764	
Flt Permitted	0.17	1.00		0.05	1.00		0.73	1.00		0.72	1.00	
Satd. Flow (perm)	313	3477		99	3531		1364	1777		1348	1764	
Peak-hour factor, PHF	0.97	0.97	0.97	0.93	0.93	0.93	0.85	0.85	0.85	0.87	0.87	0.87
Adj. Flow (vph)	11	1935	181	4	1217	12	25	36	21	66	23	15
RTOR Reduction (vph)	0	6	0	0	1	0	0	15	0	0	11	0
Lane Group Flow (vph)	11	2110	0	4	1228	0	25	42	0	66	27	0
Confl. Peds. (#/hr)	31		11	11		31	19		11	11		19
Confl. Bikes (#/hr)			14			4						1
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			8				4
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	75.0	75.0		75.0	75.0		32.5	32.5		32.5	32.5	
Effective Green, g (s)	75.0	75.0		75.0	75.0		32.5	32.5		32.5	32.5	
Actuated g/C Ratio	0.62	0.62		0.62	0.62		0.27	0.27		0.27	0.27	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.5	6.5		6.5	6.5	
Lane Grp Cap (vph)	195	2173		61	2206		369	481		365	477	
v/s Ratio Prot		c0.61			0.35			0.02				0.02
v/s Ratio Perm	0.04			0.04			0.02			c0.05		
v/c Ratio	0.06	0.97		0.07	0.56		0.07	0.09		0.18	0.06	
Uniform Delay, d1	8.7	21.5		8.8	12.9		32.5	32.7		33.5	32.4	
Progression Factor	0.74	0.57		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	10.4		2.1	1.0		0.4	0.4		1.1	0.2	
Delay (s)	6.9	22.6		10.9	14.0		32.9	33.0		34.6	32.6	
Level of Service	A	C		B	B		C	C		C	C	
Approach Delay (s)		22.5			14.0			33.0			33.9	
Approach LOS		C			B			C			C	
Intersection Summary												
HCM 2000 Control Delay			20.1	HCM 2000 Level of Service				C				
HCM 2000 Volume to Capacity ratio			0.73									
Actuated Cycle Length (s)			120.0	Sum of lost time (s)				12.5				
Intersection Capacity Utilization			95.5%	ICU Level of Service				F				
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Unsignalized Intersection Capacity Analysis
 14: Blagden Ave NW & 16th St NW

5000 14th Street NW

						
Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		 	 		 	
Traffic Volume (veh/h)	9	2027	1150	20	9	8
Future Volume (Veh/h)	9	2027	1150	20	9	8
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.97	0.97	0.91	0.91	0.85	0.85
Hourly flow rate (vph)	9	2090	1264	22	11	9
Pedestrians		2	1		10	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		3.5	3.5		3.5	
Percent Blockage		0	0		1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		851	736			
pX, platoon unblocked	0.79				0.51	0.79
vC, conflicting volume	1296				2349	655
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	853				0	45
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				98	99
cM capacity (veh/h)	615				511	801
Direction, Lane #	NB 1	NB 2	NB 3	SB 1	SB 2	NE 1
Volume Total	9	1045	1045	843	443	20
Volume Left	9	0	0	0	0	11
Volume Right	0	0	0	0	22	9
cSH	615	1700	1700	1700	1700	611
Volume to Capacity	0.01	0.61	0.61	0.50	0.26	0.03
Queue Length 95th (ft)	1	0	0	0	0	3
Control Delay (s)	10.9	0.0	0.0	0.0	0.0	11.1
Lane LOS	B					B
Approach Delay (s)	0.0			0.0		11.1
Approach LOS						B
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			66.7%		ICU Level of Service	C
Analysis Period (min)			15			

Queues
15: 16th St NW & Decatur St NW

5000 14th Street NW



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	27	40	3	2012	35	1198
v/c Ratio	0.09	0.14	0.01	0.77	0.45	0.46
Control Delay	34.7	23.3	4.3	11.8	34.5	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.7	23.3	4.3	11.8	34.5	7.0
Queue Length 50th (ft)	13	8	1	426	8	151
Queue Length 95th (ft)	38	30	3	515	m33	243
Internal Link Dist (ft)	287	971		103		771
Turn Bay Length (ft)			60		60	
Base Capacity (vph)	292	293	280	2625	78	2622
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.14	0.01	0.77	0.45	0.46

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
 15: 16th St NW & Decatur St NW

5000 14th Street NW



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕		↗	↕	↘
Traffic Volume (vph)	8	9	6	7	9	18	3	1966	6	33	1110	4
Future Volume (vph)	8	9	6	7	9	18	3	1966	6	33	1110	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frbp, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.96			0.93		1.00	1.00		1.00	1.00	
Flt Protected		0.98			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1785			1673		1761	3537		1770	3537	
Flt Permitted		0.92			0.96		0.20	1.00		0.06	1.00	
Satd. Flow (perm)		1676			1615		379	3537		107	3537	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.98	0.98	0.98	0.93	0.93	0.93
Adj. Flow (vph)	9	11	7	8	11	21	3	2006	6	35	1194	4
RTOR Reduction (vph)	0	6	0	0	17	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	21	0	0	23	0	3	2012	0	35	1198	0
Confl. Peds. (#/hr)	5		9	9		5	10		7	7		10
Confl. Bikes (#/hr)			1						18			5
Heavy Vehicles (%)	0%	0%	0%	3%	3%	3%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			6				2
Permitted Phases	4			4			6			2		
Actuated Green, G (s)		20.5			20.5		89.0	89.0		89.0	89.0	
Effective Green, g (s)		20.5			20.5		89.0	89.0		89.0	89.0	
Actuated g/C Ratio		0.17			0.17		0.74	0.74		0.74	0.74	
Clearance Time (s)		5.5			5.5		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)		286			275		281	2623		79	2623	
v/s Ratio Prot								c0.57				0.34
v/s Ratio Perm		0.01			c0.01		0.01			0.33		
v/c Ratio		0.07			0.08		0.01	0.77		0.44	0.46	
Uniform Delay, d1		41.8			41.8		4.0	9.3		6.0	6.1	
Progression Factor		1.00			0.90		1.00	1.00		1.91	1.06	
Incremental Delay, d2		0.5			0.6		0.1	2.2		14.7	0.5	
Delay (s)		42.3			38.0		4.1	11.5		26.1	6.9	
Level of Service		D			D		A	B		C	A	
Approach Delay (s)		42.3			38.0			11.5			7.5	
Approach LOS		D			D			B			A	

Intersection Summary

HCM 2000 Control Delay	10.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	80.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBT	NBT	SBT
Lane Group Flow (vph)	48	540	370
v/c Ratio	0.18	0.39	0.28
Control Delay	24.7	6.3	5.3
Queue Delay	0.0	0.0	0.0
Total Delay	24.7	6.3	5.3
Queue Length 50th (ft)	19	128	77
Queue Length 95th (ft)	m33	178	112
Internal Link Dist (ft)	971	167	155
Turn Bay Length (ft)			
Base Capacity (vph)	274	1368	1345
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.18	0.39	0.28

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
 16: 14th St NW & Decatur St NW/WMATA Garage

5000 14th Street NW



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↕			↕			↕			↕		
Traffic Volume (vph)	14	0	27	0	0	0	18	490	0	3	324	6	
Future Volume (vph)	14	0	27	0	0	0	18	490	0	3	324	6	
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		5.5						5.0			5.0		
Lane Util. Factor		1.00						1.00			1.00		
Frbp, ped/bikes		0.97						1.00			1.00		
Flpb, ped/bikes		0.99						1.00			1.00		
Frt		0.91						1.00			1.00		
Flt Protected		0.98						1.00			1.00		
Satd. Flow (prot)		1627						1855			1799		
Flt Permitted		0.92						0.98			1.00		
Satd. Flow (perm)		1521						1824			1795		
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.94	0.94	0.94	0.90	0.90	0.90	
Adj. Flow (vph)	16	0	32	0	0	0	19	521	0	3	360	7	
RTOR Reduction (vph)	0	27	0	0	0	0	0	0	0	0	1	0	
Lane Group Flow (vph)	0	21	0	0	0	0	0	540	0	0	370	0	
Confl. Peds. (#/hr)	11		9	9			11	28		16	16	28	
Confl. Bikes (#/hr)										31		6	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	2%	2%	5%	5%	5%	
Turn Type	Perm	NA					Perm	NA		Perm	NA		
Protected Phases		8			4			2			6		
Permitted Phases	8			4			2			6			
Actuated Green, G (s)		19.5						90.0			90.0		
Effective Green, g (s)		19.5						90.0			90.0		
Actuated g/C Ratio		0.16						0.75			0.75		
Clearance Time (s)		5.5						5.0			5.0		
Lane Grp Cap (vph)		247						1368			1346		
v/s Ratio Prot													
v/s Ratio Perm		c0.01						c0.30			0.21		
v/c Ratio		0.09						0.39			0.27		
Uniform Delay, d1		42.7						5.3			4.7		
Progression Factor		1.11						1.00			1.00		
Incremental Delay, d2		0.6						0.9			0.5		
Delay (s)		47.9						6.2			5.2		
Level of Service		D						A			A		
Approach Delay (s)		47.9			0.0			6.2			5.2		
Approach LOS		D			A			A			A		
Intersection Summary													
HCM 2000 Control Delay			7.9									HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.34										
Actuated Cycle Length (s)			120.0									Sum of lost time (s)	10.5
Intersection Capacity Utilization			61.1%									ICU Level of Service	B
Analysis Period (min)			15										
c Critical Lane Group													

Queues
13: Colorado Ave NW & 16th St NW

5000 14th Street NW



Lane Group	NBL	NBT	SBL	SBT	NEL	NET	SWL	SWT
Lane Group Flow (vph)	11	2130	4	1237	25	57	66	38
v/c Ratio	0.06	0.98	0.07	0.56	0.07	0.11	0.18	0.08
Control Delay	7.4	25.0	12.0	14.2	33.3	23.4	35.2	23.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.4	25.0	12.0	14.2	33.3	23.4	35.2	23.0
Queue Length 50th (ft)	2	777	1	271	14	21	39	13
Queue Length 95th (ft)	m3	#1018	7	330	36	51	75	39
Internal Link Dist (ft)		656		1112		318		260
Turn Bay Length (ft)	70		40		100			
Base Capacity (vph)	193	2178	61	2208	369	496	365	488
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.98	0.07	0.56	0.07	0.11	0.18	0.08

Intersection Summary






















95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.














HCM Signalized Intersection Capacity Analysis
 13: Colorado Ave NW & 16th St NW

5000 14th Street NW

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	11	1891	176	4	1139	11	21	31	18	57	20	13
Future Volume (vph)	11	1891	176	4	1139	11	21	31	18	57	20	13
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	6.0		6.5	6.5		6.5	6.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	0.99	1.00		1.00	1.00		0.98	1.00		0.99	1.00	
Frt	1.00	0.99		1.00	1.00		1.00	0.94		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1756	3477		1770	3531		1770	1777		1779	1764	
Flt Permitted	0.17	1.00		0.05	1.00		0.73	1.00		0.72	1.00	
Satd. Flow (perm)	309	3477		99	3531		1364	1777		1348	1764	
Peak-hour factor, PHF	0.97	0.97	0.97	0.93	0.93	0.93	0.85	0.85	0.85	0.87	0.87	0.87
Adj. Flow (vph)	11	1949	181	4	1225	12	25	36	21	66	23	15
RTOR Reduction (vph)	0	6	0	0	1	0	0	15	0	0	11	0
Lane Group Flow (vph)	11	2124	0	4	1236	0	25	42	0	66	27	0
Confl. Peds. (#/hr)	31		11	11		31	19		11	11		19
Confl. Bikes (#/hr)			14			4						1
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			8				4
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	75.0	75.0		75.0	75.0		32.5	32.5		32.5	32.5	
Effective Green, g (s)	75.0	75.0		75.0	75.0		32.5	32.5		32.5	32.5	
Actuated g/C Ratio	0.62	0.62		0.62	0.62		0.27	0.27		0.27	0.27	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.5	6.5		6.5	6.5	
Lane Grp Cap (vph)	193	2173		61	2206		369	481		365	477	
v/s Ratio Prot		c0.61			0.35			0.02				0.02
v/s Ratio Perm	0.04			0.04			0.02			c0.05		
v/c Ratio	0.06	0.98		0.07	0.56		0.07	0.09		0.18	0.06	
Uniform Delay, d1	8.7	21.7		8.8	13.0		32.5	32.7		33.5	32.4	
Progression Factor	0.75	0.57		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	11.5		2.1	1.0		0.4	0.4		1.1	0.2	
Delay (s)	7.0	23.9		10.9	14.0		32.9	33.0		34.6	32.6	
Level of Service	A	C		B	B		C	C		C	C	
Approach Delay (s)		23.8			14.0			33.0			33.9	
Approach LOS		C			B			C			C	
Intersection Summary												
HCM 2000 Control Delay			20.9			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.74									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			12.5			
Intersection Capacity Utilization			95.9%			ICU Level of Service			F			
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Unsignalized Intersection Capacity Analysis
 14: Blagden Ave NW & 16th St NW

5000 14th Street NW

						
Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		 	 		 	
Traffic Volume (veh/h)	11	2034	1150	20	11	8
Future Volume (Veh/h)	11	2034	1150	20	11	8
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.97	0.97	0.91	0.91	0.85	0.85
Hourly flow rate (vph)	11	2097	1264	22	13	9
Pedestrians		2	1		10	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		3.5	3.5		3.5	
Percent Blockage		0	0		1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		851	736			
pX, platoon unblocked	0.79				0.48	0.79
vC, conflicting volume	1296				2356	655
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	849				0	40
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				97	99
cM capacity (veh/h)	616				478	806
Direction, Lane #	NB 1	NB 2	NB 3	SB 1	SB 2	NE 1
Volume Total	11	1048	1048	843	443	22
Volume Left	11	0	0	0	0	13
Volume Right	0	0	0	0	22	9
cSH	616	1700	1700	1700	1700	574
Volume to Capacity	0.02	0.62	0.62	0.50	0.26	0.04
Queue Length 95th (ft)	1	0	0	0	0	3
Control Delay (s)	11.0	0.0	0.0	0.0	0.0	11.5
Lane LOS	B					B
Approach Delay (s)	0.1			0.0		11.5
Approach LOS						B
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			66.9%		ICU Level of Service	C
Analysis Period (min)			15			

Queues
15: 16th St NW & Decatur St NW

5000 14th Street NW



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	27	45	3	2017	35	1199
v/c Ratio	0.09	0.16	0.01	0.77	0.45	0.46
Control Delay	34.7	25.5	4.3	11.9	34.3	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.7	25.5	4.3	11.9	34.3	7.1
Queue Length 50th (ft)	13	10	1	429	8	151
Queue Length 95th (ft)	38	36	3	520	m33	247
Internal Link Dist (ft)	287	971		103		771
Turn Bay Length (ft)			60		60	
Base Capacity (vph)	291	289	280	2622	78	2622
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.16	0.01	0.77	0.45	0.46

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
 15: 16th St NW & Decatur St NW

5000 14th Street NW



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕		↗	↕	↘
Traffic Volume (vph)	8	9	6	10	10	18	3	1969	8	33	1111	4
Future Volume (vph)	8	9	6	10	10	18	3	1969	8	33	1111	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frbp, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.96			0.94		1.00	1.00		1.00	1.00	
Flt Protected		0.98			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1785			1682		1761	3537		1770	3537	
Flt Permitted		0.92			0.94		0.20	1.00		0.06	1.00	
Satd. Flow (perm)		1674			1594		378	3537		106	3537	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.98	0.98	0.98	0.93	0.93	0.93
Adj. Flow (vph)	9	11	7	12	12	21	3	2009	8	35	1195	4
RTOR Reduction (vph)	0	6	0	0	17	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	21	0	0	28	0	3	2017	0	35	1199	0
Confl. Peds. (#/hr)	5		9	9		5	10		7	7		10
Confl. Bikes (#/hr)			1						18			5
Heavy Vehicles (%)	0%	0%	0%	3%	3%	3%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			6				2
Permitted Phases	4			4			6			2		
Actuated Green, G (s)		20.5			20.5		89.0	89.0		89.0	89.0	
Effective Green, g (s)		20.5			20.5		89.0	89.0		89.0	89.0	
Actuated g/C Ratio		0.17			0.17		0.74	0.74		0.74	0.74	
Clearance Time (s)		5.5			5.5		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)		285			272		280	2623		78	2623	
v/s Ratio Prot								c0.57				0.34
v/s Ratio Perm		0.01			c0.02		0.01			0.33		
v/c Ratio		0.07			0.10		0.01	0.77		0.45	0.46	
Uniform Delay, d1		41.8			42.0		4.0	9.3		6.0	6.1	
Progression Factor		1.00			0.91		1.00	1.00		1.90	1.07	
Incremental Delay, d2		0.5			0.7		0.1	2.2		15.2	0.5	
Delay (s)		42.3			38.8		4.1	11.6		26.6	7.0	
Level of Service		D			D		A	B		C	A	
Approach Delay (s)		42.3			38.8			11.5			7.5	
Approach LOS		D			D			B			A	

Intersection Summary

HCM 2000 Control Delay	10.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	80.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBT	NBT	SBT
Lane Group Flow (vph)	51	547	381
v/c Ratio	0.19	0.40	0.28
Control Delay	25.2	6.4	5.3
Queue Delay	0.0	0.0	0.0
Total Delay	25.2	6.4	5.3
Queue Length 50th (ft)	20	130	80
Queue Length 95th (ft)	m36	182	115
Internal Link Dist (ft)	971	167	155
Turn Bay Length (ft)			
Base Capacity (vph)	272	1367	1346
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.19	0.40	0.28

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
 16: 14th St NW & Decatur St NW/WMATA Garage

5000 14th Street NW



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↕			↕			↕			↕		
Traffic Volume (vph)	16	0	27	0	0	0	18	496	0	3	334	6	
Future Volume (vph)	16	0	27	0	0	0	18	496	0	3	334	6	
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		5.5						5.0			5.0		
Lane Util. Factor		1.00						1.00			1.00		
Frbp, ped/bikes		0.97						1.00			1.00		
Flpb, ped/bikes		0.99						1.00			1.00		
Frt		0.92						1.00			1.00		
Flt Protected		0.98						1.00			1.00		
Satd. Flow (prot)		1634						1855			1799		
Flt Permitted		0.91						0.98			1.00		
Satd. Flow (perm)		1509						1824			1795		
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.94	0.94	0.94	0.90	0.90	0.90	
Adj. Flow (vph)	19	0	32	0	0	0	19	528	0	3	371	7	
RTOR Reduction (vph)	0	27	0	0	0	0	0	0	0	0	1	0	
Lane Group Flow (vph)	0	24	0	0	0	0	0	547	0	0	381	0	
Confl. Peds. (#/hr)	11		9	9			11	28		16	16	28	
Confl. Bikes (#/hr)										31		6	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	2%	2%	5%	5%	5%	
Turn Type	Perm	NA					Perm	NA		Perm	NA		
Protected Phases		8			4			2			6		
Permitted Phases	8			4			2			6			
Actuated Green, G (s)		19.5						90.0			90.0		
Effective Green, g (s)		19.5						90.0			90.0		
Actuated g/C Ratio		0.16						0.75			0.75		
Clearance Time (s)		5.5						5.0			5.0		
Lane Grp Cap (vph)		245						1368			1346		
v/s Ratio Prot													
v/s Ratio Perm		c0.02						c0.30			0.21		
v/c Ratio		0.10						0.40			0.28		
Uniform Delay, d1		42.8						5.4			4.8		
Progression Factor		1.08						1.00			1.00		
Incremental Delay, d2		0.7						0.9			0.5		
Delay (s)		47.1						6.2			5.3		
Level of Service		D						A			A		
Approach Delay (s)		47.1			0.0			6.2			5.3		
Approach LOS		D			A			A			A		
Intersection Summary													
HCM 2000 Control Delay			8.0									HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.35										
Actuated Cycle Length (s)			120.0									Sum of lost time (s)	10.5
Intersection Capacity Utilization			61.5%									ICU Level of Service	B
Analysis Period (min)			15										
c Critical Lane Group													























Lane Group	NBL	NBT	SBL	SBT	NEL	NET	SWL	SWT
Lane Group Flow (vph)	11	2184	4	1267	25	59	67	38
v/c Ratio	0.06	1.00	0.07	0.57	0.07	0.12	0.18	0.08
Control Delay	7.4	30.3	12.0	14.4	33.3	23.6	35.3	24.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.4	30.3	12.0	14.4	33.3	23.6	35.3	24.4
Queue Length 50th (ft)	2	-840	1	281	14	22	40	14
Queue Length 95th (ft)	m3	#1056	7	342	36	52	77	41
Internal Link Dist (ft)		656		1112		318		260
Turn Bay Length (ft)	70		40		100			
Base Capacity (vph)	185	2178	61	2208	369	497	364	487
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	1.00	0.07	0.57	0.07	0.12	0.18	0.08

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.














HCM Signalized Intersection Capacity Analysis
 13: Colorado Ave NW & 16th St NW

5000 14th Street NW

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	11	1938	180	4	1167	11	21	32	18	58	20	13
Future Volume (vph)	11	1938	180	4	1167	11	21	32	18	58	20	13
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	6.0		6.5	6.5		6.5	6.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	0.99	1.00		1.00	1.00		0.98	1.00		0.99	1.00	
Frt	1.00	0.99		1.00	1.00		1.00	0.95		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1757	3477		1770	3531		1770	1781		1779	1764	
Flt Permitted	0.16	1.00		0.05	1.00		0.73	1.00		0.72	1.00	
Satd. Flow (perm)	295	3477		99	3531		1364	1781		1345	1764	
Peak-hour factor, PHF	0.97	0.97	0.97	0.93	0.93	0.93	0.85	0.85	0.85	0.87	0.87	0.87
Adj. Flow (vph)	11	1998	186	4	1255	12	25	38	21	67	23	15
RTOR Reduction (vph)	0	6	0	0	0	0	0	15	0	0	9	0
Lane Group Flow (vph)	11	2178	0	4	1267	0	25	44	0	67	29	0
Confl. Peds. (#/hr)	31		11	11		31	19		11	11		19
Confl. Bikes (#/hr)			14			4						1
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			8				4
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	75.0	75.0		75.0	75.0		32.5	32.5		32.5	32.5	
Effective Green, g (s)	75.0	75.0		75.0	75.0		32.5	32.5		32.5	32.5	
Actuated g/C Ratio	0.62	0.62		0.62	0.62		0.27	0.27		0.27	0.27	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.5	6.5		6.5	6.5	
Lane Grp Cap (vph)	184	2173		61	2206		369	482		364	477	
v/s Ratio Prot		c0.63			0.36			0.02				0.02
v/s Ratio Perm	0.04			0.04			0.02			c0.05		
v/c Ratio	0.06	1.00		0.07	0.57		0.07	0.09		0.18	0.06	
Uniform Delay, d1	8.8	22.5		8.8	13.2		32.5	32.7		33.6	32.4	
Progression Factor	0.75	0.56		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	16.2		2.1	1.1		0.4	0.4		1.1	0.2	
Delay (s)	7.0	28.9		10.9	14.3		32.9	33.1		34.7	32.7	
Level of Service	A	C		B	B		C	C		C	C	
Approach Delay (s)		28.8			14.2			33.0			34.0	
Approach LOS		C			B			C			C	
Intersection Summary												
HCM 2000 Control Delay			24.0				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.75									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			12.5			
Intersection Capacity Utilization			97.3%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis
 14: Blagden Ave NW & 16th St NW

5000 14th Street NW

						
Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		 	 		 	
Traffic Volume (veh/h)	11	2085	1179	21	11	8
Future Volume (Veh/h)	11	2085	1179	21	11	8
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.97	0.97	0.91	0.91	0.85	0.85
Hourly flow rate (vph)	11	2149	1296	23	13	9
Pedestrians		2	1		10	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		3.5	3.5		3.5	
Percent Blockage		0	0		1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		851	736			
pX, platoon unblocked	0.78				0.40	0.78
vC, conflicting volume	1329				2415	672
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	867				0	27
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				97	99
cM capacity (veh/h)	599				404	812
Direction, Lane #	NB 1	NB 2	NB 3	SB 1	SB 2	NE 1
Volume Total	11	1074	1074	864	455	22
Volume Left	11	0	0	0	0	13
Volume Right	0	0	0	0	23	9
cSH	599	1700	1700	1700	1700	508
Volume to Capacity	0.02	0.63	0.63	0.51	0.27	0.04
Queue Length 95th (ft)	1	0	0	0	0	3
Control Delay (s)	11.1	0.0	0.0	0.0	0.0	12.4
Lane LOS	B					B
Approach Delay (s)	0.1			0.0		12.4
Approach LOS						B
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			68.3%		ICU Level of Service	C
Analysis Period (min)			15			

Queues
15: 16th St NW & Decatur St NW

5000 14th Street NW



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	27	45	3	2068	37	1228
v/c Ratio	0.09	0.16	0.01	0.79	0.53	0.47
Control Delay	34.7	25.4	4.3	12.5	44.8	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.7	25.4	4.3	12.5	44.8	7.4
Queue Length 50th (ft)	13	10	1	455	9	156
Queue Length 95th (ft)	38	36	3	553	m37	266
Internal Link Dist (ft)	287	971		103		771
Turn Bay Length (ft)			60		60	
Base Capacity (vph)	291	289	270	2622	70	2624
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.16	0.01	0.79	0.53	0.47

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
 15: 16th St NW & Decatur St NW

5000 14th Street NW



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕		↗	↕	↘
Traffic Volume (vph)	8	9	6	10	10	18	3	2019	8	34	1138	4
Future Volume (vph)	8	9	6	10	10	18	3	2019	8	34	1138	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frbp, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.96			0.94		1.00	1.00		1.00	1.00	
Flt Protected		0.98			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1785			1682		1770	3537		1770	3537	
Flt Permitted		0.92			0.94		0.20	1.00		0.05	1.00	
Satd. Flow (perm)		1674			1594		366	3537		94	3537	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.98	0.98	0.98	0.93	0.93	0.93
Adj. Flow (vph)	9	11	7	12	12	21	3	2060	8	37	1224	4
RTOR Reduction (vph)	0	6	0	0	17	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	21	0	0	28	0	3	2068	0	37	1228	0
Confl. Peds. (#/hr)	5		9	9		5	10		7	7		10
Confl. Bikes (#/hr)			1						18			5
Heavy Vehicles (%)	0%	0%	0%	3%	3%	3%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			6				2
Permitted Phases	4			4			6			2		
Actuated Green, G (s)		20.5			20.5		89.0	89.0		89.0	89.0	
Effective Green, g (s)		20.5			20.5		89.0	89.0		89.0	89.0	
Actuated g/C Ratio		0.17			0.17		0.74	0.74		0.74	0.74	
Clearance Time (s)		5.5			5.5		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)		285			272		271	2623		69	2623	
v/s Ratio Prot								c0.58				0.35
v/s Ratio Perm		0.01			c0.02		0.01			0.39		
v/c Ratio		0.07			0.10		0.01	0.79		0.54	0.47	
Uniform Delay, d1		41.8			42.0		4.0	9.6		6.6	6.1	
Progression Factor		1.00			0.90		1.00	1.00		1.95	1.11	
Incremental Delay, d2		0.5			0.7		0.1	2.5		23.0	0.5	
Delay (s)		42.3			38.6		4.1	12.1		36.0	7.3	
Level of Service		D			D		A	B		D	A	
Approach Delay (s)		42.3			38.6			12.1			8.2	
Approach LOS		D			D			B			A	

Intersection Summary			
HCM 2000 Control Delay	11.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	81.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBT	NBT	SBT
Lane Group Flow (vph)	52	553	387
v/c Ratio	0.19	0.40	0.29
Control Delay	24.2	6.4	5.4
Queue Delay	0.0	0.0	0.0
Total Delay	24.2	6.4	5.4
Queue Length 50th (ft)	17	132	82
Queue Length 95th (ft)	m34	185	118
Internal Link Dist (ft)	971	167	155
Turn Bay Length (ft)			
Base Capacity (vph)	272	1367	1346
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.19	0.40	0.29

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
 16: 14th St NW & Decatur St NW/WMATA Garage

5000 14th Street NW



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↕			↕			↕			↕		
Traffic Volume (vph)	16	0	28	0	0	0	18	502	0	3	339	6	
Future Volume (vph)	16	0	28	0	0	0	18	502	0	3	339	6	
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		5.5						5.0			5.0		
Lane Util. Factor		1.00						1.00			1.00		
Frbp, ped/bikes		0.97						1.00			1.00		
Flpb, ped/bikes		0.99						1.00			1.00		
Frt		0.91						1.00			1.00		
Flt Protected		0.98						1.00			1.00		
Satd. Flow (prot)		1633						1855			1799		
Flt Permitted		0.91						0.98			1.00		
Satd. Flow (perm)		1510						1824			1795		
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.94	0.94	0.94	0.90	0.90	0.90	
Adj. Flow (vph)	19	0	33	0	0	0	19	534	0	3	377	7	
RTOR Reduction (vph)	0	28	0	0	0	0	0	0	0	0	1	0	
Lane Group Flow (vph)	0	24	0	0	0	0	0	553	0	0	387	0	
Confl. Peds. (#/hr)	11		9	9			11	28		16	16	28	
Confl. Bikes (#/hr)										31		6	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	2%	2%	5%	5%	5%	
Turn Type	Perm	NA					Perm	NA		Perm	NA		
Protected Phases		8			4			2			6		
Permitted Phases	8			4			2			6			
Actuated Green, G (s)		19.5						90.0			90.0		
Effective Green, g (s)		19.5						90.0			90.0		
Actuated g/C Ratio		0.16						0.75			0.75		
Clearance Time (s)		5.5						5.0			5.0		
Lane Grp Cap (vph)		245						1368			1346		
v/s Ratio Prot													
v/s Ratio Perm		c0.02						c0.30			0.22		
v/c Ratio		0.10						0.40			0.29		
Uniform Delay, d1		42.8						5.4			4.8		
Progression Factor		1.06						1.00			1.00		
Incremental Delay, d2		0.7						0.9			0.5		
Delay (s)		45.9						6.3			5.3		
Level of Service		D						A			A		
Approach Delay (s)		45.9			0.0			6.3			5.3		
Approach LOS		D			A			A			A		
Intersection Summary													
HCM 2000 Control Delay			8.0									HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.35										
Actuated Cycle Length (s)			120.0									Sum of lost time (s)	10.5
Intersection Capacity Utilization			61.8%									ICU Level of Service	B
Analysis Period (min)			15										
c Critical Lane Group													
























Lane Group	NBL	NBT	SBL	SBT	NEL	NET	SWL	SWT
Lane Group Flow (vph)	11	2184	4	1267	25	59	67	38
v/c Ratio	0.06	1.00	0.07	0.57	0.07	0.12	0.18	0.08
Control Delay	7.4	30.3	12.0	14.4	33.3	23.6	35.3	24.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.4	30.3	12.0	14.4	33.3	23.6	35.3	24.4
Queue Length 50th (ft)	2	-838	1	281	14	22	40	14
Queue Length 95th (ft)	m3	#1056	7	342	36	52	77	41
Internal Link Dist (ft)		656		1112		318		260
Turn Bay Length (ft)	70		40		100			
Base Capacity (vph)	185	2178	61	2208	369	497	364	487
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	1.00	0.07	0.57	0.07	0.12	0.18	0.08

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.














HCM Signalized Intersection Capacity Analysis
 13: Colorado Ave NW & 16th St NW

5000 14th Street NW

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	11	1938	180	4	1167	11	21	32	18	58	20	13
Future Volume (vph)	11	1938	180	4	1167	11	21	32	18	58	20	13
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	6.0		6.5	6.5		6.5	6.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	0.99	1.00		1.00	1.00		0.98	1.00		0.99	1.00	
Frt	1.00	0.99		1.00	1.00		1.00	0.95		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1757	3477		1770	3531		1770	1781		1779	1764	
Flt Permitted	0.16	1.00		0.05	1.00		0.73	1.00		0.72	1.00	
Satd. Flow (perm)	295	3477		99	3531		1364	1781		1345	1764	
Peak-hour factor, PHF	0.97	0.97	0.97	0.93	0.93	0.93	0.85	0.85	0.85	0.87	0.87	0.87
Adj. Flow (vph)	11	1998	186	4	1255	12	25	38	21	67	23	15
RTOR Reduction (vph)	0	6	0	0	0	0	0	15	0	0	9	0
Lane Group Flow (vph)	11	2178	0	4	1267	0	25	44	0	67	29	0
Confl. Peds. (#/hr)	31		11	11		31	19		11	11		19
Confl. Bikes (#/hr)			14			4						1
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			8				4
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	75.0	75.0		75.0	75.0		32.5	32.5		32.5	32.5	
Effective Green, g (s)	75.0	75.0		75.0	75.0		32.5	32.5		32.5	32.5	
Actuated g/C Ratio	0.62	0.62		0.62	0.62		0.27	0.27		0.27	0.27	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.5	6.5		6.5	6.5	
Lane Grp Cap (vph)	184	2173		61	2206		369	482		364	477	
v/s Ratio Prot		c0.63			0.36			0.02				0.02
v/s Ratio Perm	0.04			0.04			0.02			c0.05		
v/c Ratio	0.06	1.00		0.07	0.57		0.07	0.09		0.18	0.06	
Uniform Delay, d1	8.8	22.5		8.8	13.2		32.5	32.7		33.6	32.4	
Progression Factor	0.75	0.56		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	16.2		2.1	1.1		0.4	0.4		1.1	0.2	
Delay (s)	7.0	28.9		10.9	14.3		32.9	33.1		34.7	32.7	
Level of Service	A	C		B	B		C	C		C	C	
Approach Delay (s)		28.8			14.2			33.0			34.0	
Approach LOS		C			B			C			C	
Intersection Summary												
HCM 2000 Control Delay			24.0			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.75									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			12.5			
Intersection Capacity Utilization			97.3%			ICU Level of Service			F			
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Unsignalized Intersection Capacity Analysis
 14: Blagden Ave NW & 16th St NW

5000 14th Street NW

						
Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		 	 		 	
Traffic Volume (veh/h)	10	2086	1180	21	10	8
Future Volume (Veh/h)	10	2086	1180	21	10	8
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.97	0.97	0.91	0.91	0.85	0.85
Hourly flow rate (vph)	10	2151	1297	23	12	9
Pedestrians		2	1		10	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		3.5	3.5		3.5	
Percent Blockage		0	0		1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		851	736			
pX, platoon unblocked	0.78				0.40	0.78
vC, conflicting volume	1330				2415	672
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	868				0	28
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				97	99
cM capacity (veh/h)	599				405	811
Direction, Lane #	NB 1	NB 2	NB 3	SB 1	SB 2	NE 1
Volume Total	10	1076	1076	865	455	21
Volume Left	10	0	0	0	0	12
Volume Right	0	0	0	0	23	9
cSH	599	1700	1700	1700	1700	515
Volume to Capacity	0.02	0.63	0.63	0.51	0.27	0.04
Queue Length 95th (ft)	1	0	0	0	0	3
Control Delay (s)	11.1	0.0	0.0	0.0	0.0	12.3
Lane LOS	B					B
Approach Delay (s)	0.1			0.0		12.3
Approach LOS						B
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			68.3%		ICU Level of Service	C
Analysis Period (min)			15			

Queues
15: 16th St NW & Decatur St NW

5000 14th Street NW



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	27	49	3	2068	37	1229
v/c Ratio	0.09	0.17	0.01	0.79	0.53	0.47
Control Delay	34.7	26.9	4.3	12.5	44.8	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.7	26.9	4.3	12.5	44.8	7.4
Queue Length 50th (ft)	13	13	1	455	9	156
Queue Length 95th (ft)	38	40	3	553	m37	266
Internal Link Dist (ft)	287	971		103		771
Turn Bay Length (ft)			60		60	
Base Capacity (vph)	291	285	270	2622	70	2624
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.17	0.01	0.79	0.53	0.47

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
 15: 16th St NW & Decatur St NW

5000 14th Street NW



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕		↗	↕	↘
Traffic Volume (vph)	8	9	6	14	10	18	3	2019	8	34	1139	4
Future Volume (vph)	8	9	6	14	10	18	3	2019	8	34	1139	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frbp, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			0.99		1.00	1.00		1.00	1.00	
Frt		0.96			0.94		1.00	1.00		1.00	1.00	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1785			1686		1770	3537		1770	3537	
Flt Permitted		0.92			0.92		0.20	1.00		0.05	1.00	
Satd. Flow (perm)		1673			1569		366	3537		94	3537	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.98	0.98	0.98	0.93	0.93	0.93
Adj. Flow (vph)	9	11	7	16	12	21	3	2060	8	37	1225	4
RTOR Reduction (vph)	0	6	0	0	17	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	21	0	0	32	0	3	2068	0	37	1229	0
Confl. Peds. (#/hr)	5		9	9		5	10		7	7		10
Confl. Bikes (#/hr)			1						18			5
Heavy Vehicles (%)	0%	0%	0%	3%	3%	3%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			6				2
Permitted Phases	4			4			6			2		
Actuated Green, G (s)		20.5			20.5		89.0	89.0		89.0	89.0	
Effective Green, g (s)		20.5			20.5		89.0	89.0		89.0	89.0	
Actuated g/C Ratio		0.17			0.17		0.74	0.74		0.74	0.74	
Clearance Time (s)		5.5			5.5		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)		285			268		271	2623		69	2623	
v/s Ratio Prot								c0.58				0.35
v/s Ratio Perm		0.01			c0.02		0.01			0.39		
v/c Ratio		0.07			0.12		0.01	0.79		0.54	0.47	
Uniform Delay, d1		41.8			42.1		4.0	9.6		6.6	6.1	
Progression Factor		1.00			0.91		1.00	1.00		1.95	1.11	
Incremental Delay, d2		0.5			0.9		0.1	2.5		23.0	0.5	
Delay (s)		42.3			39.2		4.1	12.1		36.0	7.3	
Level of Service		D			D		A	B		D	A	
Approach Delay (s)		42.3			39.2			12.1			8.2	
Approach LOS		D			D			B			A	

Intersection Summary			
HCM 2000 Control Delay	11.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	81.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBT	NBT	SBT
Lane Group Flow (vph)	52	553	387
v/c Ratio	0.19	0.40	0.29
Control Delay	24.3	6.4	5.4
Queue Delay	0.0	0.0	0.0
Total Delay	24.3	6.4	5.4
Queue Length 50th (ft)	17	132	82
Queue Length 95th (ft)	m34	185	118
Internal Link Dist (ft)	971	167	155
Turn Bay Length (ft)			
Base Capacity (vph)	272	1367	1346
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.19	0.40	0.29

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
 16: 14th St NW & Decatur St NW/WMATA Garage

5000 14th Street NW



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↕			↕			↕			↕		
Traffic Volume (vph)	16	0	28	0	0	0	18	502	0	3	339	6	
Future Volume (vph)	16	0	28	0	0	0	18	502	0	3	339	6	
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		5.5						5.0			5.0		
Lane Util. Factor		1.00						1.00			1.00		
Frbp, ped/bikes		0.97						1.00			1.00		
Flpb, ped/bikes		0.99						1.00			1.00		
Frt		0.91						1.00			1.00		
Flt Protected		0.98						1.00			1.00		
Satd. Flow (prot)		1633						1855			1799		
Flt Permitted		0.91						0.98			1.00		
Satd. Flow (perm)		1510						1824			1795		
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.94	0.94	0.94	0.90	0.90	0.90	
Adj. Flow (vph)	19	0	33	0	0	0	19	534	0	3	377	7	
RTOR Reduction (vph)	0	28	0	0	0	0	0	0	0	0	1	0	
Lane Group Flow (vph)	0	24	0	0	0	0	0	553	0	0	387	0	
Confl. Peds. (#/hr)	11		9	9			11	28		16	16	28	
Confl. Bikes (#/hr)										31		6	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	2%	2%	5%	5%	5%	
Turn Type	Perm	NA					Perm	NA		Perm	NA		
Protected Phases		8			4			2			6		
Permitted Phases	8			4			2			6			
Actuated Green, G (s)		19.5						90.0			90.0		
Effective Green, g (s)		19.5						90.0			90.0		
Actuated g/C Ratio		0.16						0.75			0.75		
Clearance Time (s)		5.5						5.0			5.0		
Lane Grp Cap (vph)		245						1368			1346		
v/s Ratio Prot													
v/s Ratio Perm		c0.02						c0.30			0.22		
v/c Ratio		0.10						0.40			0.29		
Uniform Delay, d1		42.8						5.4			4.8		
Progression Factor		1.06						1.00			1.00		
Incremental Delay, d2		0.7						0.9			0.5		
Delay (s)		46.0						6.3			5.3		
Level of Service		D						A			A		
Approach Delay (s)		46.0			0.0			6.3			5.3		
Approach LOS		D			A			A			A		
Intersection Summary													
HCM 2000 Control Delay			8.0									HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.35										
Actuated Cycle Length (s)			120.0									Sum of lost time (s)	10.5
Intersection Capacity Utilization			61.8%									ICU Level of Service	B
Analysis Period (min)			15										
c Critical Lane Group													