WELLS & ASSOCIATES, INC.

TRAFFIC, TRANSPORTATION and PARKING CONSULTANTS

MEETING THE NEEDS OF A MOBILE SOCIETY

ZONING COMMISSION
District of Columbia
CASE NO.07-13
EXHIBIT NO.28A

THE RANDALL SCHOOL
TRANSPORTATION IMPACT STUDY
WASHINGTON, D.C.

Prepared for:
MR Randall Capital LLC Randall Capital LLC
And
The Corcoran Gallery of Art

Prepared by:
Wells & Associates, LLC

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THE RANDALL SCHOOL
TRANSPORTATION IMPACT STUDY
WASHINGTON, D.C.

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Section 1
INTRODUCTION

This report presents the results of a transportation impact study that was prepared in support of a Planned Unit Development application for the MR Randall Capital LLC and the Corcoran Gallery of Arts plans to develop residential and educational uses on the former Randall School property located on Square 643 in southwest Washington D.C. The Randall School is generally located on the north side of I Street, SW between South Capitol Street and Delaware Avenue SW with H Street boarding the site to the north, as shown on Figures 1-1 and 1-2.

The subject property is the site of the former Randall School and has recently been occupied with a men's shelter and studio space for artists.

MR Randall Capital LLC and the Corcoran Gallery of Arts plan to develop the site with 485 residential units and approximately 100,000 S.F. for college education in arts. Parking would be provided in a three (3) level, 460-space, underground, parking garage. Of the 460 parking spaces, 400 would be designated for the residential units and 60 spaces would be designated for the Corcoran Gallery of Arts. Access to the parking garage and to the loading for the residential building and for the Corcoran would be provided on the north side of the site via H Street SW. The conceptual site plan for all phases of development is shown in Figure 1-3.

The Corcoran Gallery of Arts currently has school facilities on 17th Street NW and on 34th Street NW. The Corcoran plans to increase its student enrollment from 500 to 1,000 students between the two existing facilities and the new Randall campus. Approximately 400 undergraduate and graduate students would utilize expanded classrooms for ceramics, fine arts, photography, and other equipment intensive arts. Rooms for student exhibition displays would also be provided at the Randall campus. Student dormitories are not planned at the Randall School facility. A shuttle bus service is envisioned for students and faculty, operating between the main campus on 17th Street and the Randall campus.

Along with the Ballpark, there are several other significant projects planned or under construction south of the site that were considered in the analysis as "pipeline" traffic generators.

For purposes of this traffic study, the proposed residential building and the Corcoran Gallery of Arts Randall campus were assumed to be completed in 2009.

Tasks undertaken in this study included the following:

1. Review MR Randall Capital LLC's proposed development plans including the Corcoran Gallery of Arts.

2. Field reconnaissance of existing roadway and intersection geometrics, traffic controls, traffic signal phasing/timings, and speed limits.

3. Review the off-street parking and off-street loading for the proposed project.

4. Compilation of existing vehicular and pedestrian traffic at six (6) off-site intersections.

5. Analysis of existing levels of service during the commuter AM and PM peak hours was conducted.

6. Other approved and planned developments in the site vicinity were identified and their traffic impacts were included.

7. Planned roadway improvements in the site vicinity were reviewed.

8. Background future traffic volumes were forecasted for 2009.

9. Background levels of service were calculated at key intersections based on background traffic forecasts, existing traffic controls, and existing intersection geometrics.

10. The number of AM and PM peak hour trips that would be generated by the proposed project was estimated based on: (1) Institute of Transportation Engineers (ITE) trip generation rates, (2) the proximity of the project to the Waterfront/SEU and Navy Yard Metrorail stations, and (3) experience with other projects in Washington, D.C.

11. Total future traffic, AM and PM commuter peak hour, volumes were forecasted.

12. Total future levels of service for commuter peak hours were calculated at key intersections based on total future traffic forecasts, future traffic controls, and future intersection geometrics.

Sources of data for this analysis included; ITE; the Washington Metropolitan Area Transit Authority (WMATA); DDOT; the Office of Planning; the MR Randall Capital LLC development team; the Corcoran Gallery of Art; traffic counts conducted by Wells & Associates; and files of Wells & Associates.

The conclusions of this traffic impact study are as follows:

1. ***The proposed Randall School project on Square 643 is located within a connected street network for both pedestrians and vehicles. The proximity to the Waterfront/SEU and Navy Yard Metrorail stations, Metrobus service, the planned Corcoran Gallery of Arts shuttle, and the urban street grid helps reduce the demand for private automobile use.***

2. ***Heavy commuter traffic along the South Capitol Street corridor contributes to vehicle delays on the main line and at the cross streets in the study area.***

3. ***Most of the study intersections currently operate at overall acceptable levels of service during the AM and PM peak hours with the exception of the M Street intersections with the north and southbound South Capitol Street ramps and the eastbound Eye Street approach at South Capitol Street.***

4. ***M Street is the east-west corridor serving the SW and SE DC waterfront areas. Substantial development is planned in the vicinity that will substantially increase future traffic volumes on M Street and South Capitol Street.***

5. ***Major roadway improvements planned along South Capitol Street will greatly improve vehicular access in the study area and will enhance the pedestrian and bicycle environment.***

6. ***The pipeline developments in the study area would generate a total of 2,167 AM peak hour trips and 2,556 PM peak hour trips upon completion.***

7. ***The Randall School project in Square 643, including 485 residential condominiums and the Corcoran Gallery of Arts, 400-student education facility, will generate approximately 100 AM peak hour vehicle-trips and 156 PM peak hour vehicle-trips at full build out and occupancy.***

8. ***The study intersections would operate at overall acceptable levels of service during both the AM and PM peak hours with the exception of the M Street intersections with South Capitol Street. Some of the minor street approaches would operate at unacceptable levels of service during peak hours which is typical for an urban, minor street approach.***

9. ***The Randall School project would provide 460 parking spaces in an underground garage; 400 spaces would be allotted to the residential condominiums and 60 spaces would be allotted for the Corcoran Gallery of Arts.***

10. ***The Randall School site would provide sufficient loading dock accommodations. There may be times when the service facilities will need to be managed to make sure all tenants are accommodated.***

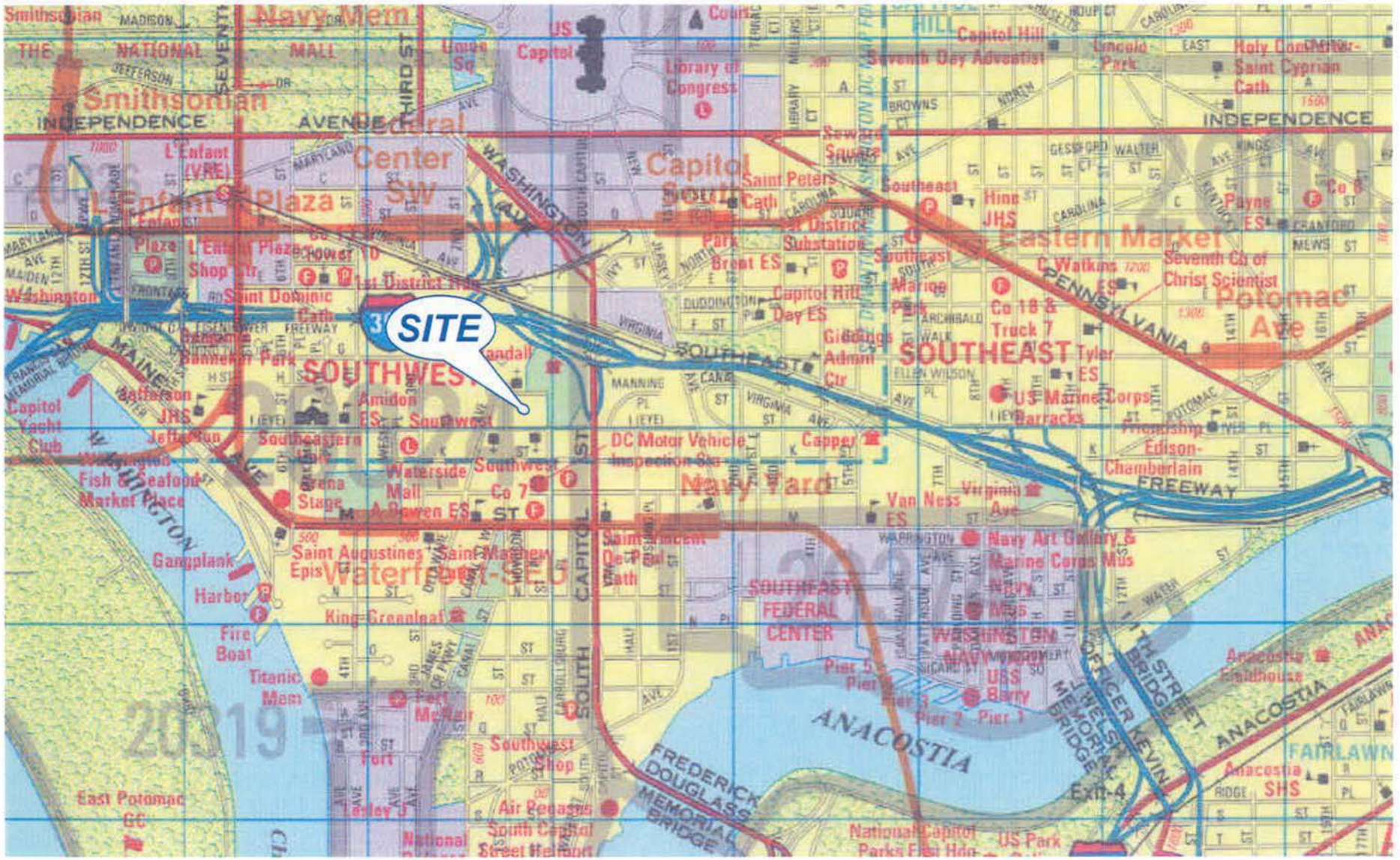

Figure 1–1
Regional Site Loaction

The Randall School
Washington, D.C.

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Figure 1–2
Aerial Image

AM PEAK HOUR
PM PEAK HOUR
000/000

North

The Randall School
Washington, D.C.

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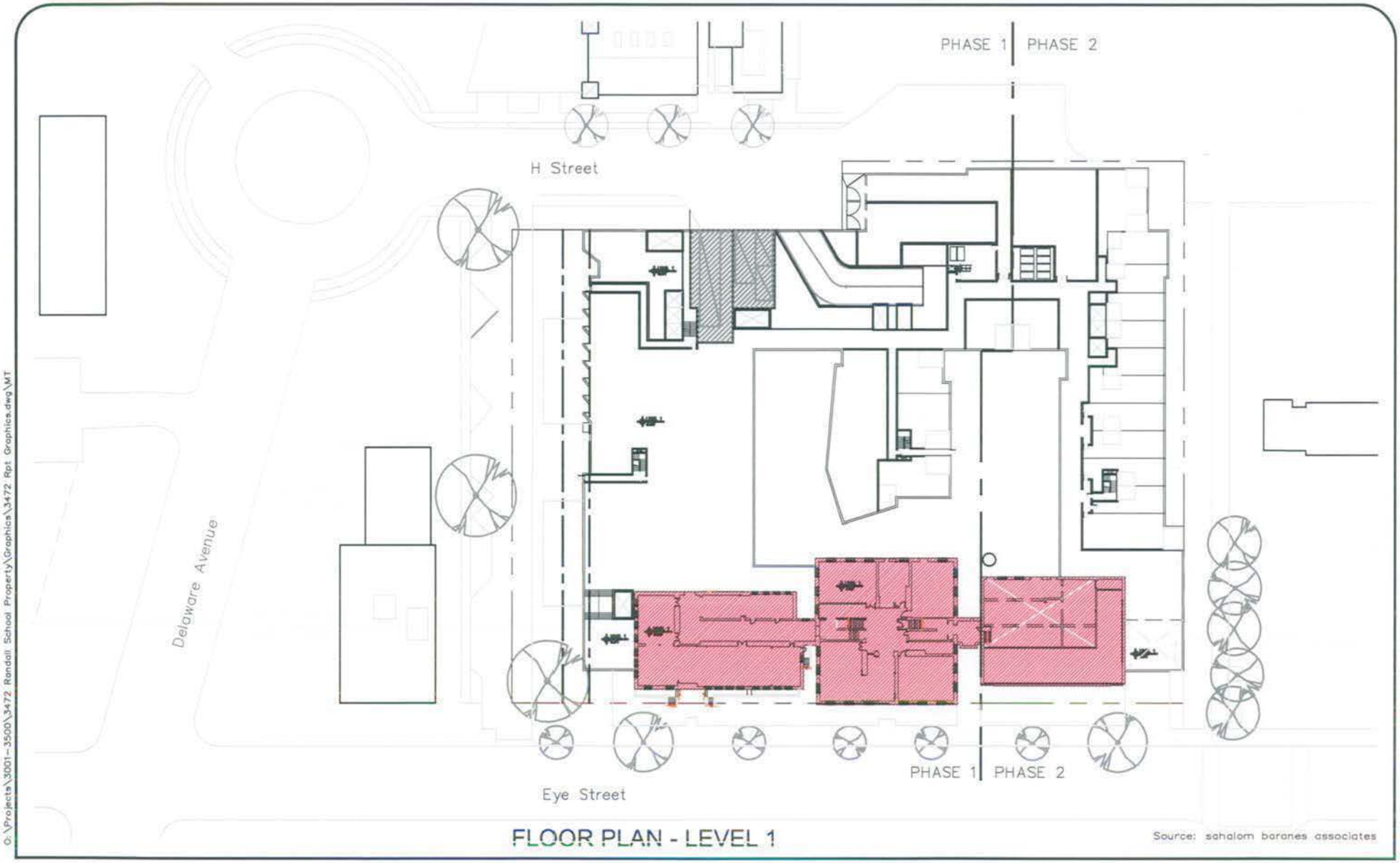

Figure 1–3
Coceptional Site Plan

North

The Randall School
Washington, D.C.

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Section 2
BACKGROUND DATA

Study Scope

The traffic study scope was selected based on the intersections that would potentially be most affected by the proposed development. This study includes the following intersections:

1. Delaware Avenue SW / I (Eye) Street SW,
2. Half Street SW / I (Eye) Street SW,
3. South Capitol Street / I (Eye) Street,
4. Delaware Avenue SW / M Street SW,
5. Half Street SW / M Street SW
6. South Capitol Street / M Street (local lanes only),

This study evaluates the transportation impacts of the following approved and planned pipeline developments in the vicinity of the site. The development programs associated with each pipeline project were determined by information from the Office of Planning and DDOT's Anacostia Waterfront Initiative and they include the following:

1. 20 M Street (office),
2. Square 0699N Phase I – 1st & L Street SE (residential),
3. Jefferson at 70 Eye Street – Phase I (residential),
4. 100 M Street SE (office and retail),
5. USDOT Headquarters (office and retail),
6. Monument Ballpark – Square 700-701 (hotel, office, residential, and retail),
7. 1325 South Capitol Street (residential and retail), and
8. 100 V Street SW (office).
9. 700 Delaware Avenue (office and residential).

Public Road Network

Regional access to The Randall School (MR Randall Capital LLC residential and Corcoran Gallery of Art) site is provided by I-295, I-395, South Capitol Street, and M Street SW/SE. Local access is provided from H Street SW via Delaware Avenue SW and M or I (Eye) Streets SW. Existing intersection lane use and traffic control at key intersections in the site vicinity are shown on Figure 2-1.

Planned Improvements

Street improvements along South Capitol Street are on a fast track to be completed by spring 2008. The improvements are described below.

Improvements to South Capitol Street include removal of the elevated viaduct north of the Frederick Douglass Memorial Bridge such that South Capitol Street intersects Potomac Avenue, P, O and N Streets at new at-grade, signalized intersections. The proposed cross-section of South Capitol Street within the 130' right-of-way from Potomac Avenue to N Street will include two 11' lanes and a 13' curb lane in both directions. The north and south traffic will be divided by an 18' median. Left turn lanes will not be provided and left turns will be restricted during peak hours. On street parking may be permitted during off-peak hours, but will be restricted during peak commuter peak periods.

Long-term improvements for South Capitol Street also include a new traffic oval at the Potomac Avenue intersection; however, this planned improvement will occur beyond the timeline contained in this traffic study. Similarly, removal of the grade-separation at South Capitol and M Street has been proposed as a long-term improvement. No firm plans for such an improvement currently exist and a timeline is unknown therefore it was not considered in the analysis.

Existing Traffic Counts

Existing AM and PM peak period vehicular and pedestrian traffic counts were conducted on Tuesday, September 26, 2006 at South Capitol Street / M Street (local lanes only) and Thursday, December 14, 2006 at the remaining five (5) study intersections listed above by Wells & Associates.

The vehicular traffic counts are presented on Figure 2-2; the pedestrian traffic counts are presented on Figure 2-3. These counts are presented in Appendix A. The resulting AM peak hour is 7:45-8:45 AM and the resulting PM peak hour is 4:00-5:00 PM.

Figure 2-3 indicates that South Capitol Street south of I (Eye) Street carries 3,922 AM peak hour vehicle-trips and 3,746 PM peak hour vehicle-trips. Approximately 57 percent of all AM peak hour trips travel in the northbound direction toward downtown Washington; 43 percent travel in the southbound direction away from the DC urban core. As would be expected of a commuter corridor the pattern is opposite during the PM peak; approximately 64 percent of all PM peak hour trips travel in the southbound direction and 36 percent travel in the northbound direction.

I (Eye) Street west of South Capitol Street carries 724 AM peak hour vehicle-trips and 870 PM peak hour vehicle-trips. Approximately 37 percent of all AM peak hour trips travel in the eastbound direction and 63 percent travel west. Approximately 78 percent of all PM peak hour trips travel in the eastbound direction and 22 percent travel in the westbound direction.

M Street west of South Capitol Street presently carries 2,422 AM peak hour vehicle-trips and 1,962 PM peak hour vehicle-trips. Approximately 27 percent of all AM peak hour trips travel in the eastbound direction and 73 percent travel west. Approximately 62 percent of all PM peak hour trips travel in the eastbound direction and 38 percent travel in the westbound direction.

Delaware Avenue south of I (Eye) Street SW currently carries 97 AM peak hour vehicle-trips and 186 PM peak hour vehicle-trips. Approximately 59 percent of all AM peak hour trips travel in the northbound direction and 54 percent travel south. Approximately 32 percent of all PM peak hour trips travel in the northbound direction and 68 percent travel in the southbound direction.

Half Street south of I (Eye) Street currently carries 273 AM peak hour vehicle-trips and 366 PM peak hour vehicle-trips. Approximately 46 percent of all AM peak hour trips travel in the northbound direction and 54 percent travel south. Approximately 32 percent of all PM peak hour trips travel in the northbound direction and 68 percent travel in the southbound direction.

The highest numbers of pedestrians were observed at the South Capitol Street/M Street intersection where 102 pedestrians crossed during the vehicular AM peak hour and at the Half Street/M Street SW intersection where 144 pedestrians crossed during the PM peak hour. At the I (Eye) Street / Half Street intersection, eight (8) pedestrians crossed Half Street during the AM peak hour and five (5) pedestrians crossed Half Street during the PM peak hour, while seven (7) and 22 pedestrians were observed crossing I (Eye) Street during the AM and PM vehicular peak hours.

Public Transportation Facilities and Services

The Waterfront/SEU Metro station is located with at the corner of M Street and 4th Street SW and the Navy Yard Metro station is located at the corner of M and Half Streets SE, both served by the Metrorail Green line. A transfer to the Orange, Yellow and Blue lines is possible two stops away at the L'Enfant Plaza station. Virginia Rail Express (VRE) commuter service is also located at L'Enfant Plaza. The Red line Metrorail transfer is four stops away at the Gallery Place-Chinatown station. Maryland Rail Commuter (MARC) service is located at Union Station.

The MR Randall Capital LLC and Corcoran Gallery of Art project is served by the V7, V8, V9, A42, A46, A48, P1 and P2 lines which run along M Street. Other bus lines located within several blocks of the site include the P6, V5, 70, 71, and A6.

Off-Street Parking

The Randall School development plan includes 485 residential condominium apartments, a 99,843 S.F. school that is anticipated to have 400 students. The proposed, three (3) level, underground parking garage for The Randall School will have 460 parking spaces; 400 for the residential and 60 for the Corcoran School of Art + Design.

Off-Street Loading

The Randall School project will provide a total of one (1) 55 feet deep loading berth, one (1) 30 feet deep berth and two (2) 20 feet service areas for both the residential and schools use. The loading area is located on the north side of the project and would be accessed from H Street SW, as shown on Figure 1-3. There may be times when the service facilities will need to be managed to make sure all tenants are accommodated.

Swept area diagrams of truck movements in and out of the loading docks are shown on Figures 2-4 through 2-5. As demonstrated in the diagrams, a single unit truck (SU 30) would be able to maneuver in and out of the dock. The tractor trailer (WB 50) would also be able to maneuver in and out of the dock; however, the trucks path would potentially encroach on some on-street parking spaces on H Street and around the Delaware Avenue/H Street traffic circle. The Corcoran School of Art + Design only requires a tractor trailer approximately four (4) or five (5) times a year. Therefore, any potential conflicts will be infrequent and can be further minimized by coordinating scheduled deliveries with the neighborhood and the District of Columbia.

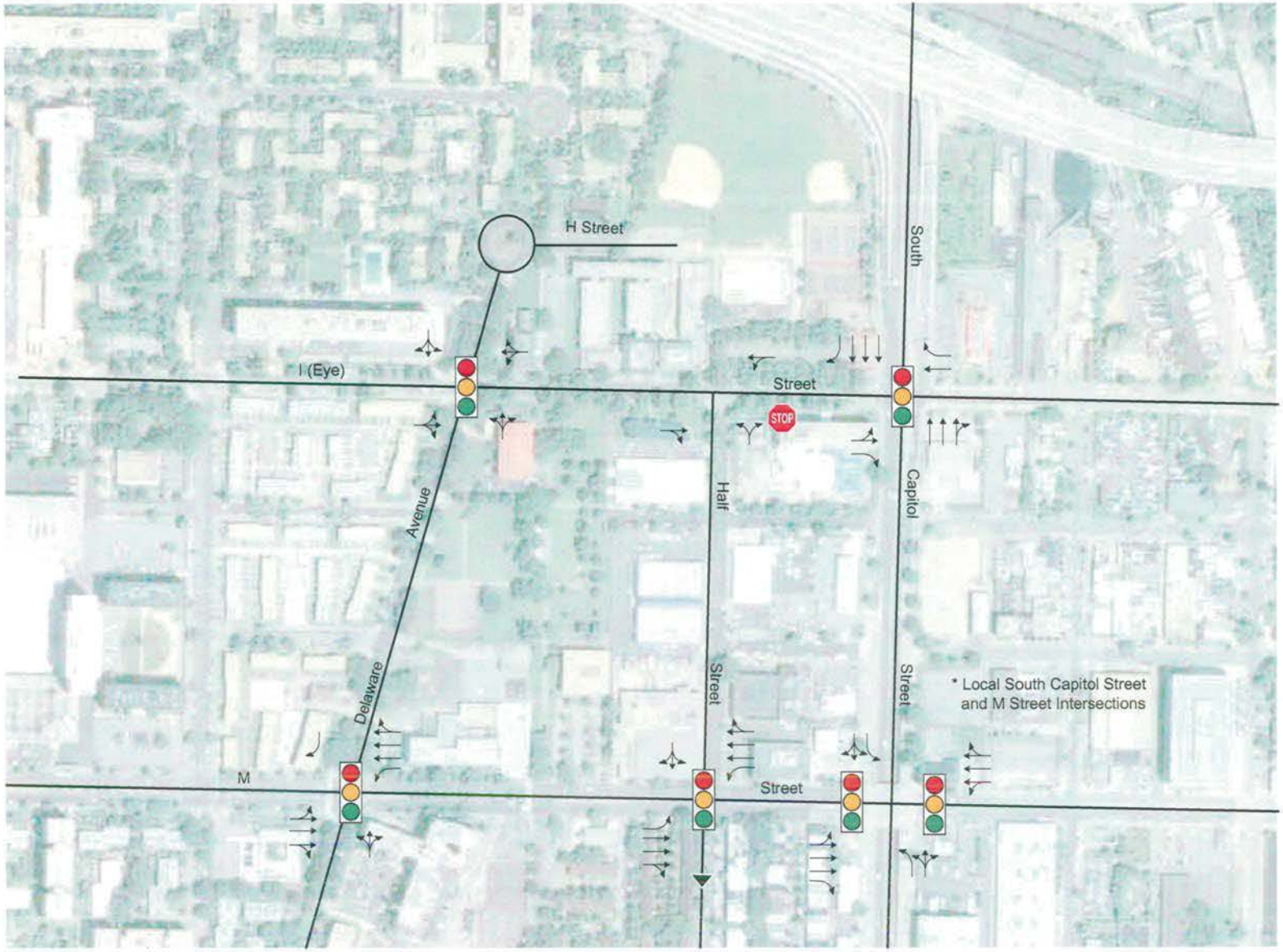

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Figure 2–1
Lane Use and Traffic Control

← Represents One Travel Lane

North

The Randall School
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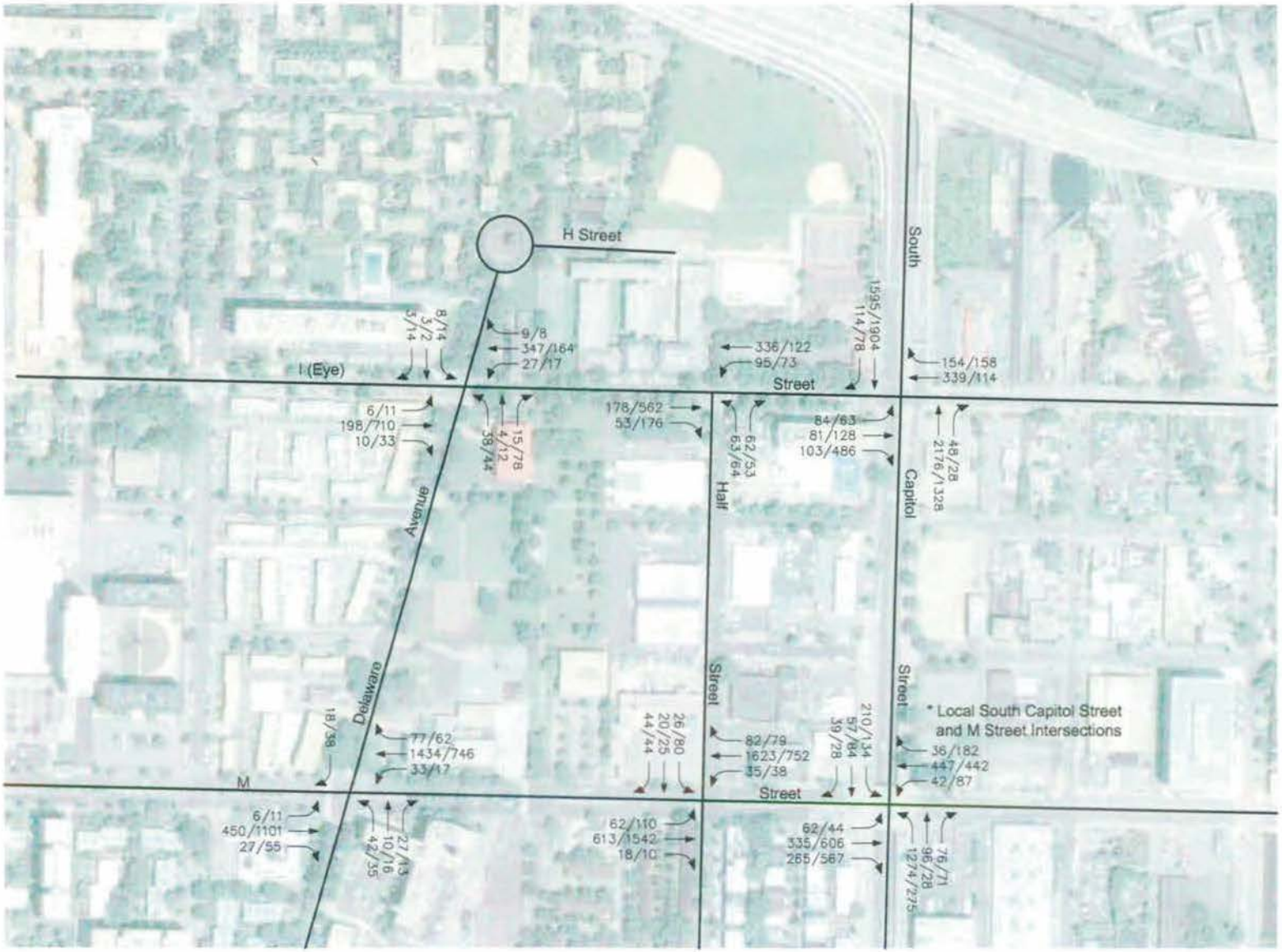

Figure 2–2
Existing Peak Hour Vehicular Traffic Counts

AM PEAK HOUR
PM PEAK HOUR
000/000

North

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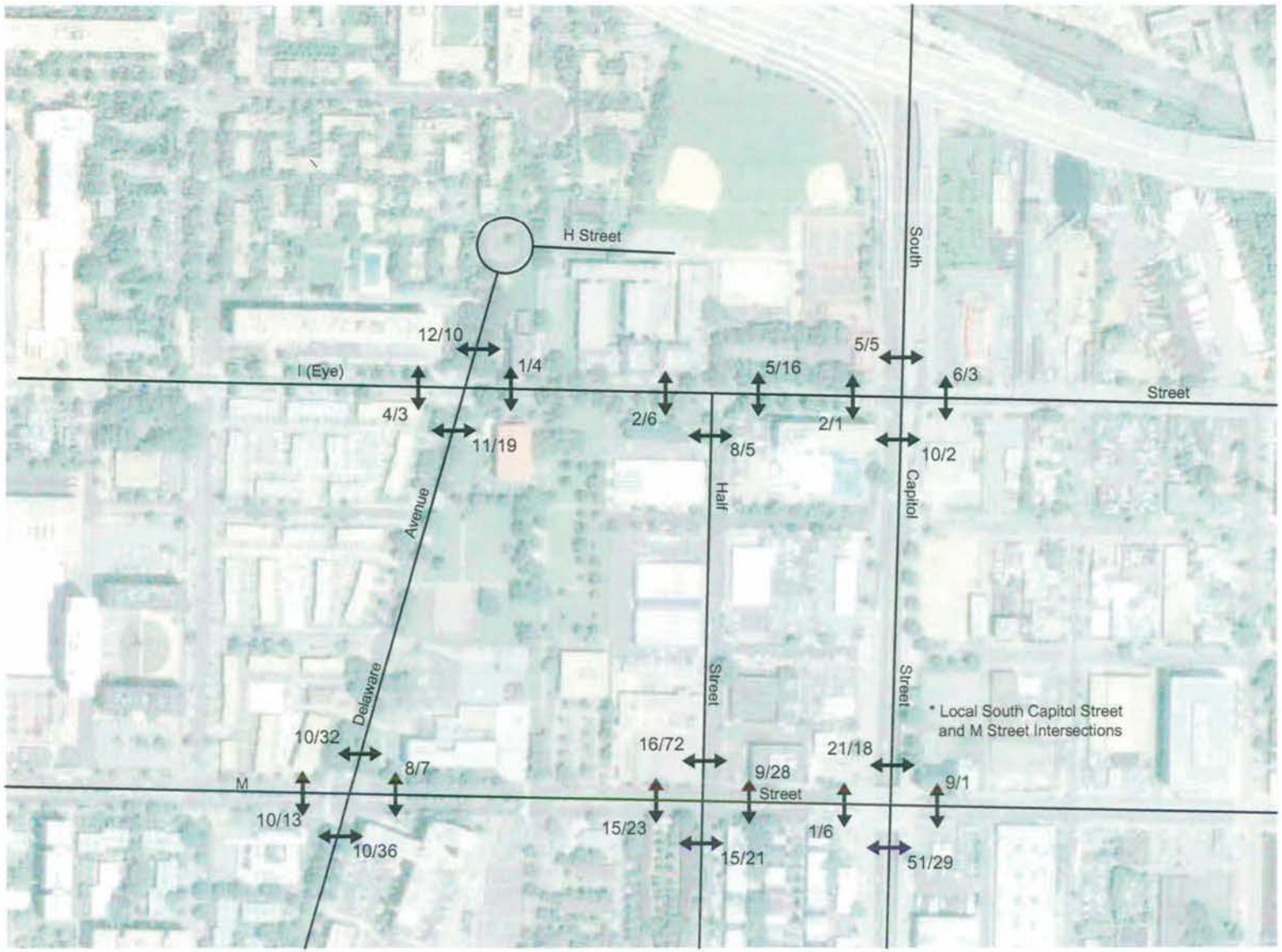

Figure 2–3
Existing Peak Hour Pedestrian Traffic

AM PEAK HOUR
PM PEAK HOUR
000/000

North

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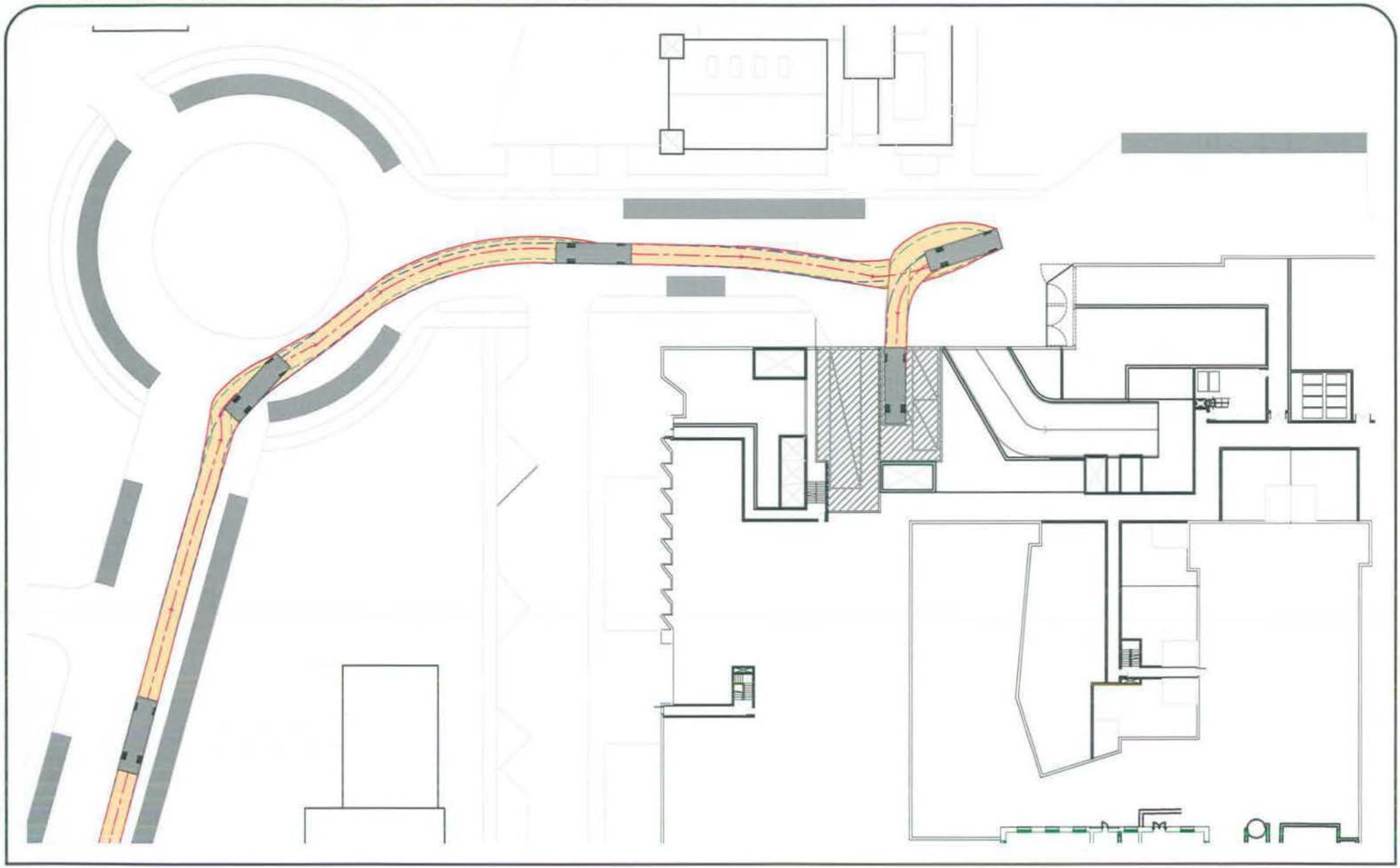

Figure 2–4
Swept Area Diagram – 30' (SU30) Single Unit Truck, Inbound

Randall School
Washington, D.C.

Wells + Associates, LLC

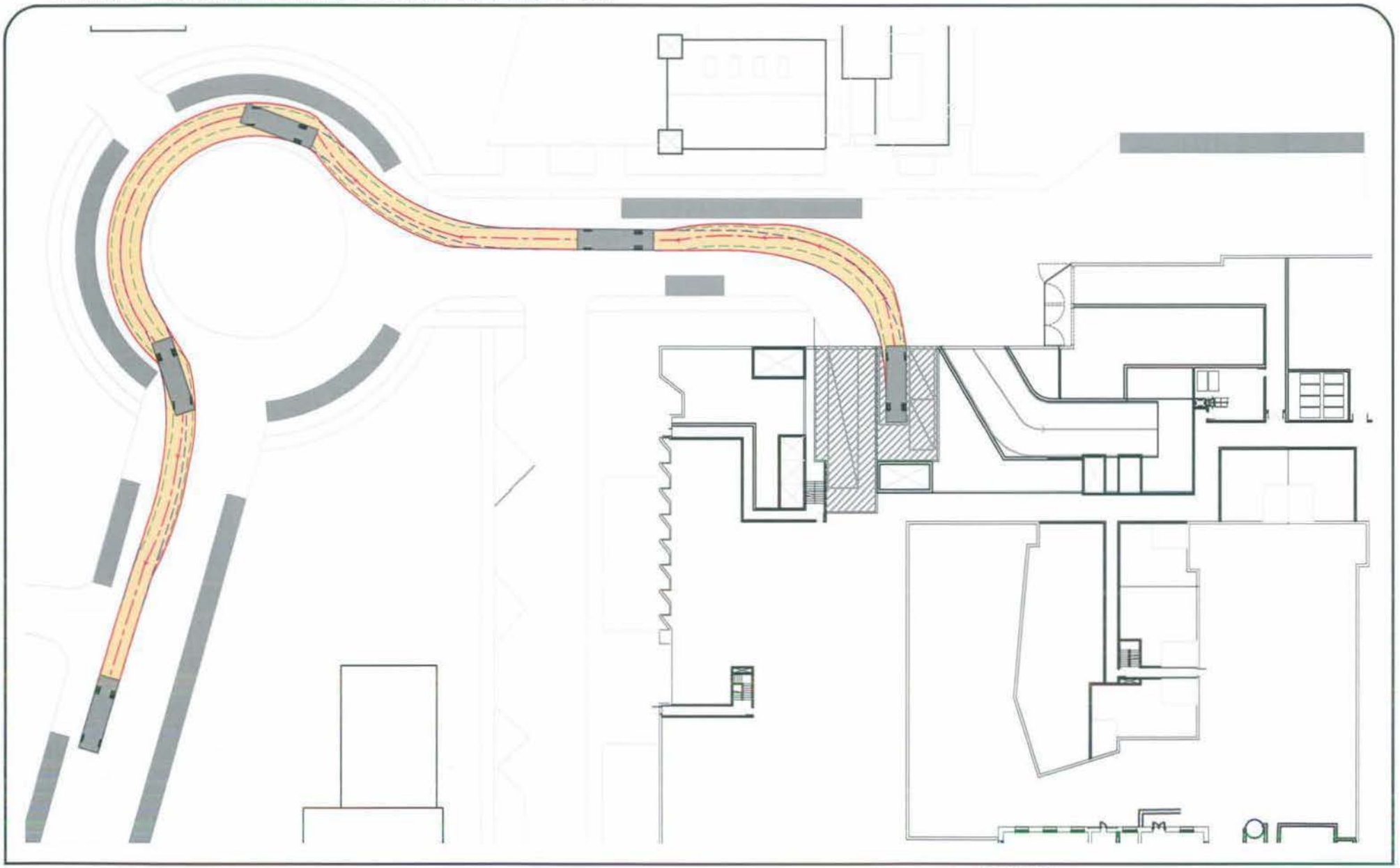

Figure 2–5
Swept Area Diagram – 30' (SU30) Single Unit Truck, Outbound

Randall School
Washington, D.C.

Wells + Associates, LLC

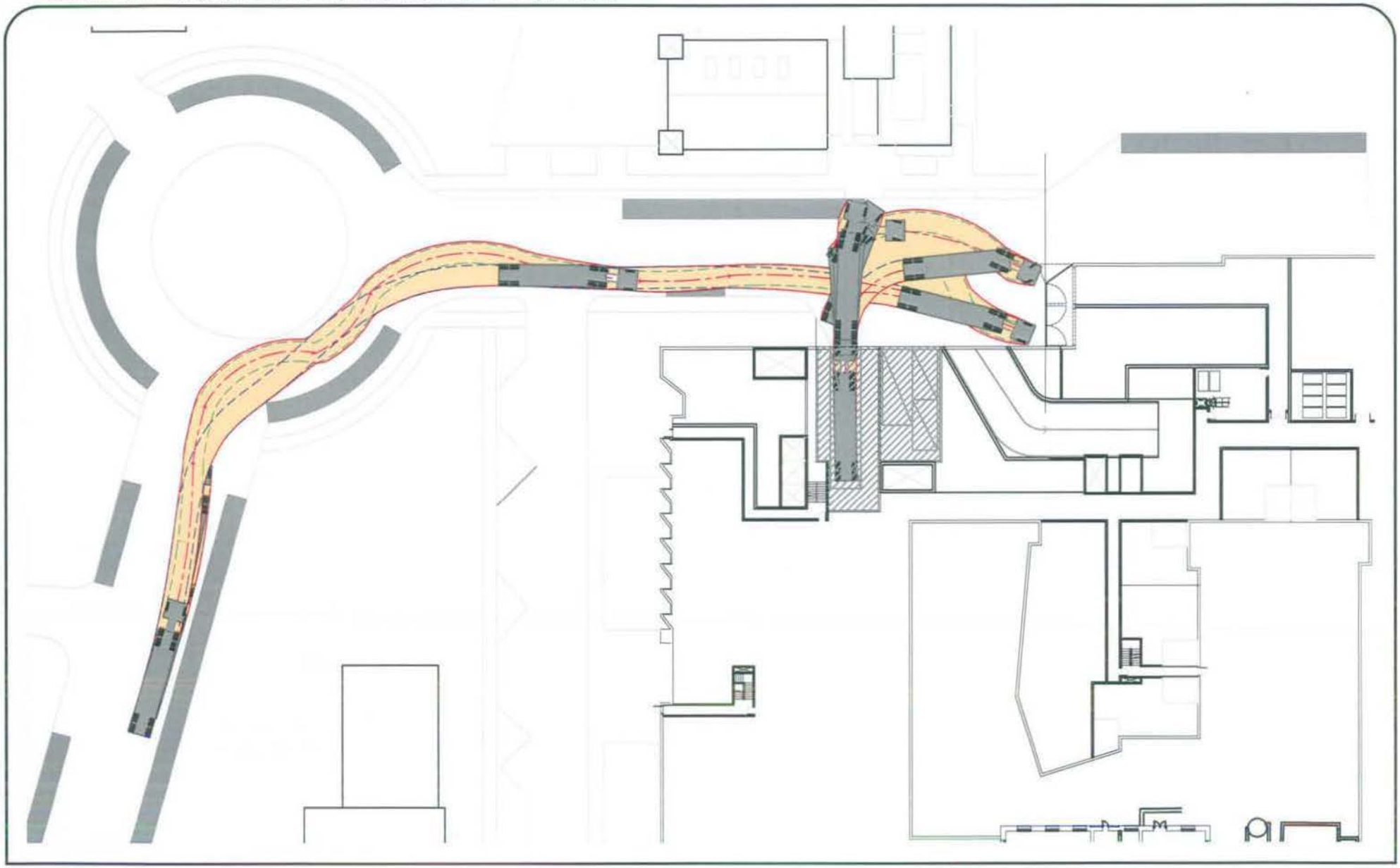

Figure 2–6
Swept Area Diagram – 55' (WB50) Semitrailer Truck, Inbound

Randall School
Washington, D.C.

Wells + Associates, LLC

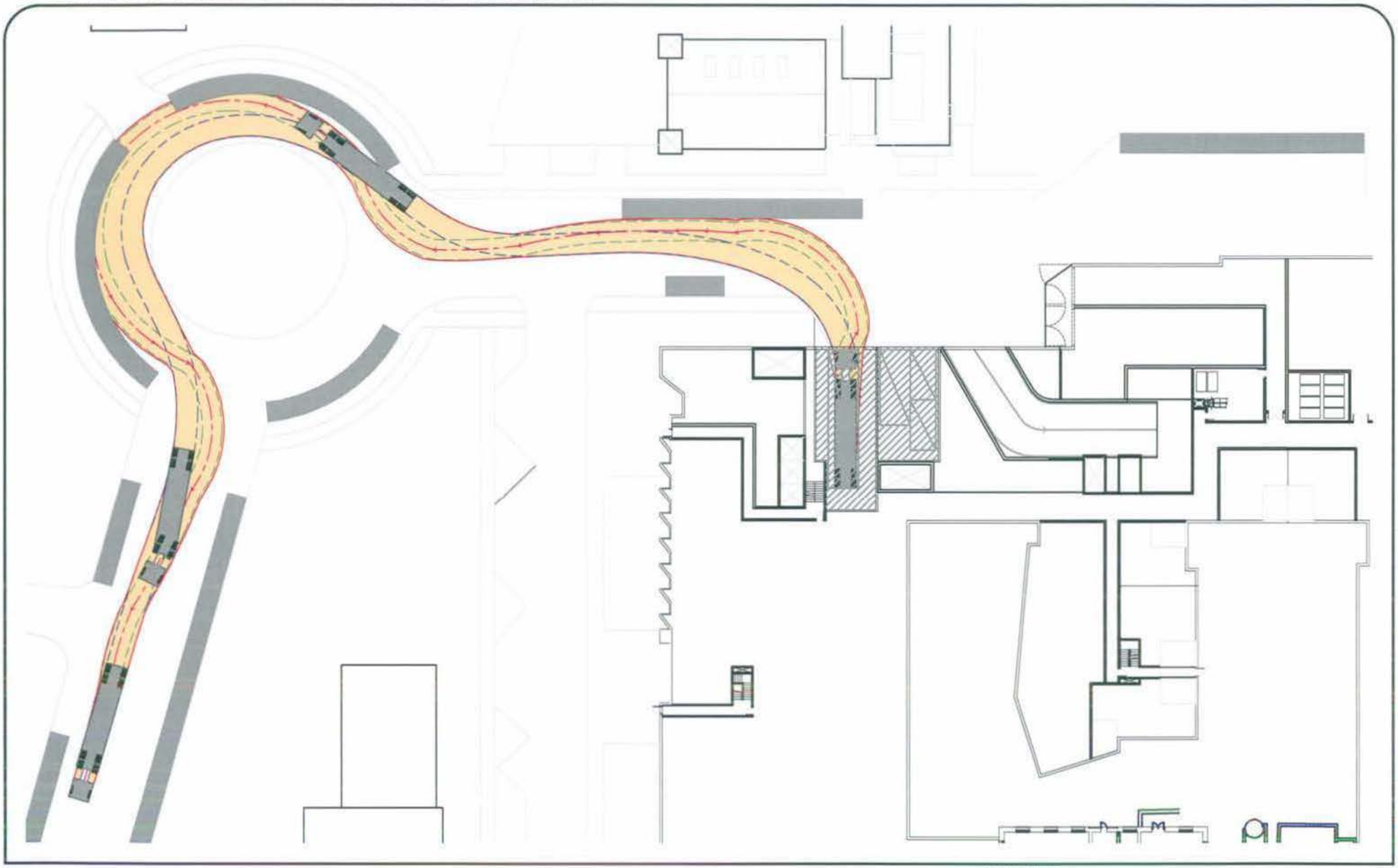

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Figure 2–7
Swept Area Diagram – 55' (WB50) Semitrailer Truck, Outbound

Randall School
Washington, D.C.

Wells + Associates, LLC

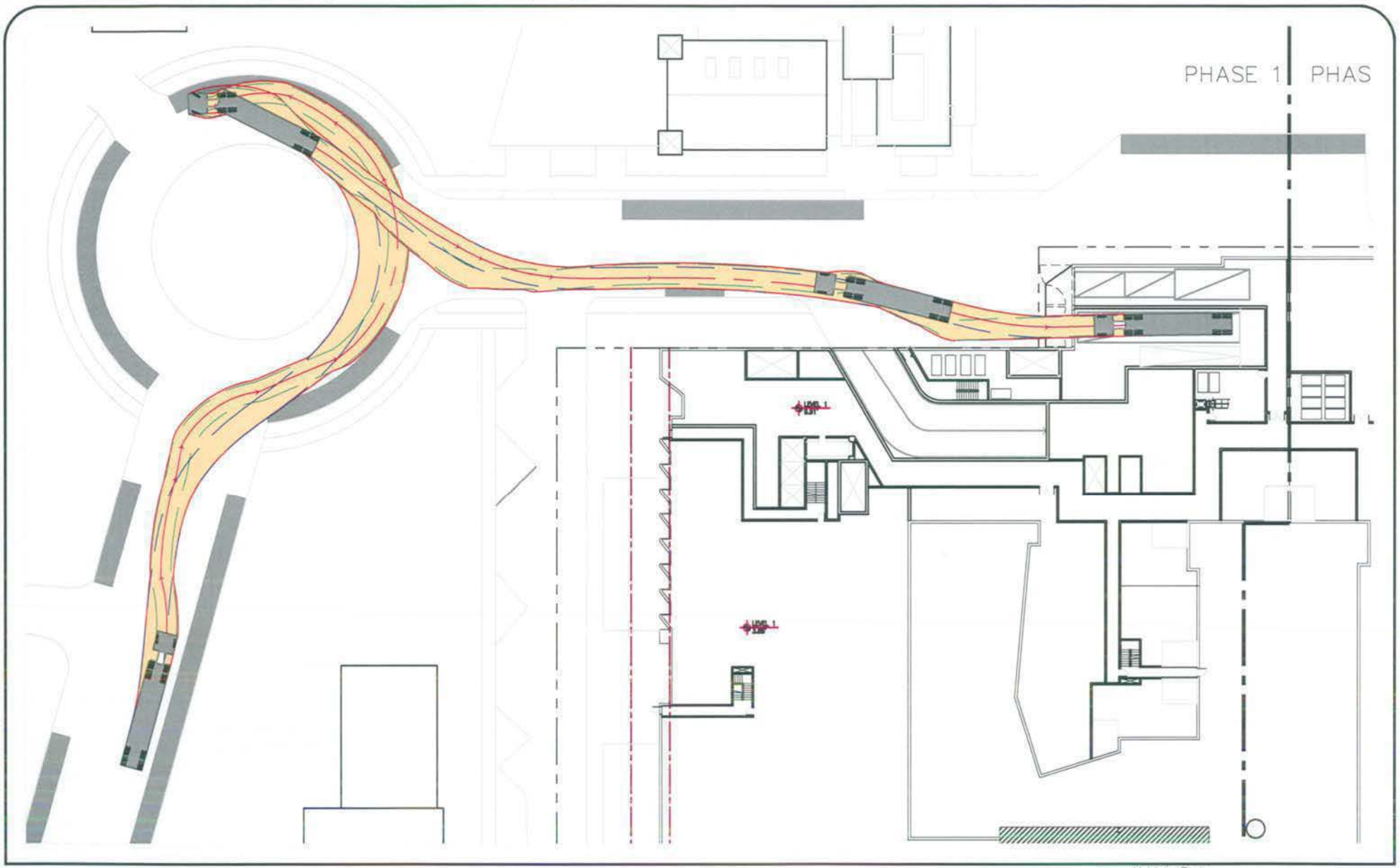

Figure 2–8
Swept Area Diagram – 55' (WB50) Semitrailer Truck, Inbound Original Plan

Randall School
Washington, D.C.

Wells + Associates, LLC

Section 3
ANALYSIS

Existing Levels of Service

Existing peak hour levels of service were estimated based on: the existing lane usage and traffic control shown on Figure 2-1; the existing vehicular and pedestrian traffic counts shown on Figures 2-2 and 2-3, respectively; existing traffic signal phasing/timings; and the Synchro intersection capacity analysis software, using the 2000 Highway Capacity Manual methodologies. The results are presented in Appendix B and summarized in Table 3-1.

South Capitol Street carries heavy amounts of regional traffic during the commuter peak hours; the peak flows are northbound (inbound) in the AM and southbound (outbound) in the PM. Vehicle queues are experienced in the peak directions along South Capitol Street; however, these queues are largely isolated to the South Capitol Street mainline. This analysis considers the operation of the South Capitol local ramps at the grade-separated M Street intersection. It also considers the at-grade South Capitol and I (Eye) Street intersection. For purposes of this analysis, the southbound signal phase for the I-395 off-ramp and for southbound South Capitol Street was treated as a single phase at the Eye Street intersection.

As shown in Table 3-1, the South Capitol Street intersection with I (Eye) Street operates at overall LOS "D" during both the AM and PM peak hours. The eastbound approach of I (Eye) Street at South Capitol Street currently operates at LOS "F" during both the AM and PM peak hours. The westbound approach of I (Eye) Street operates at LOS "E" during the AM peak hour and LOS "D" PM peak hours.

The eastbound approach of M Street at the South Capitol southbound ramp operates at LOS "E" during the AM peak hour and at LOS "F" during the PM peak hour. The southbound South Capitol Street local lanes intersection with M Street SW operates at an overall LOS "B" during the AM peak hour and at LOS "D" during the PM peak hour.

The northbound approach of the South Capitol Street northbound ramp at M Street currently operates at LOS "F" during the AM peak hour. The northbound South Capitol Street local lanes intersection with M Street currently operates at an overall LOS "E" during the AM peak hour and LOS "B" during the PM peak hour.

These delays at the South Capitol Street intersections with I (Eye) Street and with M Street are attributable to the congestion on South Capitol Street caused by commuter traffic flows. The northbound and southbound movements receive the majority of the green time (approximately 73 percent) during the signal cycle length.

The eastbound and westbound I (Eye) Street approaches at the Delaware Avenue SW intersection currently operate at LOS "A" or "B" during the AM and PM peak hours. The northbound Delaware Avenue approach operates at LOS "C" and LOS "D" during the AM and PM peak hours, while the southbound approach operates at LOS "C" during both the AM and PM peak hours. Overall, this intersection operates at LOS "A" during the AM peak hour and at LOS "B" during the PM peak hour. Signal timing data provided by the District Department of Transportation (DDOT) indicates that I (Eye) Street receives the majority of the green time (77 percent) during the traffic signal cycle length.

Each approach of the Half Street intersections with I (Eye) Street and with M Street currently operate at LOS "D" or better during both the AM and PM peak hours.

The eastbound and westbound M Street approaches at the Delaware Avenue SW intersection currently operate at LOS "A" during the AM and PM peak hours, while the Delaware Avenue intersections operate at LOS "B" or "C". Field observations indicate that M Street receives the majority of the green time during the traffic signal cycle length.

Other Development Trip Generation

The number of peak hour trips that will be generated by the nine (9) pipeline projects were generated based on ITE trip rates and WMATA mode splits percentages. As shown in Table 3-2, it is estimated that these projects will generate a total of 2,167 AM peak hour trips and 2,556 PM peak hour trips, upon completion and full occupancy. This analysis does not include trips generated by a ballpark event.

Other Development Project Traffic Assignments

The trips shown in Table 3-2 were assigned to the public road network based on the information obtained from their respective traffic studies and traffic pattern changes expected with roadway improvements. The majority of the pipeline project trips would travel north and south on South Capitol Street, approximately 29 percent during the AM peak hour and 28 percent during the PM peak hour. With the exception of the 700 Delaware Avenue project, approximately one (1) percent of the pipeline projects trips were assumed to travel east and west on Eye Street and M Street during the AM peak hour and one (1) percent during the PM peak hour. A summation of the pipeline development traffic is shown on Figure 3-1.

Background Traffic Growth

In addition to trips generated by pipeline projects, an annual background traffic growth was estimated at 2 percent per year compounded for three (3) years for project buildout, consistent with other studies conducted in the area. This growth rate was applied to all the movements at all intersections. The background traffic growth is shown on Figure 3-2.

Background Traffic Forecasts

Background peak hour traffic forecasts, without The Randall School site project, were estimated based on existing traffic counts, traffic generated by the pipeline projects, historic background traffic growth and planned roadway improvements. The resulting background traffic forecasts are shown on Figure 3-3.

Background Future Levels of Service

Future peak hour levels of service, without The Randall School project, were estimated based on: the existing lane usage and traffic control shown on Figure 2-1; the background traffic forecasts shown on Figure 3-3; the Synchro intersection capacity analysis software using the 2000 HCM methodologies; and existing signal timing and phasing. Planned roadway improvements described in this section were assumed. The results are presented in Appendix C, and are summarized in Table 3-1.

As discussed previously, South Capitol Street carries heavy amounts of regional traffic during the commuter peak hours; the peak flows are northbound (inbound) in the AM and southbound (outbound) in the PM. Vehicle queues are experienced in the peak directions along South Capitol Street; however, these queues are largely isolated to the South Capitol Street mainline. Delays at the South Capitol Street intersections with I (Eye) Street and with M Street are attributable to the congestion on South Capitol Street caused by commuter traffic flows.

As shown in Table 3-1, overall the South Capitol Street intersection with I (Eye) Street would operate at LOS "E" during the AM peak hour and at LOS "D" during the PM peak hour, based on existing signal timing and phasing. The eastbound approach of I (Eye) Street at South Capitol Street would operate at LOS "F" during both the AM and PM peak hours and the westbound approach would operate at LOS "F" during the AM peak hour and at LOS "E" during the PM peak hour.

The eastbound approach of M Street at the South Capitol southbound ramp would operate at LOS "E" during the AM peak hour and at LOS "F" during the PM peak hour. The southbound South Capitol Street local lanes intersection with M Street SW would operate at an overall LOS "D" during both the AM and PM peak hours.

The approach of the South Capitol Street northbound ramp at M Street would operate at LOS "F" during the AM peak hour and the westbound M Street approach would operate at LOS "E" during the AM peak hour. The northbound South Capitol Street local lanes intersection with M Street would operate at an overall LOS "F" during the AM peak hour and LOS "C" during the PM peak hour.

The eastbound and westbound I (Eye) Street approaches at the Delaware Avenue SW intersection would operate at LOS "A" or "B" during the AM and PM peak hours. The northbound and southbound Delaware Avenue approach would operate at LOS "C" and LOS "D" during the AM and PM peak hours. Overall this intersection operates at LOS "A" during the AM peak hour and at LOS "B" during the PM peak hour. As discussed previously, DDOT timing data indicates that I (Eye) Street receive the majority of the green time during the traffic signal cycle.

As shown in Table 3-1, the northbound turning movements on Half Street at I (Eye) Street would operate at LOS "C" during the AM peak hour and at LOS "F" during the PM peak hour, under STOP control. Vehicles would utilize gaps in traffic flow created by the traffic signals at Delaware Avenue and South Capitol Street to turn onto I (Eye) Street. Both the eastbound and westbound I (Eye) Street approaches would operate at LOS "A" during the AM and PM peak hours.

The M Street intersections with Delaware Avenue SW and with Half Street SW would operate at LOS "A" or "B" during the AM and PM peak hours. The north and/or southbound approaches at both intersections would operate at LOS "B" or "C" during the AM and PM peak hours, while the M Street approaches would operate at LOS "C" or better.

Site Trip Generation Analysis

The numbers of trips that will be generated by The Randall School project were forecasted based on: (1) ITE trip generation rates, (2) the proximity of the project to the Waterfront/SEU and Navy Yard Metrorail stations, (3) anticipated shuttle bus service for the Corcoran School of Art and Design, and (4) experience with other comparable projects in Washington, D.C. The development plan includes 485 residential units and a 400-student university, art school. The trip generation calculations are shown in Table 3-3.

The Corcoran Gallery of Arts plans to expand it student population from 500 to 1,000 students over the next three to four years. Approximately, 400 students are anticipated to utilize The Randall School campus. Student dormitories are not planned for The Randall School campus. ITE trip rates were used as the basis for estimating trips associated with the Corcoran Gallery of Arts. The Corcoran has plans to provide a shuttle service from its main campus on 17th Street NW to and from The Randall School campus for students and faculty. This shuttle service along with the metrorail and metrobus provide transportation choices for students and faculty other than the private automobile. Thus an 80 percent non-auto mode split was assumed and applied to the ITE trip rate.

Table 3-3 shows that the project would generate 100 (18 in and 82 out) AM peak hour trips, and 156 (90 in and 66 out) PM peak hour trips. These estimates assume that approximately 40 percent of all residents and 80 percent of students would use Metro or some other non-auto mode during peak hours.

Site Traffic Assignments

The site-generated traffic volumes were assigned to the public road network based on previously-approved traffic impact studies, existing traffic counts, and knowledge of future roadway improvements. The resulting site traffic assignments are shown on Figure 3-4.

Total Future Traffic Forecasts

The site traffic assignments in Figure 3-4 were added to the future background traffic volumes shown on Figure 3-3 to yield the total future traffic forecasts shown on Figure 3-5.

Total Future Levels of Service

Future peak hour levels of service, with The Randall School, were estimated based on: the existing lane usage and traffic control shown on Figure 2-1; the total future traffic forecasts shown on Figure 3-5; the Synchro intersection capacity analysis software; and existing signal timing and phasing. The results are presented in Appendix D, and are summarized in Table 3-1.

As discussed previously, South Capitol Street carries heavy amounts of regional traffic during the commuter peak hours; the peak flows are northbound (inbound) in the AM and southbound (outbound) in the PM. Vehicle queues are experienced in the peak directions along South Capitol Street; however, these queues are largely isolated to the South Capitol Street mainline. Delays at the South Capitol Street intersections with I (Eye) Street and with M Street are attributable to the congestion on South Capitol Street caused by commuter traffic flows.

As shown in Table 3-1, with modified signal timings to optimize the operation, the South Capitol Street intersection with I (Eye) Street would continue to operate at an overall LOS "E" during the AM peak hour and LOS "D" during the PM peak hour. Redistributing green time from South Capitol Street to I (Eye) Street could reduce delays on the side street. Of the peak hour trips on the eastbound approach, approximately 13 percent of the AM peak hour trips and five (5) percent of the PM peak hour trips are attributed to The Randall School.

The South Capitol Street on and off-ramp intersections with M Street would operate at similar levels of service with or without proposed Randall School project, during the AM or PM peak hours. Optimizing the signal timing could help alleviate vehicle delays and queues.

The northbound turning movements on Half Street at I (Eye) Street would operate at LOS "D" during the AM peak hour and at LOS "F" during the PM peak hour, under STOP control. Vehicles would utilize gaps in traffic flow created by the traffic signals at Delaware Avenue and South Capitol Street to turn onto I (Eye) Street. Both the eastbound and westbound I (Eye) Street approaches would operate at LOS "A" during the AM and PM peak hours.

As shown in Table 3-1, the I (Eye) Street/Delaware Avenue intersection would operate at an overall LOS "B" during the AM peak hour and "C" during the PM peak hour. The east and westbound Eye Street approaches would operate at LOS "A" or "B" during the AM and PM peak hours. The northbound Delaware Avenue approach would operate at LOS "D" during the AM and PM peak hours, while the southbound approach would operate at LOS "D" during the AM peak hour and LOS "F" during the PM peak hour. Optimizing the signal timing during the PM peak hour would reduce delays on Delaware Avenue.

The M Street intersections with Delaware Avenue and Half Street would continue to operate at levels of service similar to background levels, during both the AM and PM peak hours. Signal timing modifications can optimize capacity operations at the each of the signalized intersection during the PM peak hour.

Table 3-1
The Randall School
Intersection Level of Service Summary (1) (2) (3)

Intersection	Intersection Control	Critical Movement	Existing AM	Existing PM	Background AM	Background PM	Total Future AM	Total Future PM
1. (Eye) Street S.W. & Delaware Avenue	Signal	EB	A (4.7)	B (11.8)	A (5.0)	B (14.4)	A (5.1)	B (18.0)
		WB	A (6.0)	A (4.7)	A (6.5)	A (4.9)	A (6.6)	A (5.3)
		NB	C (32.6)	D (43.0)	D (34.8)	D (45.7)	D (35.2)	D (50.7)
		SB	C (33.6)	C (34.8)	C (33.8)	D (41.5)	D (42.5)	F (94.2)
		Overall	**A (8.4)**	**B (15.0)**	**A (8.9)**	**B (18.3)**	**B (12.4)**	**C (27.4)**
IMPROVEMENT	Signal	EB	NA	NA	NA	NA	A (7.5)	C (32.9)
Optimize Signal Timings		WB	NA	NA	NA	NA	A (9.6)	A (8.2)
		NB	NA	NA	NA	NA	C (25.2)	C (30.8)
		SB	NA	NA	NA	NA	C (34.2)	D (43.0)
		Overall	**NA**	**NA**	**NA**	**NA**	**B (12.9)**	**C (29.2)**
2. (Eye) Street S.W. & Half Street S.W.	Stop Sign	EB	A [0.0]	A [0.0]	A [0.0]	A [0.0]	A [0.0]	A [0.0]
		WB	A [2.4]	A [5.3]	A [2.5]	A [6.2]	A [2.5]	A [7.9]
		NB	C [18.3]	D [34.6]	C [22.5]	F [70.4]	D [25.9]	F [209.3]
3. (Eye) Street & South Capitol Street	Signal	EB	F (294.5)	F (263.1)	NA	NA	NA	NA
		WB	E (72.7)	D (40.9)	NA	NA	NA	NA
		NB	B (15.9)	A (9.3)	NA	NA	NA	NA
		SB	B (10.2)	B (12.2)	NA	NA	NA	NA
		Overall	**D (35.7)**	**D (52.7)**	**NA**	**NA**	**NA**	**NA**
IMPROVEMENT	Signal	EB	NA	NA	F (691.5)	F (269.5)	F (1188.3)	F (334.4)
PM Peak Hour lane use mitigation since counts were taken		WB	NA	NA	F (91.4)	E (66.0)	F (93.1)	E (65.5)
to LTR-R from 3:30 to 6:30 PM Monday through Friday		NB	NA	NA	C (20.9)	B (12.0)	C (20.9)	B (12.0)
		SB	NA	NA	B (14.4)	B (15.4)	B (14.4)	B (15.3)
		Overall	**NA**	**NA**	**E (61.4)**	**D (54.8)**	**F (97.1)**	**E (65.8)**
IMPROVEMENT	Signal	EB	NA	NA	NA	NA	F (288.5)	E (69.6)
Signal Timing Modifications Including Adding EB Lead Phase &		WB	NA	NA	NA	NA	F (92.3)	D (48.4)
AM Peak Hour lane use mitigation		NB	NA	NA	NA	NA	D (54.4)	C (28.1)
to LTR-R from 6:00 to 9:00 AM Monday through Friday		SB	NA	NA	NA	NA	C (25.8)	D (54.9)
		Overall	**NA**	**NA**	**NA**	**NA**	**E (61.2)**	**D (47.4)**
4. M Street S.W. & Delaware Avenue	Signal	EB	A (7.3)	A (9.7)	A (8.0)	B (10.6)	A (8.0)	B (10.6)
		WB	A (6.8)	A (7.2)	A (7.8)	A (8.9)	A (7.8)	A (9.3)
		NB	C (28.9)	C (28.6)	C (29.4)	C (30.2)	C (29.4)	C (30.3)
		SB	B (16.3)	C (27.0)	C (20.5)	C (27.1)	C (27.4)	C (27.1)
		Overall	**A (7.8)**	**A (9.6)**	**A (8.7)**	**B (11.0)**	**A (8.8)**	**B (11.2)**
5. M Street S.W. & Half Street S.W.	Signal	EB	B (14.5)	C (20.8)	C (20.9)	C (21.3)	C (20.9)	C (23.3)
		WB	B (11.3)	A (8.3)	B (12.0)	B (10.9)	B (11.2)	B (11.8)
		SB	C (29.3)	C (29.3)	C (29.5)	C (30.0)	C (30.8)	C (28.0)
		Overall	**B (12.8)**	**B (17.2)**	**B (15.3)**	**B (19.7)**	**B (14.8)**	**B (19.8)**
6. M Street S.W. & South Capitol Street Southbound Off Ramp	Signal	EB	E (61.8)	F (85.5)	E (56.9)	F (81.2)	E (56.9)	F (81.2)
		WB	A (0.3)	A (1.0)	A (0.6)	A (1.0)	A (0.6)	A (1.0)
		SB	C (34.0)	C (32.2)	D (49.4)	D (37.8)	D (49.4)	D (37.8)
		Overall	**B (19.0)**	**D (49.7)**	**C (22.5)**	**D (47.0)**	**C (22.5)**	**D (46.8)**
IMPROVEMENT	Signal	EB	NA	NA	NA	NA	D (54.1)	F (84.0)
Optimize Signal Timings		WB	NA	NA	NA	NA	A (0.4)	A (3.0)
		SB	NA	NA	NA	NA	D (53.3)	C (30.2)
		Overall	**NA**	**NA**	**NA**	**NA**	**C (22.4)**	**D (47.8)**
6. M Street S.W. & South Capitol Street Northbound Off Ramp	Signal	EB	A (1.5)	A (1.1)	A (2.6)	A (1.3)	A (2.6)	A (1.3)
Local S. Capitol NB		WB	D (53.6)	C (25.5)	E (79.6)	C (27.1)	E (79.9)	C (27.1)
		NB	F (122.2)	D (39.3)	F (171.5)	D (49.8)	F (172.2)	D (51.0)
		Overall	**E (79.8)**	**B (18.0)**	**F (101.8)**	**C (20.9)**	**F (102.2)**	**C (21.3)**
IMPROVEMENT	Signal	EB	NA	NA	NA	NA	A (2.6)	A (1.5)
Optimize Signal Timings		WB	NA	NA	NA	NA	E (55.4)	C (24.4)
		NB	NA	NA	NA	NA	F (172.2)	D (51.0)
		Overall	**NA**	**NA**	**NA**	**NA**	**F (97.5)**	**C (20.4)**
7. H Street S.W. & 700 Delaware Ave Site Drive / Future Site Driveway	Stop Sign	EB	NA	NA	A [7.3]	A [7.2]	A [4.0]	A [0.8]
		SB	NA	NA	A [8.3]	A [8.5]	A [9.3]	B [10.0]
		NB	NA	NA	NA	NA	A [8.3]	A [8.5]

Notes: (1) Analysis done using Synchro 6.0.
(2) Numbers in parentheses indicate average delay in seconds per vehicle for signalized intersections.
(3) Numbers in brackets indicate average delay in seconds per vehicle for stop sign controlled intersections.

Table 3-2
Corcoran School of Art & Design
Pipeline Project Trip Generation [1,2]

Background Development	Land Use	Land Use Code	Size	Units	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total
20 M Street SE										
	Office	710	180,633	S.F.	18	88	106	66	33	99
Square 0699N Phase I (1st & L Street SE)										
	Residential	230	250	D.U.	7	33	40	31	16	47
Jefferson at 70 Eye Street (Phase I)										
	Residential	220	449	D.U.	17	83	100	80	39	119
100 M Street SE										
	Office	710	225,000	S.F.	111	15	126	20	97	117
	Retail	820	15,000	S.F.	18	11	29	49	53	102
					129	26	155	69	150	219
US Department of Transportation Headquaters [3]										
	Office	710	5,500	Employees	462	35	497	47	422	469
	Retail	820	13,500	S.F.	9	6	15	24	26	50
					471	41	512	71	448	519
Monument Ballpark - Square 700 & 701 [4]										
	Residential	220	330	D.U.	13	52	65	41	21	62
	Office	710	288,285	S.F.	220	30	250	36	188	224
	Retail	820	60,000	S.F.	58	37	95	164	177	341
	Hotel	310	196	Rooms	40	26	66	30	38	68
					331	145	476	271	424	695
1325 South Capitol Street										
	Residential	220	250	D.U.	11	46	57	46	24	70
	Retail	820	3,300	S.F.	1	1	2	4	5	9
					12	47	59	50	29	79
100 V Street, SW										
	Office	710	1,100,000	S.F.	611	83	694	121	592	713
700 Delaware Avenue										
	Office	710	10,000	S.F.	14	2	16	8	40	48
	Residential	220	27	D.U.	8	1	9	3	15	18
					22	3	25	11	55	66
	Total Background Development				**1,618**	**549**	**2,167**	**770**	**1,786**	**2,556**

Notes:
(1) Based on Trip Generation, 7th Edition, Institute of Transportation Engineers.
(2) Non-auto mode splits were adapted from the U.S. Census 2000 Data Summary File 3

	20 M St	Sq 0699N	Jefferson	100 M St Off	100 M St Ret	1325 S Cap Res	1325 S Cap Ret	100 V St	700 Del. Off.	700 Del Res.
Non-auto mode split:	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Average vehicle occupancy (persons per vehicle)	1.15	1.15	1.15	1.15	1.15	1.15	1.60	1.15	1.15	1.15

	20 M St	Sq 0699N	Jefferson	100 M St Off	100 M St Ret	1325 S Cap Res	1325 S Cap Ret	100 V St	700 Del. Off.	700 Del Res.
Non-auto mode split:	60%	58%	49%	60%	36%	49%	28%	0%	53%	0%
Average vehicle occupancy (persons per vehicle)	1.30	1.30	1.30	1.30	1.30	1.15	1.60	1.30	1.30	1.30

(3) US DOT Trip Generation was taken from "United States Department of Transportation Traffic Impact Statement", Gorove-Slade Associates, March 14, 2003
(4) Monument Ballpark Trip Generation was taken from "Monumnet Ballpark – Square 700 & 701 Transportation Impact Study", Wells & Associates , December 12, 2006

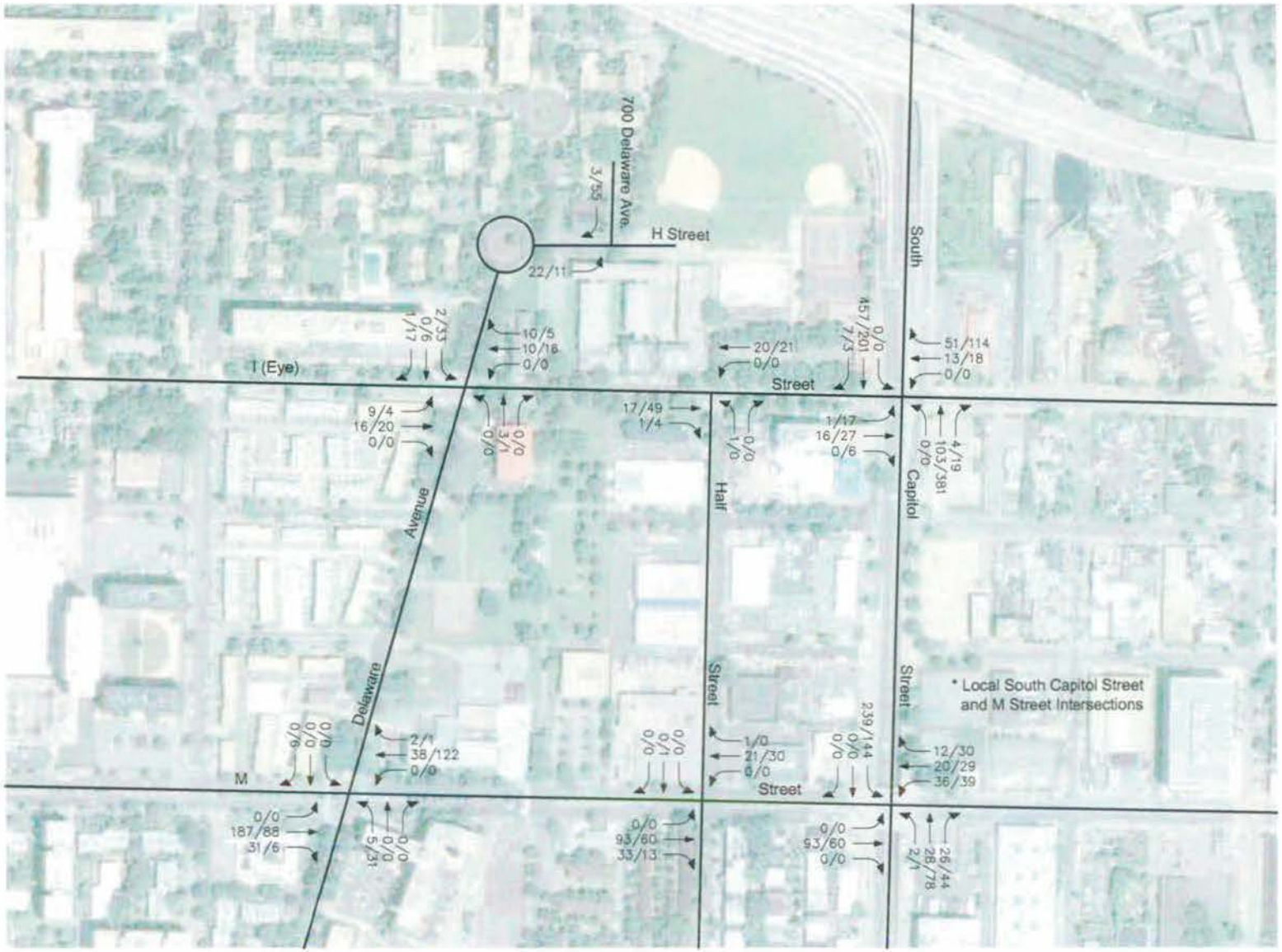

Figure 3–1
Other Development Peak Hour Traffic Assignments

AM PEAK HOUR
PM PEAK HOUR
000/000

North

The Randall School
Washington, D.C.

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TRAFFIC, TRANSPORTATION, and PARKING CONSULTANTS

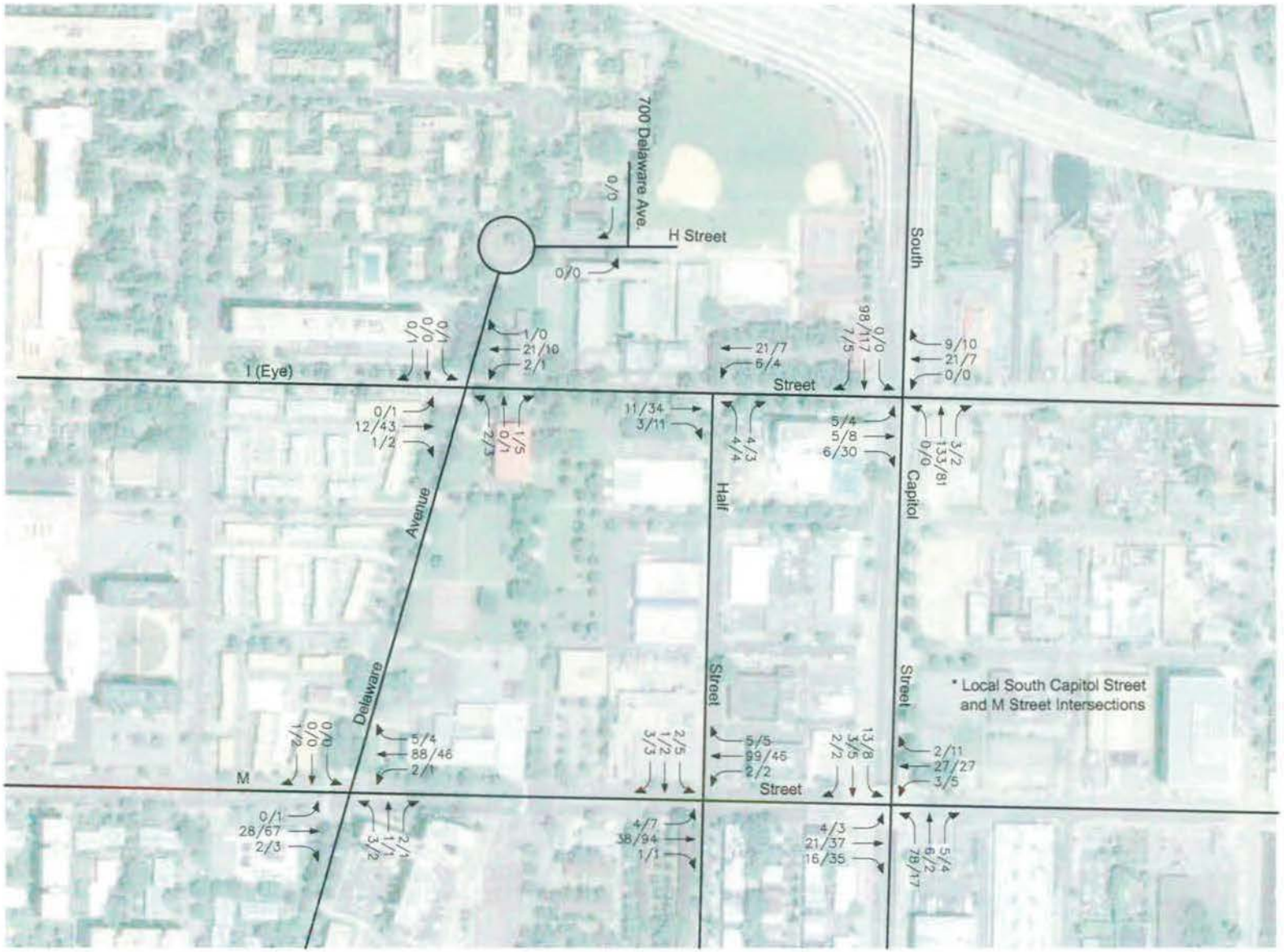

Figure 3–2
Background Traffic Growth

The Randall School
Washington, D.C.

WELLS & ASSOCIATES, LLC
TRAFFIC, TRANSPORTATION, and PARKING CONSULTANTS

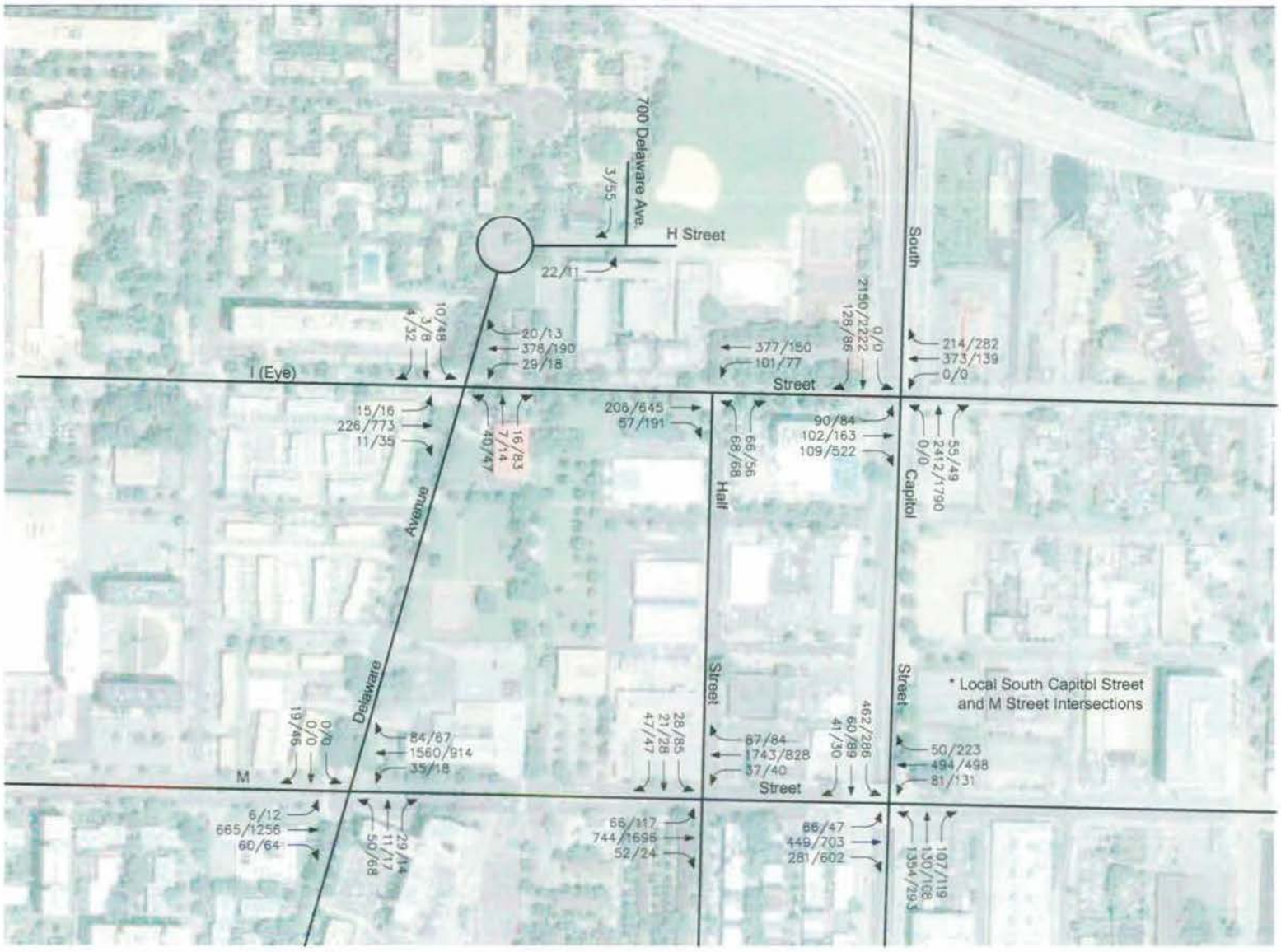

Figure 3–3
Background Future Peak Hour Traffic Forecasts

AM PEAK HOUR
PM PEAK HOUR
000/000

North

The Randall School
Washington, D.C.

WELLS & ASSOCIATES, LLC
TRAFFIC, TRANSPORTATION, and PARKING CONSULTANTS

Table 3-3
The Randall School
Trip Generation Analysis [1, 2]

Land Use	Land Use Code	Size	Units	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total
ITE Vehicle-Trips (1)									
Residential	230	485	D.U.	31	152	183	147	72	219
School	550	400	Students	12	3	15	60	141	201
			Subtotal	43	155	198	207	213	420
ITE Person-Trips (2)									
Residential	230	485	D.U.	36	174	210	169	83	252
School	550	400	Students	14	3	17	66	155	221
			Subtotal	50	177	227	235	238	473
Corcoran School of Art & Design Vehicle Trips (3, 4)									
Residential	230	485	D.U.	16	81	97	78	38	116
School	550	400	Students	2	1	3	12	28	40
			Total	18	82	100	90	66	156

Notes:
(1) Trip Generation obtained from ITE's Trip Generation, 7th Edition.
(2) Assumptions:

	Residential	School
Non-auto mode split:	0%	0%
Average vehicle occupancy (persons per vehicle)	1.15	1.10

(3) Assumptions:

	Residential	School
Non-auto mode split:	40%	80%
Average vehicle occupancy (persons per vehicle)	1.30	1.10

(4) Non-auto mode splits were adapted from the U.S. Census 2000 Data Summary File 3 and the *Development-Related Ridership Survey II*, Washington Metropolitian Area Transit Authority, December 1989.

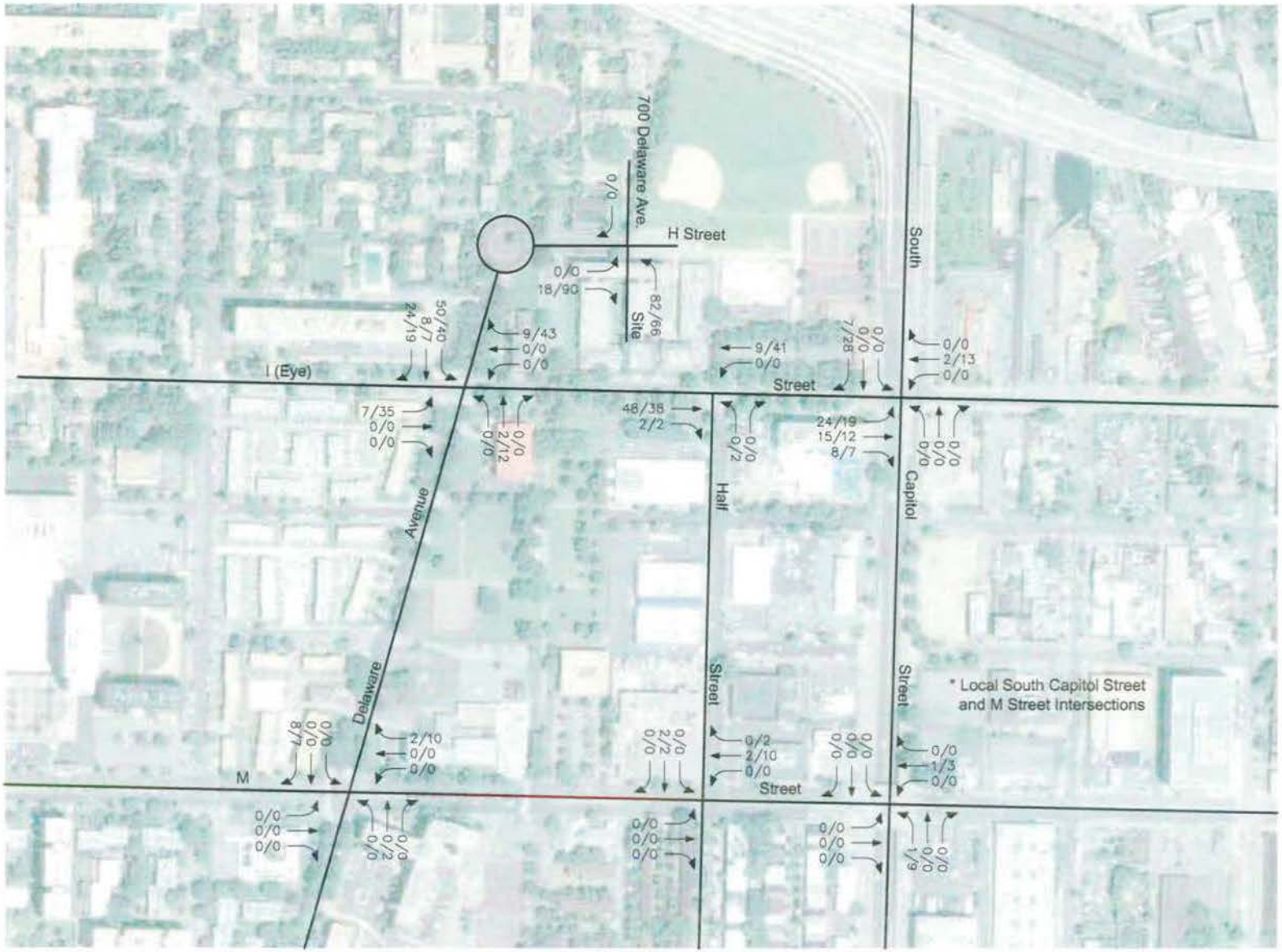

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Figure 3–4
Site–Generated Peak Hour Traffic Assignments

AM PEAK HOUR
PM PEAK HOUR
000/000

North

The Randall School
Washington, D.C.

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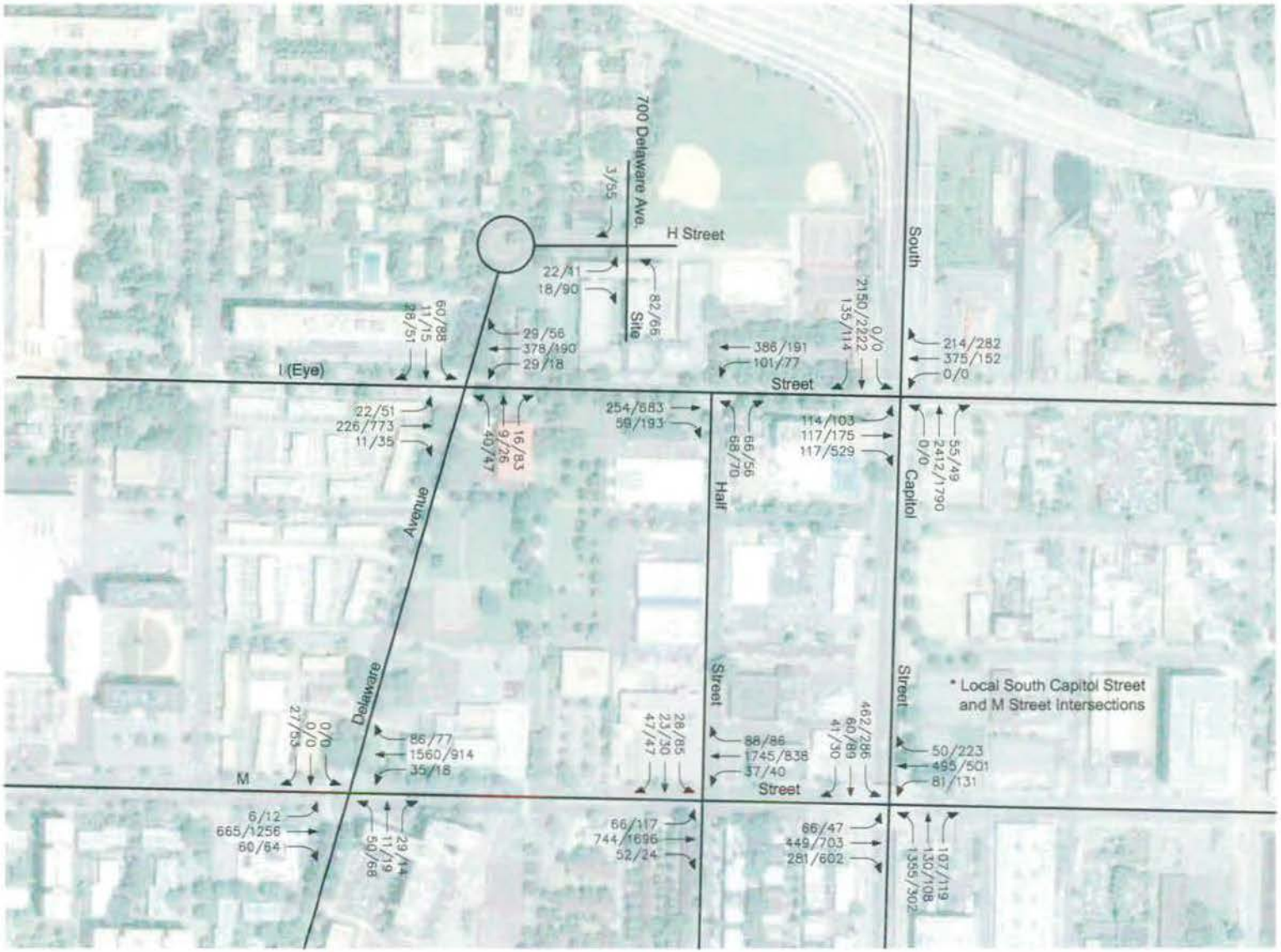


Figure 3–5
Total Future Peak Hour Traffic Forecasts

AM PEAK HOUR
PM PEAK HOUR
000/000

North

The Randall School
Washington, D.C.

WELLS & ASSOCIATES, LLC
TRAFFIC, TRANSPORTATION, and PARKING CONSULTANTS

SECTION 4
CONCLUSIONS

The conclusions of this traffic impact study are as follows:

1. The proposed Randall School project on Square 643 is located within a connected street network for both pedestrians and vehicles. The proximity to the Waterfront/SEU and Navy Yard Metrorail stations, Metrobus service, the planned Corcoran Gallery of Arts shuttle, and the urban street grid helps reduce the demand for private automobile use.

2. Heavy commuter traffic along the South Capitol Street corridor contributes to vehicle delays on the main line and at the cross streets in the study area.

3. Most of the study intersections currently operate at overall acceptable levels of service during the AM and PM peak hours with the exception of the M Street intersections with the north and southbound South Capitol Street ramps and the eastbound Eye Street approach at South Capitol Street.

4. M Street is the east-west corridor serving the SW and SE DC waterfront areas. Substantial development is planned in the vicinity that will substantially increase future traffic volumes on M Street and South Capitol Street.

5. Major roadway improvements planned along South Capitol Street will greatly improve vehicular access in the study area and will enhance the pedestrian and bicycle environment.

6. The pipeline developments in the study area would generate a total of 2,167 AM peak hour trips and 2,556 PM peak hour trips upon completion.

7. The Randall School project in Square 643, including 485 residential condominiums and the Corcoran Gallery of Arts, 400-student education facility, will generate approximately 100 AM peak hour vehicle-trips and 156 PM peak hour vehicle-trips at full build out and occupancy.

8. The study intersections would operate at overall acceptable levels of service during both the AM and PM peak hours with the exception of the M Street intersections with South Capitol Street. Some of the minor street approaches would operate at unacceptable levels of service during peak hours which is typical for an urban, minor street approach.

9. The Randall School project would provide 460 parking spaces in an underground garage; 400 spaces would be allotted to the residential condominiums and 60 spaces would be allotted for the Corcoran Gallery of Arts.

10. The Randall School site would provide sufficient loading dock accommodations. There may be times when the service facilities will need to be managed to make sure all tenants are accommodated.

Appendix A

Existing Vehicular and Pedestrian Counts

Wells & Associates, LLC

McLean, Virginia

Existing Traffic Count

PROJECT:	Corcoran-Randall Schoo	DATE:	12/14/2006	SOUTHBOUND ROAD:	South Capital Street
W & A JOB NO.:		DAY:	Thursday	NORTHBOUND ROAD:	South Capital Street
INTERSECTION:	South Capital Street, SW & Eye Street, SW	WEATHER:	Fog in Am, Clear in PM	WESTBOUND ROAD:	Eye Street
LOCATION:	Washington,DC	COUNTED BY:	Dewanna, Ebony & Gin	EASTBOUND ROAD:	Eye Street
		INPUTED BY:	ANM		

Time Period	Turning Movements																North & South	East & West	Total	PHF	Time Period
	Southbound South Capital Street				Westbound Eye Street				Northbound South Capital Street				Eastbound Eye Street								
	1 Right	2 Thru	3 Left	Total	4 Right	5 Thru	6 Left	Total	7 Right	8 Thru	9 Left	Total	10 Right	11 Thru	12 Left	Total					
AM																					
7:00-7:15	23	453	0	476	18	48	2	68	8	532	1	541	14	10	12	36	1,017	104	1,121		7:00-7:15
7:15-7:30	23	429	0	452	26	77	1	104	9	525	1	535	27	16	11	54	987	158	1,145		7:15-7:30
7:30-7:45	27	432	1	460	30	61	1	92	7	574	1	582	23	12	17	52	1,042	144	1,186		7:30-7:45
7:45-8:00	26	423	0	449	38	98	0	136	13	523	0	536	31	17	22	70	985	206	1,191		7:45-8:00
8:00-8:15	28	413	0	441	41	69	0	110	12	549	1	562	16	20	18	54	1,003	164	1,167		8:00-8:15
8:15-8:30	29	369	0	398	42	97	0	139	7	508	1	516	30	19	23	72	914	211	1,125		8:15-8:30
8:30-8:45	31	390	0	421	33	75	0	108	16	596	1	613	26	25	21	72	1,034	180	1,214		8:30-8:45
8:45-9:00	14	279	0	293	30	59	0	89	20	555	0	575	24	26	33	83	868	172	1,040		8:45-9:00
9:00-9:15	25	314	0	339	26	37	1	64	16	514	0	530	22	20	20	62	869	126	995		9:00-9:15
9:15-9:30	13	307	0	320	33	27	4	64	23	451	1	475	27	22	34	83	795	147	942		9:15-9:30
9:30-9:45	24	336	0	360	32	24	1	57	15	441	0	456	26	24	24	74	816	131	947		9:30-9:45
9:45-10:00	25	287	0	312	11	22	0	33	12	422	0	434	21	30	22	73	746	106	852		9:45-10:00
3 Hour Totals	**288**	**4,432**	**1**	**4,721**	**360**	**694**	**10**	**1,064**	**158**	**6,190**	**7**	**6,355**	**287**	**241**	**257**	**785**	**11,076**	**1,849**	**12,925**		
1 Hour Totals																					
7:00-8:00	99	1,737	1	1,837	112	284	4	400	37	2,154	3	2,194	95	55	62	212	4,031	612	4,643	0.97	7:00-8:00
7:15-8:15	104	1,697	1	1,802	135	305	2	442	41	2,171	3	2,215	97	65	68	230	4,017	672	4,689	0.98	7:15-8:15
7:30-8:30	110	1,637	1	1,748	151	325	1	477	39	2,154	3	2,196	100	68	80	248	3,944	725	4,669	0.98	7:30-8:30
7:45-8:45	114	1,595	0	1,709	154	339	0	493	48	2,176	3	2,227	103	81	84	268	3,936	761	4,697	0.97	7:45-8:45
8:00-9:00	102	1,451	0	1,553	146	300	0	446	55	2,208	3	2,266	96	90	95	281	3,819	727	4,546	0.94	8:00-9:00
8:15-9:15	99	1,352	0	1,451	131	268	1	400	59	2,173	2	2,234	102	90	97	289	3,685	689	4,374	0.90	8:15-9:15
8:30-9:30	83	1,290	0	1,373	122	198	5	325	75	2,116	2	2,193	99	93	108	300	3,566	625	4,191	0.86	8:30-9:30
8:45-9:45	76	1,236	0	1,312	121	147	6	274	74	1,961	1	2,036	99	92	111	302	3,348	576	3,924	0.94	8:45-9:45
9:00-10:00	87	1,244	0	1,331	102	110	6	218	66	1,828	1	1,895	96	96	100	292	3,226	510	3,736	0.94	9:00-10:00
AM Peak 7:45-8:45	**114**	**1,595**	**0**	**1,709**	**154**	**339**	**0**	**493**	**48**	**2,176**	**3**	**2,227**	**103**	**81**	**84**	**268**	**3,936**	**761**	**4,697**	**0.97**	**AM Peak 7:45-8:45**
PM																					
4:00-4:15	22	481	0	503	35	30	0	65	10	370	0	380	126	32	22	180	883	245	1,128		4:00-4:15
4:15-4:30	16	467	0	483	49	27	0	76	5	365	0	370	127	38	14	179	853	255	1,108		4:15-4:30
4:30-4:45	20	492	1	513	36	31	0	67	9	313	1	323	112	30	16	158	836	225	1,061		4:30-4:45
4:45-5:00	20	464	0	484	38	26	1	65	4	280	0	284	121	28	11	160	768	225	993		4:45-5:00
5:00-5:15	21	504	0	525	45	31	0	76	2	290	0	292	114	35	17	166	817	242	1,059		5:00-5:15
5:15-5:30	20	471	0	491	34	36	0	70	4	241	0	245	123	31	9	163	736	233	969		5:15-5:30
5:30-5:45	17	455	0	472	57	33	0	90	8	234	0	242	125	26	11	162	714	252	966		5:30-5:45
5:45-6:00	21	470	0	491	36	31	0	67	7	273	0	280	114	54	14	182	771	249	1,020		5:45-6:00
6:00-6:15	27	475	0	502	47	39	0	86	6	165	0	171	84	35	22	141	673	227	900		6:00-6:15
6:15-6:30	22	501	1	524	49	32	0	81	7	209	0	216	101	34	13	148	740	229	969		6:15-6:30
6:30-6:45	20	505	0	525	38	28	0	66	6	236	0	242	94	30	12	136	767	202	969		6:30-6:45
6:45-7:00	13	436	0	449	37	29	0	66	10	303	0	313	69	29	13	111	762	177	939		6:45-7:00
3 Hour Totals	**239**	**5,721**	**2**	**5,962**	**501**	**373**	**1**	**875**	**78**	**3,279**	**1**	**3,358**	**1,310**	**402**	**174**	**1,886**	**9,320**	**2,761**	**12,081**		
1 Hour Totals																					
4:00-5:00	78	1,904	1	1,983	158	114	1	273	28	1,328	1	1,357	486	128	63	677	3,340	950	4,290	0.95	4:00-5:00
4:15-5:15	77	1,927	1	2,005	168	115	1	284	20	1,248	1	1,269	474	131	58	663	3,274	947	4,221	0.95	4:15-5:15
4:30-5:30	81	1,931	1	2,013	153	124	1	278	19	1,124	1	1,144	470	124	53	647	3,157	925	4,082	0.96	4:30-5:30
4:45-5:45	78	1,894	0	1,972	174	126	1	301	18	1,045	0	1,063	483	120	48	651	3,035	952	3,987	0.94	4:45-5:45
5:00-6:00	79	1,900	0	1,979	172	131	0	303	21	1,038	0	1,059	476	146	51	673	3,038	976	4,014	0.95	5:00-6:00
5:15-6:15	85	1,871	0	1,956	174	139	0	313	25	913	0	938	446	146	56	648	2,894	961	3,855	0.94	5:15-6:15
5:30-6:30	87	1,901	1	1,989	189	135	0	324	28	881	0	909	424	149	60	633	2,898	957	3,855	0.94	5:30-6:30
5:45-6:45	90	1,951	1	2,042	170	130	0	300	26	883	0	909	393	153	61	607	2,951	907	3,858	0.95	5:45-6:45
6:00-7:00	82	1,917	1	2,000	171	128	0	299	29	913	0	942	348	128	60	536	2,942	835	3,777	0.97	6:00-7:00
PM Peak 4:00-5:00	**78**	**1,904**	**1**	**1,983**	**158**	**114**	**1**	**273**	**28**	**1,328**	**1**	**1,357**	**486**	**128**	**63**	**677**	**3,340**	**950**	**4,290**	**0.95**	**PM Peak 4:00-5:00**

Project Name: Corcoran-Randall School

Project Number:

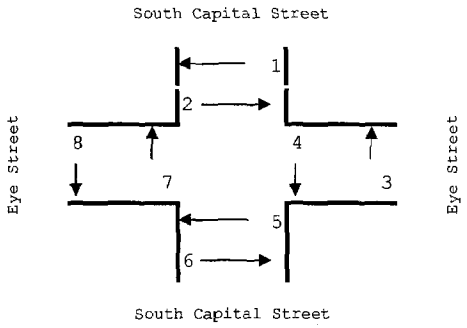
Location: Washington, DC

Intersection: South Capital Street, SW & Eye S

Weather: Fog in Am, Clear in PM

Date: 12/14/2006

Surveyor: Dewanna, Ebony & Gina



Hourly Pedestrian Count

		1	2	3	4	5	6	7	8					
	From:	SE	NE	SW	SE	SW	NW	NW	NE	Total	1 & 2	3 & 4	5 & 6	7 & 8
Time Period	To:	NE	SE	SE	SW	NW	SW	NE	NW					
AM PEAK														
7:00	8:00	0	1	1	1	1	3	1	1	9	1	2	4	2
7:15	8:15	1	1	2	1	2	1	0	1	9	2	3	3	1
7:30	8:30	2	3	3	2	7	2	0	0	19	5	5	9	0
7:45	8:45	2	3	3	3	8	2	1	1	23	5	6	10	2
8:00	9:00	3	3	2	2	9	3	1	1	24	6	4	12	2
8:15	9:15	2	3	1	2	8	5	4	1	26	5	3	13	5
8:30	9:30	1	8	0	1	5	3	5	1	24	9	1	8	6
8:45	9:45	1	7	0	0	4	4	4	0	20	8	0	8	4
9:00	10:00	0	7	2	0	2	4	4	0	19	7	2	6	4
PM PEAK														
16:00	17:00	2	3	2	1	1	1	1	0	11	5	3	2	1
16:15	17:15	1	2	6	1	3	9	2	2	26	3	7	12	4
16:30	17:30	1	3	6	2	3	11	1	2	29	4	8	14	3
16:45	17:45	1	3	6	4	4	13	1	2	34	4	10	17	3
17:00	18:00	0	5	6	10	5	13	1	2	42	5	16	18	3
17:15	18:15	4	5	0	10	3	4	1	4	31	9	10	7	5
17:30	18:30	4	4	0	9	3	5	2	4	31	8	9	8	6
17:45	18:45	4	3	1	7	2	3	2	4	26	7	8	5	6
18:00	19:00	9	0	4	2	4	3	3	8	33	9	6	7	11

Wells & Associates, LLC

McLean, Virginia

Existing Traffic Count

PROJECT:	Corcoran-Randall School	DATE:	12/14/2006	SOUTHBOUND ROAD:	X	
W & A JOB NO.:		DAY:	Thursday	NORTHBOUND ROAD:	Half Street, SW	
INTERSECTION:	Eye Street, SW & Half Street, SW	WEATHER:	Fog in Am, Clear in PM	WESTBOUND ROAD:	Eye Street, Sw	
LOCATION:	Washington,DC	COUNTED BY:	Washington	EASTBOUND ROAD:	Eye Street, Sw	
		INPUTED BY:	ANM			

Time Period	Turning Movements																		Total	PHF	Time Period
	Southbound X				Westbound Eye Street, Sw				Northbound Half Street, SW				Eastbound Eye Street, Sw				North & South	East & West			
	1 Right	2 Thru	3 Left	Total	4 Right	5 Thru	6 Left	Total	7 Right	8 Thru	9 Left	Total	10 Right	11 Thru	12 Left	Total					
AM																					
7:00-7:15	0	0	0	0	0	56	13	69	8	0	16	24	8	27	0	35	24	104	128		7:00-7:15
7:15-7:30	0	0	0	0	0	77	14	91	5	0	11	16	9	39	0	48	16	139	155		7:15-7:30
7:30-7:45	0	0	0	0	0	68	23	91	13	0	15	28	14	48	0	62	28	153	181		7:30-7:45
7:45-8:00	0	0	0	0	0	104	22	126	15	0	13	28	12	47	0	59	28	185	213		7:45-8:00
8:00-8:15	0	0	0	0	0	70	26	96	15	0	14	29	15	41	0	56	29	152	181		8:00-8:15
8:15-8:30	0	0	0	0	0	98	22	120	13	0	13	26	14	44	0	58	26	178	204		8:15-8:30
8:30-8:45	0	0	0	0	0	64	25	89	19	0	23	42	12	46	0	58	42	147	189		8:30-8:45
8:45-9:00	0	0	0	0	0	48	27	75	14	0	18	32	22	55	0	77	32	152	184		8:45-9:00
9:00-9:15	0	0	0	0	0	42	16	58	24	0	9	33	13	39	0	52	33	110	143		9:00-9:15
9:15-9:30	0	0	0	0	0	26	11	37	17	0	9	26	11	40	0	51	26	88	114		9:15-9:30
9:30-9:45	0	0	0	0	0	34	10	44	25	0	7	32	8	46	0	54	32	98	130		9:30-9:45
9:45-10:00	0	0	0	0	0	19	19	38	16	0	8	24	14	40	0	54	24	92	116		9:45-10:00
3 Hour Totals	**0**	**0**	**0**	**0**	**0**	**706**	**228**	**934**	**184**	**0**	**156**	**340**	**152**	**512**	**0**	**664**	**340**	**1,598**	**1,938**		
1 Hour Totals																					
7:00-8:00	0	0	0	0	0	305	72	377	41	0	55	96	43	161	0	204	96	581	677	0.79	7:00-8:00
7:15-8:15	0	0	0	0	0	319	85	404	48	0	53	101	50	175	0	225	101	629	730	0.86	7:15-8:15
7:30-8:30	0	0	0	0	0	340	93	433	56	0	55	111	55	180	0	235	111	668	779	0.91	7:30-8:30
7:45-8:45	0	0	0	0	0	336	95	431	62	0	63	125	53	178	0	231	125	662	787	0.92	7:45-8:45
8:00-9:00	0	0	0	0	0	280	100	380	61	0	68	129	63	186	0	249	129	629	758	0.93	8:00-9:00
8:15-9:15	0	0	0	0	0	252	90	342	70	0	63	133	61	184	0	245	133	587	720	0.88	8:15-9:15
8:30-9:30	0	0	0	0	0	180	79	259	74	0	59	133	58	180	0	238	133	497	630	0.83	8:30-9:30
8:45-9:45	0	0	0	0	0	150	64	214	80	0	43	123	54	180	0	234	123	448	571	0.78	8:45-9:45
9:00-10:00	0	0	0	0	0	121	56	177	82	0	33	115	46	165	0	211	115	388	503	0.88	9:00-10:00
AM Peak 7:45-8:45	**0**	**0**	**0**	**0**	**0**	**336**	**95**	**431**	**62**	**0**	**63**	**125**	**53**	**178**	**0**	**231**	**125**	**662**	**787**	**0.92**	**AM Peak 7:45-8:45**
PM																					
4:00-4:15	0	0	0	0	0	31	19	50	14	0	16	30	34	148	0	182	30	232	262		4:00-4:15
4:15-4:30	0	0	0	0	0	26	21	47	17	0	8	25	49	145	0	194	25	241	266		4:15-4:30
4:30-4:45	0	0	0	0	0	33	18	51	13	0	22	35	50	127	0	177	35	228	263		4:30-4:45
4:45-5:00	0	0	0	0	0	32	15	47	9	0	18	27	43	142	0	185	27	232	259		4:45-5:00
5:00-5:15	0	0	0	0	0	28	16	44	12	0	9	21	56	128	0	184	21	228	249		5:00-5:15
5:15-5:30	0	0	0	0	0	39	18	57	16	0	17	33	46	135	0	181	33	238	271		5:15-5:30
5:30-5:45	0	0	0	0	0	37	14	51	15	0	17	32	52	141	0	193	32	244	276		5:30-5:45
5:45-6:00	0	0	0	0	0	36	17	53	15	0	21	36	56	145	0	201	36	254	290		5:45-6:00
6:00-6:15	0	0	0	0	0	53	13	66	16	0	20	36	46	121	0	167	36	233	269		6:00-6:15
6:15-6:30	0	0	1	1	0	51	7	58	13	0	14	27	61	119	0	180	28	238	266		6:15-6:30
6:30-6:45	0	0	0	0	0	36	11	47	12	0	18	30	25	98	0	123	30	170	200		6:30-6:45
6:45-7:00	0	0	0	0	0	29	13	42	11	0	14	25	23	100	0	123	25	165	190		6:45-7:00
3 Hour Totals	**0**	**0**	**1**	**1**	**0**	**431**	**182**	**613**	**163**	**0**	**194**	**357**	**541**	**1,549**	**0**	**2,090**	**358**	**2,703**	**3,061**		
1 Hour Totals																					
4:00-5:00	0	0	0	0	0	122	73	195	53	0	64	117	176	562	0	738	117	933	1,050	0.99	4:00-5:00
4:15-5:15	0	0	0	0	0	119	70	189	51	0	57	108	198	542	0	740	108	929	1,037	0.97	4:15-5:15
4:30-5:30	0	0	0	0	0	132	67	199	50	0	66	116	195	532	0	727	116	926	1,042	0.96	4:30-5:30
4:45-5:45	0	0	0	0	0	136	63	199	52	0	61	113	197	546	0	743	113	942	1,055	0.96	4:45-5:45
5:00-6:00	0	0	0	0	0	140	65	205	58	0	64	122	210	549	0	759	122	964	1,086	0.94	5:00-6:00
5:15-6:15	0	0	0	0	0	165	62	227	62	0	75	137	200	542	0	742	137	969	1,106	0.95	5:15-6:15
5:30-6:30	0	0	1	1	0	177	51	228	59	0	72	131	215	526	0	741	132	969	1,101	0.95	5:30-6:30
5:45-6:45	0	0	1	1	0	176	48	224	56	0	73	129	188	483	0	671	130	895	1,025	0.88	5:45-6:45
6:00-7:00	0	0	1	1	0	169	44	213	52	0	66	118	155	438	0	593	119	806	925	0.86	6:00-7:00
PM Peak 5:15-6:15	**0**	**0**	**0**	**0**	**0**	**165**	**62**	**227**	**62**	**0**	**75**	**137**	**200**	**542**	**0**	**742**	**137**	**969**	**1,106**	**0.95**	**PM Peak 5:15-6:15**

Project Name: Corcoran-Randall School

Project Number:

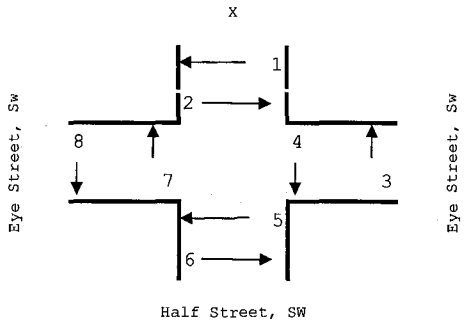
Location: Washington,DC

Intersection: Eye Street, SW & Half Street, SW

Weather: Fog in Am, Clear in PM

Date: 12/14/2006

Surveyor: Washington



Hourly Pedestrian Count

		1	2	3	4	5	6	7	8					
	From:	SE	NE	SW	SE	SW	NW	NW	NE	Total	1 & 2	3 & 4	5 & 6	7 & 8
Time Period	To:	NE	SE	SE	SW	NW	SW	NE	NW					
AM PEAK														
7:00	8:00	0	0	4	0	0	0	0	0	4	0	4	0	0
7:15	8:15	0	0	4	0	0	0	0	0	4	0	4	0	0
7:30	8:30	2	4	2	0	0	1	0	1	10	6	2	1	1
7:45	8:45	3	4	5	0	4	4	1	1	22	7	5	8	2
8:00	9:00	3	4	5	0	4	4	1	1	22	7	5	8	2
8:15	9:15	5	4	5	0	4	4	1	2	25	9	5	8	3
8:30	9:30	5	0	10	0	4	3	2	2	26	5	10	7	4
8:45	9:45	5	0	7	0	0	1	2	2	17	5	7	1	4
9:00	10:00	5	0	7	0	0	1	2	2	17	5	7	1	4
PM PEAK														
16:00	17:00	2	2	11	5	5	0	1	5	31	4	16	5	6
16:15	17:15	1	3	14	1	7	2	4	5	37	4	15	9	9
16:30	17:30	0	6	12	2	6	4	5	6	41	6	14	10	11
16:45	17:45	3	8	11	3	2	4	11	4	46	11	14	6	15
17:00	18:00	3	22	10	3	2	4	11	1	56	25	13	6	12
17:15	18:15	5	27	4	3	0	2	8	1	50	32	7	2	9
17:30	18:30	8	24	4	2	0	0	9	0	47	32	6	0	9
17:45	18:45	23	23	3	2	1	7	3	0	62	46	5	8	3
18:00	19:00	30	10	1	2	2	8	4	6	63	40	3	10	10

Wells & Associates, LLC

McLean, Virginia

Existing Traffic Count

PROJECT:	Corcoran-Randall School	DATE:	12/14/2006	SOUTHBOUND ROAD:	Delaware Avenue, SW
W & A JOB NO.:		DAY:	Thursday	NORTHBOUND ROAD:	Delaware Avenue, SW
INTERSECTION:	Delaware Avenue, SW & Eye Street, SW	WEATHER:	Fog in Am, Clear in PM	WESTBOUND ROAD:	Eye Street, Sw
LOCATION:	Washington,DC	COUNTED BY:	Al & Gerrye	EASTBOUND ROAD:	Eye Street, Sw
		INPUTED BY:	ANM		

Time Period	Turning Movements: Southbound Delaware Avenue, SW				Westbound Eye Street, Sw				Northbound Delaware Avenue, SW				Eastbound Eye Street, Sw				North & South	East & West	Tota	PHF	Time Period
	1 Right	2 Thru	3 Left	Total	4 Right	5 Thru	6 Left	Total	7 Right	8 Thru	9 Left	Total	10 Right	11 Thru	12 Left	Total					
AM																					
7:00-7:15	0	0	2	2	0	64	6	70	2	0	3	5	2	30	0	32	7	102	109		7:00-7:15
7:15-7:30	1	1	0	2	1	79	8	88	2	2	4	8	1	48	2	51	10	139	149		7:15-7:30
7:30-7:45	1	0	1	2	3	71	5	79	4	0	6	10	3	55	2	60	12	139	151		7:30-7:45
7:45-8:00	1	1	3	5	1	104	10	115	3	0	6	9	3	54	0	57	14	172	186		7:45-8:00
8:00-8:15	0	1	1	2	0	70	7	77	8	0	11	19	4	40	0	44	21	121	142		8:00-8:15
8:15-8:30	0	0	1	1	5	94	7	106	0	1	12	13	1	55	3	59	14	165	179		8:15-8:30
8:30-8:45	2	1	3	6	3	79	3	85	4	3	9	16	2	49	3	54	22	139	161		8:30-8:45
8:45-9:00	1	0	6	7	2	55	11	68	7	5	6	18	1	62	1	64	25	132	157		8:45-9:00
9:00-9:15	2	1	1	4	2	46	5	53	7	2	2	11	2	45	2	49	15	102	117		9:00-9:15
9:15-9:30	1	1	3	5	5	28	3	36	4	1	5	10	1	42	0	43	15	79	94		9:15-9:30
9:30-9:45	4	0	5	9	4	30	3	37	6	3	4	13	3	41	1	45	22	82	104		9:30-9:45
9:45-10:00	0	4	4	8	2	29	1	32	5	1	4	10	1	41	1	43	18	75	93		9:45-10:00
3 Hour Totals	**13**	**10**	**30**	**53**	**28**	**749**	**69**	**846**	**52**	**18**	**72**	**142**	**24**	**562**	**15**	**601**	**195**	**1,447**	**1,642**		
1 Hour Totals																					
7:00-8:00	3	2	6	11	5	318	29	352	11	2	19	32	9	187	4	200	43	552	595	0.80	7:00-8:00
7:15-8:15	3	3	5	11	5	324	30	359	17	2	27	46	11	197	4	212	57	571	628	0.84	7:15-8:15
7:30-8:30	2	2	6	10	9	339	29	377	15	1	35	51	11	204	5	220	61	597	658	0.88	7:30-8:30
7:45-8:45	3	3	8	14	9	347	27	383	15	4	38	57	10	198	6	214	71	597	668	0.90	7:45-8:45
8:00-9:00	3	2	11	16	10	298	28	336	19	9	38	66	8	206	7	221	82	557	639	0.89	8:00-9:00
8:15-9:15	5	2	11	18	12	274	26	312	18	11	29	58	6	211	9	226	76	538	614	0.86	8:15-9:15
8:30-9:30	6	3	13	22	12	208	22	242	22	11	22	55	6	198	6	210	77	452	529	0.82	8:30-9:30
8:45-9:45	8	2	15	25	13	159	22	194	24	11	17	52	7	190	4	201	77	395	472	0.75	8:45-9:45
9:00-10:00	7	6	13	26	13	133	12	158	22	7	15	44	7	169	4	180	70	338	408	0.87	9:00-10:00
AM Peak 7:45-8:45	**3**	**3**	**8**	**14**	**9**	**347**	**27**	**383**	**15**	**4**	**38**	**57**	**10**	**198**	**6**	**214**	**71**	**597**	**668**	**0.90**	**AM Peak 7:45-8:45**
PM																					
4:00-4:15	2	1	4	7	1	40	6	47	23	0	10	33	5	172	6	183	40	230	270		4:00-4:15
4:15-4:30	2	0	3	5	0	34	3	37	22	0	9	31	6	189	3	198	36	235	271		4:15-4:30
4:30-4:45	7	0	3	10	6	48	5	59	16	11	10	37	7	172	2	181	47	240	287		4:30-4:45
4:45-5:00	3	1	4	8	1	42	3	46	17	1	15	33	15	177	0	192	41	238	279		4:45-5:00
5:00-5:15	6	2	1	9	1	37	4	42	12	2	12	26	10	191	2	203	35	245	280		5:00-5:15
5:15-5:30	1	0	2	3	2	46	3	51	14	4	9	27	8	186	1	195	30	246	276		5:15-5:30
5:30-5:45	0	0	2	2	2	46	5	53	14	1	10	25	13	200	2	215	27	268	295		5:30-5:45
5:45-6:00	6	1	2	9	1	56	3	60	8	4	4	16	6	174	1	181	25	241	266		5:45-6:00
6:00-6:15	1	0	1	2	1	64	7	72	14	0	12	26	5	172	0	177	28	249	277		6:00-6:15
6:15-6:30	4	1	1	6	0	55	7	62	15	0	6	21	3	149	1	153	27	215	242		6:15-6:30
6:30-6:45	3	1	2	6	1	35	8	44	4	2	3	9	2	116	1	119	15	163	178		6:30-6:45
6:45-7:00	3	1	2	6	1	37	2	40	5	1	4	10	4	115	2	121	16	161	177		6:45-7:00
3 Hour Totals	**38**	**8**	**27**	**73**	**17**	**540**	**56**	**613**	**164**	**26**	**104**	**294**	**84**	**2,013**	**21**	**2,118**	**367**	**2,731**	**3,098**		
1 Hour Totals																					
4:00-5:00	14	2	14	30	8	164	17	189	78	12	44	134	33	719	11	754	164	943	1 107	0.96	4:00-5:00
4:15-5:15	18	3	11	32	8	161	15	184	67	14	46	127	38	729	7	774	159	958	1 117	0.97	4:15-5:15
4:30-5:30	17	3	10	30	10	173	15	198	59	18	46	123	40	726	5	771	153	969	1 122	0.98	4:30-5:30
4:45-5:45	10	3	9	22	6	171	15	192	57	8	46	111	46	754	5	805	133	997	1 130	0.96	4:45-5:45
5:00-6:00	13	3	7	23	6	185	15	206	48	11	35	94	37	751	6	794	117	1,000	1 117	0.95	5:00-6:00
5:15-6:15	8	1	7	16	6	212	18	236	50	9	35	94	32	732	4	768	110	1,004	1 114	0.94	5:15-6:15
5:30-6:30	11	2	6	19	4	221	22	247	51	5	32	88	27	695	4	726	107	973	1 080	0.92	5:30-6:30
5:45-6:45	14	3	6	23	3	210	25	238	41	6	25	72	16	611	3	630	95	868	963	0.87	5:45-6:45
6:00-7:00	11	3	6	20	3	191	24	218	38	3	25	66	14	552	4	570	86	788	874	0.79	6:00-7:00
PM Peak 4:45-5:45	**10**	**3**	**9**	**22**	**6**	**171**	**15**	**192**	**57**	**8**	**46**	**111**	**46**	**754**	**5**	**805**	**133**	**997**	**1,130**	**0.96**	**PM Peak 4:45-5:45**

Project Name: Corcoran-Randall School

Project Number:

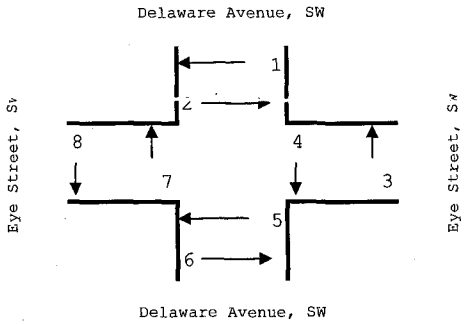
Location: Washington,DC

Intersection: Delaware Avenue, SW & Eye Street

Weather: Fog in Am, Clear in PM

Date: 12/14/2006

Surveyor: Al & Gerrye



Hourly Pedestrian Count

			1	2	3	4	5	6	7	8					
		From:	SE	NE	SW	SE	SW	NW	NW	NE	Total	1 & 2	3 & 4	5 & 6	7 & 8
Time Period		To:	NE	SE	SE	SW	NW	SW	NE	NW					
AM PEAK															
7:00	8:00		0	2	1	0	0	0	2	0	5	2	1	0	2
7:15	8:15		1	6	2	0	0	1	2	0	12	7	2	1	2
7:30	8:30		3	8	1	0	0	3	3	0	18	11	1	3	3
7:45	8:45		4	8	1	0	6	5	4	0	28	12	1	11	4
8:00	9:00		4	7	1	0	6	5	3	0	26	11	1	11	3
8:15	9:15		5	4	0	2	6	8	4	1	30	9	2	14	5
8:30	9:30		5	3	3	3	7	7	3	1	32	8	6	14	4
8:45	9:45		4	4	4	3	1	6	2	2	26	8	7	7	4
9:00	10:00		5	4	4	5	1	7	4	5	35	9	9	8	9
PM PEAK															
16:00	17:00		5	5	1	3	9	10	0	3	36	10	4	19	3
16:15	17:15		2	4	1	5	13	8	5	4	42	6	6	21	9
16:30	17:30		2	3	0	6	11	4	7	1	34	5	6	15	8
16:45	17:45		1	4	0	5	9	6	7	3	35	5	5	15	10
17:00	18:00		1	6	0	3	9	6	7	3	35	7	3	15	10
17:15	18:15		2	6	0	1	6	6	3	2	26	8	1	12	5
17:30	18:30		2	7	0	0	6	7	1	2	25	9	0	13	3
17:45	18:45		6	7	3	0	9	5	1	0	31	13	3	14	1
18:00	19:00		6	2	3	0	10	8	1	0	30	8	3	18	1

Wells & Associates, LLC

McLean, Virginia

Existing Traffic Count

PROJECT:	Randall School	DATE:	9/26/2006	SOUTHBOUND ROAD:	South Capitol Street SE	
W & A JOB NO.:	3472	DAY:	Tuesday	NORTHBOUND ROAD:	South Capitol Street SE	
INTERSECTION:	M Street SE & South Capitol Street SE	WEATHER:	Clear	WESTBOUND ROAD:	M Street SE	
LOCATION:	Washington, DC	COUNTED BY:	Jesi, Jesenia & Loren	EASTBOUND ROAD:	M Street SE	
		INPUTED BY:	admir			

Time Period	Turning Movements																		Total	PHF	Time Period
	Southbound South Capitol Street SE				Westbound M Street SE				Northbound South Capitol Street SE				Eastbound M Street SE				North & South	East & West			
	1 Right	2 Thru	3 Left	Total	4 Right	5 Thru	6 Left	Total	7 Right	8 Thru	9 Left	Total	10 Right	11 Thru	12 Left	Total					
AM																					
6:00-6:15	6	9	80	95	8	26	16	50	40	17	255	312	26	49	9	84	407	134	541		6:00-6:15
6:15-6:30	1	14	75	90	4	55	23	82	38	7	286	331	29	51	7	87	421	169	590		6:15-6:30
6:30-6:45	7	19	74	100	9	62	16	87	27	34	278	339	39	57	12	108	439	195	634		6:30-6:45
6:45-7:00	16	12	70	98	8	90	14	112	20	25	262	307	43	72	9	124	405	236	641		6:45-7:00
7:00-7:15	12	14	77	103	2	95	16	113	18	16	304	338	52	103	6	161	441	274	715		7:00-7:15
7:15-7:30	8	21	65	94	4	107	22	133	19	23	263	305	78	84	10	172	399	305	704		7:15-7:30
7:30-7:45	9	17	66	92	9	116	9	134	25	18	307	350	66	93	13	172	442	306	748		7:30-7:45
7:45-8:00	12	18	63	93	3	115	12	130	20	36	303	359	67	91	9	167	452	297	749		7:45-8:00
8:00-8:15	9	14	52	75	13	116	12	141	15	23	313	351	56	93	17	166	426	307	733		8:00-8:15
8:15-8:30	7	12	50	69	11	97	8	116	21	21	329	371	70	90	20	180	440	296	736		8:15-8:30
8:30-8:45	11	13	45	69	9	119	10	138	20	16	329	365	72	61	16	149	434	287	721		8:30-8:45
8:45-9:00	12	22	47	81	13	83	10	106	18	19	303	340	33	74	15	122	421	228	649		8:45-9:00
3 Hour Totals	**110**	**185**	**764**	**1,059**	**93**	**1,081**	**168**	**1,342**	**281**	**255**	**3,532**	**4,068**	**631**	**918**	**143**	**1,692**	**5,127**	**3,034**	**8,161**		
1 Hour Totals																					
6:00-7:00	30	54	299	383	29	233	69	331	125	83	1,081	1,289	137	229	37	403	1,672	734	2,406	0.94	6:00-7:00
6:15-7:15	36	59	296	391	23	302	69	394	103	82	1,130	1,315	163	283	34	480	1,706	874	2,580	0.90	6:15-7:15
6:30-7:30	43	66	286	395	23	354	68	445	84	98	1,107	1,289	212	316	37	565	1,684	1,010	2,694	0.94	6:30-7:30
6:45-7:45	45	64	278	387	23	408	61	492	82	82	1,136	1,300	239	352	38	629	1,687	1,121	2,808	0.94	6:45-7:45
7:00-8:00	41	70	271	382	18	433	59	510	82	93	1,177	1,352	263	371	38	672	1,734	1,182	2,916	0.97	7:00-8:00
7:15-8:15	38	70	246	354	29	454	55	538	79	100	1,186	1,365	267	361	49	677	1,719	1,215	2,934	0.98	7:15-8:15
7:30-8:30	37	61	231	329	36	444	41	521	81	98	1,252	1,431	259	367	59	685	1,760	1,206	2,966	0.99	7:30-8:30
7:45-8:45	39	57	210	306	36	447	42	525	76	96	1,274	1,446	265	335	62	662	1,752	1,187	2,939	0.98	7:45-8:45
8:00-9:00	39	61	194	294	46	415	40	501	74	79	1,274	1,427	231	318	68	617	1,721	1,118	2,839	0.96	8:00-9:00
AM Peak 7:30-8:30	**37**	**61**	**231**	**329**	**36**	**444**	**41**	**521**	**81**	**98**	**1,252**	**1,431**	**259**	**367**	**59**	**685**	**1,760**	**1,206**	**2,966**	**0.99**	**AM Peak 7:30-8:30**
PM																					
4:00-4:15	5	20	23	48	43	112	27	182	18	10	75	103	196	125	15	336	151	518	669		4:00-4:15
4:15-4:30	16	15	31	62	59	115	22	196	16	2	70	88	167	140	6	313	150	509	659		4:15-4:30
4:30-4:45	6	28	27	61	30	107	23	160	13	12	60	85	136	172	13	321	146	481	627		4:30-4:45
4:45-5:00	1	21	53	75	50	108	15	173	24	4	70	98	68	169	10	247	173	420	593		4:45-5:00
5:00-5:15	5	49	56	110	29	114	15	158	35	20	83	138	188	203	11	402	248	560	808		5:00-5:15
5:15-5:30	5	52	48	105	30	95	25	150	26	15	96	137	196	191	9	396	242	546	788		5:15-5:30
5:30-5:45	13	37	40	90	31	93	7	131	29	8	81	118	199	184	6	389	208	520	728		5:30-5:45
5:45-6:00	7	33	56	96	28	92	22	142	16	8	81	105	186	194	15	395	201	537	738		5:45-6:00
6:00-6:15	6	42	43	91	25	71	20	116	20	17	62	99	243	218	11	472	190	588	778		6:00-6:15
6:15-6:30	14	34	51	99	24	75	16	115	21	13	60	94	236	124	14	374	193	489	682		6:15-6:30
6:30-6:45	7	22	23	52	28	64	25	117	25	9	55	89	220	110	12	342	141	459	600		6:30-6:45
6:45-7:00	13	16	17	46	23	50	24	97	15	7	69	91	173	76	12	261	137	358	495		6:45-7:00
3 Hour Totals	**98**	**369**	**468**	**935**	**400**	**1,096**	**241**	**1,737**	**258**	**125**	**862**	**1,245**	**2,208**	**1,906**	**134**	**4,248**	**2,180**	**5,985**	**8,165**		
1 Hour Totals																					
4:00-5:00	28	84	134	246	182	442	87	711	71	28	275	374	567	606	44	1,217	620	1,928	2,548	0.95	4:00-5:00
4:15-5:15	28	113	167	308	168	444	75	687	88	38	283	409	559	684	40	1,283	717	1,970	2,687	0.83	4:15-5:15
4:30-5:30	17	150	184	351	139	424	78	641	98	51	309	458	588	735	43	1,366	809	2,007	2,816	0.87	4:30-5:30
4:45-5:45	24	159	197	380	140	410	62	612	114	47	330	491	651	747	36	1,434	871	2,046	2,917	0.90	4:45-5:45
5:00-6:00	30	171	200	401	118	394	69	581	106	51	341	498	769	772	41	1,582	899	2,163	3,062	0.95	5:00-6:00
5:15-6:15	31	164	187	382	114	351	74	539	91	48	320	459	824	787	41	1,652	841	2,191	3,032	0.96	5:15-6:15
5:30-6:30	40	146	190	376	108	331	65	504	86	46	284	416	864	720	46	1,630	792	2,134	2,926	0.94	5:30-6:30
5:45-6:45	34	131	173	338	105	302	83	490	82	47	258	387	885	646	52	1,583	725	2,073	2,798	0.90	5:45-6:45
6:00-7:00	40	114	134	288	100	260	85	445	81	46	246	373	872	528	49	1,449	661	1,894	2,555	0.82	6:00-7:00
PM Peak 5:00-6:00	**30**	**171**	**200**	**401**	**118**	**394**	**69**	**581**	**106**	**51**	**341**	**498**	**769**	**772**	**41**	**1,582**	**899**	**2,163**	**3,062**	**0.95**	**PM Peak 5:00-6:00**

Project Name: Randall School

Project Number: 3472

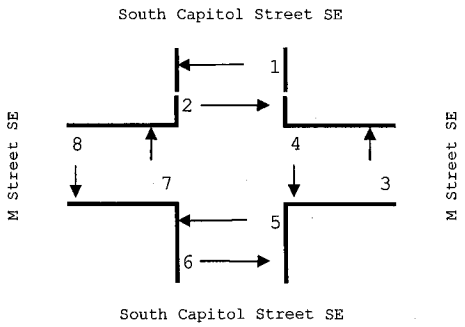
Location: Washington, DC

Intersection: M Street SE & South Capitol Str

Weather: Clear

Date: 9/26/2006

Surveyor: Jesi



Hourly Pedestrian Count

			1	2	3	4	5	6	7	8					
		From:	SE	NE	SW	SE	SW	NW	NW	NE	Total	1 & 2	3 & 4	5 & 6	7 & 8
Time Period		To:	NE	SE	SE	SW	NW	SW	NE	NW					
AM PEAK															
6:00	7:00		9	10	0	1	5	18	0	0	43	19	1	23	0
6:15	7:15		8	8	0	1	6	22	0	0	45	16	1	28	0
6:30	7:30		2	4	0	2	6	19	0	0	33	6	2	25	0
6:45	7:45		1	5	0	2	7	17	0	0	32	6	2	24	0
7:00	8:00		3	7	0	2	7	17	0	0	36	10	2	24	0
7:15	8:15		5	8	1	3	10	20	0	0	47	13	4	30	0
7:30	8:30		11	11	2	3	11	30	0	0	68	22	5	41	0
7:45	8:45		11	10	6	3	14	37	1	0	82	21	9	51	1
8:00	9:00		12	8	7	4	17	40	1	0	89	20	11	57	1
PM PEAK															
16:00	17:00		12	6	1	0	13	16	6	0	54	18	1	29	6
16:15	17:15		13	8	0	0	9	9	5	0	44	21	0	18	5
16:30	17:30		13	8	1	0	7	5	2	0	36	21	1	12	2
16:45	17:45		15	8	1	1	1	3	0	0	29	23	2	4	0
17:00	18:00		17	6	1	1	1	9	2	0	37	23	2	10	2
17:15	18:15		20	7	1	1	1	9	2	0	41	27	2	10	2
17:30	18:30		21	8	1	1	2	13	3	0	49	29	2	15	3
17:45	18:45		22	10	1	0	2	16	3	1	55	32	1	18	4
18:00	19:00		21	10	2	0	3	10	2	1	49	31	2	13	3

Wells & Associates, LLC

McLean, Virginia

Existing Traffic Count

PROJECT:	Corcoran-Randall School	DATE:	12/14/2006	SOUTHBOUND ROAD:	Half Street	
W & A JOB NO.:		DAY:	Thursday	NORTHBOUND ROAD:	Half Street	
INTERSECTION:	M Street, SW & Half Street, SW	WEATHER:	Fog in Am, Clear in PM	WESTBOUND ROAD:	M Street	
LOCATION:	Washington,DC	COUNTED BY:	Homer & Janet	EASTBOUND ROAD:	M Street	
		INPUTED BY:	ANM			

Time Period	Turning Movements: Southbound Half Street				Westbound M Street				Northbound Half Street				Eastbound M Street				North & South	East & West	Total	PHF	Time Period
	1 Right	2 Thru	3 Left	Total	4 Right	5 Thru	6 Left	Total	7 Right	8 Thru	9 Left	Total	10 Right	11 Thru	12 Left	Total					
AM																					
7:00-7:15	3	3	9	15	21	358	15	394	0	0	0	0	5	151	6	162	15	556	571		7:00-7:15
7:15-7:30	10	1	4	15	13	394	9	416	0	0	0	0	4	149	16	169	15	585	600		7:15-7:30
7:30-7:45	9	4	9	22	16	396	13	425	0	0	0	0	3	171	9	183	22	608	630		7:30-7:45
7:45-8:00	10	4	4	18	15	410	10	435	0	0	0	0	0	134	15	149	18	584	602		7:45-8:00
8:00-8:15	10	8	9	27	19	441	9	469	0	0	0	0	5	177	11	193	27	662	689		8:00-8:15
8:15-8:30	13	4	6	23	19	384	8	411	0	0	0	0	8	157	19	184	23	595	618		8:15-8:30
8:30-8:45	11	4	7	22	29	388	8	425	0	0	0	0	5	145	17	167	22	592	614		8:30-8:45
8:45-9:00	10	7	9	26	18	325	8	351	0	0	0	0	4	129	14	147	26	498	524		8:45-9:00
9:00-9:15	8	7	10	25	28	243	7	278	0	0	0	0	2	106	22	130	25	408	433		9:00-9:15
9:15-9:30	10	3	8	21	16	182	17	215	0	0	0	0	2	119	20	141	21	356	377		9:15-9:30
9:30-9:45	11	2	8	21	25	171	7	203	0	0	0	0	4	103	20	127	21	330	351		9:30-9:45
9:45-10:00	12	3	14	29	26	151	8	185	0	0	0	0	3	132	16	151	29	336	365		9:45-10:00
3 Hour Totals	**117**	**50**	**97**	**264**	**245**	**3,843**	**119**	**4,207**	**0**	**0**	**0**	**0**	**45**	**1,673**	**185**	**1,903**	**264**	**6,110**	**6,374**		
1 Hour Totals																					
7:00-8:00	32	12	26	70	65	1,558	47	1,670	0	0	0	0	12	605	46	663	70	2,333	2,403	0.95	7:00-8:00
7:15-8:15	39	17	26	82	63	1,641	41	1,745	0	0	0	0	12	631	51	694	82	2,439	2,521	0.91	7:15-8:15
7:30-8:30	42	20	28	90	69	1,631	40	1,740	0	0	0	0	16	639	54	709	90	2,449	2,539	0.92	7:30-8:30
7:45-8:45	44	20	26	90	82	1,623	35	1,740	0	0	0	0	18	613	62	693	90	2,433	2,523	0.92	7:45-8:45
8:00-9:00	44	23	31	98	85	1,538	33	1,656	0	0	0	0	22	608	61	691	98	2,347	2,445	0.89	8:00-9:00
8:15-9:15	42	22	32	96	94	1,340	31	1,465	0	0	0	0	19	537	72	628	96	2,093	2,189	0.89	8:15-9:15
8:30-9:30	39	21	34	94	91	1,138	40	1,269	0	0	0	0	13	499	73	585	94	1,854	1,948	0.79	8:30-9:30
8:45-9:45	39	19	35	93	87	921	39	1,047	0	0	0	0	12	457	76	545	93	1,592	1,685	0.80	8:45-9:45
9:00-10:00	41	15	40	96	95	747	39	881	0	0	0	0	11	460	78	549	96	1,430	1,526	0.88	9:00-10:00
AM Peak 7:30-8:30	**42**	**20**	**28**	**90**	**69**	**1,631**	**40**	**1,740**	**0**	**0**	**0**	**0**	**16**	**639**	**54**	**709**	**90**	**2,449**	**2,539**	**0.92**	**AM Peak 7:30-8:30**
PM																					
4:00-4:15	11	8	19	38	25	171	15	211	0	0	0	0	0	379	23	402	38	613	651		4:00-4:15
4:15-4:30	10	5	21	36	10	192	5	207	0	0	0	0	7	425	37	469	36	676	712		4:15-4:30
4:30-4:45	12	4	20	36	21	196	6	223	0	0	0	0	2	382	30	414	36	637	673		4:30-4:45
4:45-5:00	11	8	20	39	23	193	12	228	0	0	0	0	1	356	20	377	39	605	644		4:45-5:00
5:00-5:15	9	2	24	35	11	189	13	213	0	0	0	0	2	367	11	380	35	593	628		5:00-5:15
5:15-5:30	12	9	22	43	17	193	10	220	0	0	0	0	0	437	20	457	43	677	720		5:15-5:30
5:30-5:45	12	2	25	39	26	180	0	206	0	0	0	0	1	370	18	389	39	595	634		5:30-5:45
5:45-6:00	7	9	32	48	24	196	8	228	0	0	0	0	7	411	35	453	48	681	729		5:45-6:00
6:00-6:15	7	7	29	43	21	215	10	246	0	0	0	0	3	420	21	444	43	690	733		6:00-6:15
6:15-6:30	5	3	33	41	19	210	11	240	0	0	0	0	43	383	21	447	41	687	728		6:15-6:30
6:30-6:45	6	9	18	33	19	219	10	248	0	0	0	0	2	308	21	331	33	579	612		6:30-6:45
6:45-7:00	8	9	11	28	15	184	8	207	0	0	0	0	0	299	20	319	28	526	554		6:45-7:00
3 Hour Totals	**110**	**75**	**274**	**459**	**231**	**2,338**	**108**	**2,677**	**0**	**0**	**0**	**0**	**68**	**4,537**	**277**	**4,882**	**459**	**7,559**	**8,018**		
1 Hour Totals																					
4:00-5:00	44	25	80	149	79	752	38	869	0	0	0	0	10	1,542	110	1,662	149	2,531	2,680	0.94	4:00-5:00
4:15-5:15	42	19	85	146	65	770	36	871	0	0	0	0	12	1,530	98	1,640	146	2,511	2,657	0.93	4:15-5:15
4:30-5:30	44	23	86	153	72	771	41	884	0	0	0	0	5	1,542	81	1,628	153	2,512	2,665	0.93	4:30-5:30
4:45-5:45	44	21	91	156	77	755	35	867	0	0	0	0	4	1,530	69	1,603	156	2,470	2,626	0.91	4:45-5:45
5:00-6:00	40	22	103	165	78	758	31	867	0	0	0	0	10	1,585	84	1,679	165	2,546	2,711	0.93	5:00-6:00
5:15-6:15	38	27	108	173	88	784	28	900	0	0	0	0	11	1,638	94	1,743	173	2,643	2,816	0.96	5:15-6:15
5:30-6:30	31	21	119	171	90	801	29	920	0	0	0	0	54	1,584	95	1,733	171	2,653	2,824	0.96	5:30-6:30
5:45-6:45	25	28	112	165	83	840	39	962	0	0	0	0	55	1,522	98	1,675	165	2,637	2,802	0.96	5:45-6:45
6:00-7:00	26	28	91	145	74	828	39	941	0	0	0	0	48	1,410	83	1,541	145	2,482	2,627	0.90	6:00-7:00
PM Peak 5:30-6:30	**31**	**21**	**119**	**171**	**90**	**801**	**29**	**920**	**0**	**0**	**0**	**0**	**54**	**1,584**	**95**	**1,733**	**171**	**2,653**	**2,824**	**0.96**	**PM Peak 5:30-6:30**

Project Name: Corcoran-Randall School

Project Number:

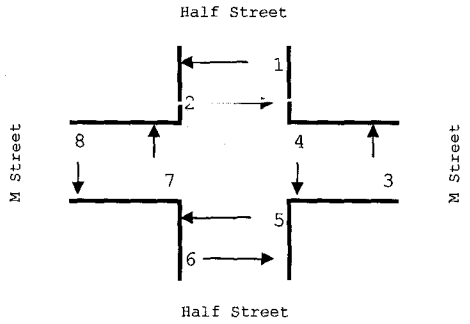
Location: Washington,DC

Intersection: M Street, SW & Half Street, SW

Weather: Fog in Am, Clear in PM

Date: 12/14/2006

Surveyor: Homer & Janet



Hourly Pedestrian Count

			1	2	3	4	5	6	7	8					
		From:	SE	NE	SW	SE	SW	NW	NW	NE	Total	1 & 2	3 & 4	5 & 6	7 & 8
Time Period		To:	NE	SE	SE	SW	NW	SW	NE	NW					
AM PEAK															
7:00	8:00		2	6	3	2	1	8	8	3	33	8	5	9	11
7:15	8:15		3	7	7	1	1	11	10	3	43	10	8	12	13
7:30	8:30		4	8	6	3	3	8	10	1	43	12	9	11	11
7:45	8:45		8	8	7	2	6	9	12	3	55	16	9	15	15
8:00	9:00		11	8	7	3	8	7	12	4	60	19	10	15	16
8:15	9:15		10	11	10	3	12	10	10	4	70	21	13	22	14
8:30	9:30		15	12	9	1	12	11	10	4	74	27	10	23	14
8:45	9:45		13	12	8	1	8	9	6	2	59	25	9	17	8
9:00	10:00		12	13	7	0	6	9	4	0	51	25	7	15	4
PM PEAK															
16:00	17:00		39	33	13	15	9	12	6	17	144	72	28	21	23
16:15	17:15		40	35	14	13	10	21	11	17	161	75	27	31	28
16:30	17:30		37	41	17	13	8	22	15	15	168	78	30	30	30
16:45	17:45		45	39	14	11	9	19	17	15	169	84	25	28	32
17:00	18:00		42	36	22	14	14	25	14	15	182	78	36	39	29
17:15	18:15		27	29	22	12	15	15	8	10	138	56	34	30	18
17:30	18:30		36	32	22	14	20	17	6	14	161	68	36	37	20
17:45	18:45		25	30	25	16	25	21	7	16	165	55	41	46	23
18:00	19:00		32	29	19	22	22	19	9	17	169	61	41	41	26

Wells & Associates, LLC

McLean, Virginia

Existing Traffic Count

PROJECT: Corcoran-Randall School
W & A JOB NO.:
INTERSECTION: Delaware Avenue, SW & M Street, SW
LOCATION: Washington,DC

DATE: 12/14/2006
DAY: Thursday
WEATHER: Fog in Am, Clear in PM
COUNTED BY: Jose & Roberto
INPUTED BY: ANM

SOUTHBOUND ROAD: Delaware Avenue, SW
NORTHBOUND ROAD: Delaware Avenue, SW
WESTBOUND ROAD: M Street, SW
EASTBOUND ROAD: M Street, SW

Time Period	Turning Movements: Southbound Delaware Avenue, SW				Westbound M Street, SW				Northbound Delaware Avenue, SW				Eastbound M Street, SW				North & South	East & West	To al	PHF	Time Period
	1 Right	2 Thru	3 Left	Total	4 Right	5 Thru	6 Left	Total	7 Right	8 Thru	9 Left	Total	10 Right	11 Thru	12 Left	Total					
AM																					
7:00-7:15	0	0	0	0	8	290	1	299	1	2	3	6	19	138	0	157	6	456	462		7:00-7:15
7:15-7:30	3	0	0	3	9	371	5	385	2	1	3	6	21	136	2	159	9	544	553		7:15-7:30
7:30-7:45	1	0	0	1	16	404	6	426	5	2	10	17	19	144	2	165	18	591	609		7:30-7:45
7:45-8:00	5	0	0	5	16	377	4	397	8	3	10	21	16	105	0	121	26	518	544		7:45-8:00
8:00-8:15	8	0	0	8	26	378	6	410	7	2	13	22	5	140	0	145	30	555	585		8:00-8:15
8:15-8:30	3	0	0	3	18	320	8	346	4	2	8	14	3	113	3	119	17	465	482		8:15-8:30
8:30-8:45	2	0	0	2	17	359	15	391	8	3	11	22	3	92	3	98	24	489	513		8:30-8:45
8:45-9:00	2	0	0	2	25	320	6	351	5	2	3	10	9	92	1	102	12	453	465		8:45-9:00
9:00-9:15	2	0	0	2	14	213	8	235	9	1	8	18	2	88	2	92	20	327	347		9:00-9:15
9:15-9:30	3	0	0	3	15	157	8	180	4	2	7	13	8	95	0	103	16	283	299		9:15-9:30
9:30-9:45	1	0	0	1	10	159	3	172	3	3	9	15	5	91	1	97	16	269	285		9:30-9:45
9:45-10:00	4	0	0	4	9	126	6	141	5	3	1	9	5	118	1	124	13	265	278		9:45-10:00
3 Hour Totals	**34**	**0**	**0**	**34**	**183**	**3,474**	**76**	**3,733**	**61**	**26**	**86**	**173**	**115**	**1,352**	**15**	**1,482**	**207**	**5,215**	**5,422**		
1 Hour Totals																					
7:00-8:00	9	0	0	9	49	1,442	16	1,507	16	8	26	50	75	523	4	602	59	2,109	2,168	0.89	7:00-8:00
7:15-8:15	17	0	0	17	67	1,530	21	1,618	22	8	36	66	61	525	4	590	83	2,208	2,291	0.94	7:15-8:15
7:30-8:30	17	0	0	17	76	1,479	24	1,579	24	9	41	74	43	502	5	550	91	2,129	2,220	0.91	7:30-8:30
7:45-8:45	18	0	0	18	77	1,434	33	1,544	27	10	42	79	27	450	6	483	97	2,027	2,124	0.91	7:45-8:45
8:00-9:00	15	0	0	15	86	1,377	35	1,498	24	9	35	68	20	437	7	464	83	1,962	2,045	0.87	8:00-9:00
8:15-9:15	9	0	0	9	74	1,212	37	1,323	26	8	30	64	17	385	9	411	73	1,734	1,807	0.88	8:15-9:15
8:30-9:30	9	0	0	9	71	1,049	37	1,157	26	8	29	63	22	367	6	395	72	1,552	1,624	0.79	8:30-9:30
8:45-9:45	8	0	0	8	64	849	25	938	21	8	27	56	24	366	4	394	64	1,332	1,396	0.75	8:45-9:45
9:00-10:00	10	0	0	10	48	655	25	728	21	9	25	55	20	392	4	416	65	1,144	1,209	0.87	9:00-10:00
AM Peak 7:15-8:15	**17**	**0**	**0**	**17**	**67**	**1,530**	**21**	**1,618**	**22**	**8**	**36**	**66**	**61**	**525**	**4**	**590**	**83**	**2,208**	**2,291**	**0.94**	**AM Peak 7:15-8:15**
PM																					
4:00-4:15	7	1	1	9	18	167	6	191	5	4	9	18	19	260	6	285	27	476	503		4:00-4:15
4:15-4:30	7	4	4	15	14	207	4	225	3	3	3	9	16	269	3	288	24	513	537		4:15-4:30
4:30-4:45	9	0	0	9	10	199	3	212	3	7	10	20	11	327	2	340	29	552	581		4:30-4:45
4:45-5:00	15	2	2	19	20	173	4	197	2	2	13	17	9	245	0	254	36	451	487		4:45-5:00
5:00-5:15	3	1	1	5	10	206	4	220	2	4	5	11	14	294	2	310	16	530	546		5:00-5:15
5:15-5:30	8	1	1	10	15	203	2	220	9	3	3	15	3	386	1	390	25	610	635		5:15-5:30
5:30-5:45	14	0	0	14	16	196	10	222	5	1	7	13	14	369	2	385	27	607	634		5:30-5:45
5:45-6:00	5	1	1	7	15	225	7	247	4	2	4	10	7	453	1	461	17	708	725		5:45-6:00
6:00-6:15	7	0	0	7	16	244	8	268	2	6	9	17	17	395	0	412	24	680	704		6:00-6:15
6:15-6:30	3	0	0	3	16	203	10	229	1	0	2	3	18	295	1	314	6	543	549		6:15-6:30
6:30-6:45	5	0	0	5	16	221	6	243	2	1	6	9	9	238	1	248	14	491	505		6:30-6:45
6:45-7:00	5	0	0	5	11	164	7	182	3	1	3	7	8	245	2	255	12	437	449		6:45-7:00
3 Hour Totals	**88**	**10**	**10**	**108**	**177**	**2,408**	**71**	**2,656**	**41**	**34**	**74**	**149**	**145**	**3,776**	**21**	**3,942**	**257**	**6,598**	**6,855**		
1 Hour Totals																					
4:00-5:00	38	0	0	52	62	746	17	825	13	16	35	64	55	1,101	11	1,167	116	1,992	2,108	0.91	4:00-5:00
4:15-5:15	34	0	0	48	54	785	15	854	10	16	31	57	50	1,135	7	1,192	105	2,046	2,151	0.93	4:15-5:15
4:30-5:30	35	0	0	43	55	781	13	849	16	16	31	63	37	1,252	5	1,294	106	2,143	2,249	0.89	4:30-5:30
4:45-5:45	40	0	0	48	61	778	20	859	18	10	28	56	40	1,294	5	1,339	104	2,198	2,302	0.91	4:45-5:45
5:00-6:00	30	0	0	36	56	830	23	909	20	10	19	49	38	1,502	6	1,546	85	2,455	2,540	0.88	5:00-6:00
5:15-6:15	34	0	0	38	62	868	27	957	20	12	23	55	41	1,603	4	1,648	93	2,605	2,698	0.93	5:15-6:15
5:30-6:30	29	0	0	31	63	868	35	966	12	9	22	43	56	1,512	4	1,572	74	2,538	2,612	0.90	5:30-6:30
5:45-6:45	20	0	0	22	63	893	31	987	9	9	21	39	51	1,381	3	1,435	61	2,422	2,483	0.86	5:45-6:45
6:00-7:00	20	0	0	20	59	832	31	922	8	8	20	36	52	1,173	4	1,229	56	2,151	2,207	0.78	6:00-7:00
PM Peak 5:15-6:15	**34**	**0**	**0**	**38**	**62**	**868**	**27**	**957**	**20**	**12**	**23**	**55**	**41**	**1,603**	**4**	**1,648**	**93**	**2,605**	**2,698**	**0.93**	**PM Peak 5:15-6:15**

Project Name: Corcoran-Randall School

Project Number:

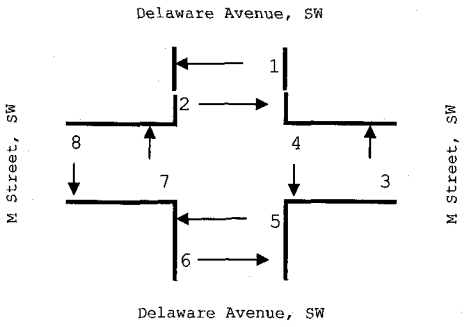
Location: Washington,DC

Intersection: Delaware Avenue, SW & M Street,

Weather: Fog in Am, Clear in PM

Date: 12/14/2006

Surveyor: Jose & Roberto



Hourly Pedestrian Count

			1	2	3	4	5	6	7	8					
		From:	SE	NE	SW	SE	SW	NW	NW	NE	Total	1 & 2	3 & 4	5 & 6	7 & 8
Time Period		To:	NE	SE	SE	SW	NW	SW	NE	NW					
AM PEAK															
7:00	8:00		0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	8:15		2	0	1	0	1	0	2	0	6	2	1	1	2
7:30	8:30		2	1	1	3	4	1	5	1	18	3	4	5	6
7:45	8:45		9	1	3	5	6	4	6	4	38	10	8	10	10
8:00	9:00		12	2	6	8	7	6	7	4	52	14	14	13	11
8:15	9:15		13	6	5	11	7	6	5	5	58	19	16	13	10
8:30	9:30		15	5	5	9	7	6	3	4	54	20	14	13	7
8:45	9:45		10	8	5	7	10	3	4	3	50	18	12	13	7
9:00	10:00		12	9	4	4	9	4	3	6	51	21	8	13	9
PM PEAK															
17:00	18:00		20	12	2	5	23	13	7	6	88	32	7	36	13
17:15	18:15		13	8	1	7	10	12	7	8	66	21	8	22	15
17:30	18:30		19	10	4	14	9	11	6	10	83	29	18	20	16
17:45	18:45		19	17	7	19	7	8	4	10	91	36	26	15	14
18:00	19:00		20	16	7	21	7	10	5	10	96	36	28	17	15
18:15	19:15		20	21	7	20	9	10	5	10	102	41	27	19	15
18:30	19:30		19	22	5	26	15	12	4	10	113	41	31	27	14
18:45	19:45		17	19	3	24	17	13	3	8	104	36	27	30	11
19:00	20:00		17	20	2	25	20	12	5	8	109	37	27	32	13

Appendix B

Existing Intersection Capacity Analyses

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			0.99			0.99	
Flpb, ped/bikes		1.00			1.00			0.99			1.00	
Frt		0.99			1.00			0.96			0.97	
Flt Protected		1.00			1.00			0.97			0.97	
Satd. Flow (prot)		1550			1553			1441			1467	
Flt Permitted		0.99			0.97			0.82			0.88	
Satd. Flow (perm)		1536			1512			1226			1329	
Volume (vph)	6	198	10	27	347	9	38	4	15	8	3	3
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	215	11	29	377	10	41	4	16	9	3	3
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	231	0	0	416	0	0	61	0	0	15	0
Confl. Peds. (#/hr)	12		11	11		12	4		1	1		4
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		72.0			72.0			18.0			18.0	
Effective Green, g (s)		73.0			73.0			19.0			19.0	
Actuated g/C Ratio		0.73			0.73			0.19			0.19	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Lane Grp Cap (vph)		1121			1104			233			253	
v/s Ratio Prot												
v/s Ratio Perm		0.15			c0.28			c0.05			0.01	
v/c Ratio		0.21			0.38			0.26			0.06	
Uniform Delay, d1		4.3			5.0			34.5			33.2	
Progression Factor		1.00			1.00			0.88			1.00	
Incremental Delay, d2		0.4			1.0			2.3			0.4	
Delay (s)		4.7			6.0			32.6			33.6	
Level of Service		A			A			C			C	
Approach Delay (s)		4.7			6.0			32.6			33.6	
Approach LOS		A			A			C			C	

Intersection Summary				
HCM Average Control Delay	8.4	HCM Level of Service	A	
HCM Volume to Capacity ratio	0.35			
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	81.7%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	178	53	95	336	63	62
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	193	58	103	365	68	67
Pedestrians	2			5	8	
Lane Width (ft)	10.0			10.0	10.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	0			0	1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)	670			452		
pX, platoon unblocked					0.79	
vC, conflicting volume			259		804	235
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			259		752	235
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			92		75	92
cM capacity (veh/h)			1298		273	797

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	251	468	136
Volume Left	0	103	68
Volume Right	58	0	67
cSH	1700	1298	405
Volume to Capacity	0.15	0.08	0.34
Queue Length 95th (ft)	0	6	36
Control Delay (s)	0.0	2.4	18.3
Lane LOS		A	C
Approach Delay (s)	0.0	2.4	18.3
Approach LOS			C

Intersection Summary			
Average Delay	4.2		
Intersection Capacity Utilization	58.8%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0		4.0			4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00		0.91			0.91	1.00
Frpb, ped/bikes		1.00	0.98		1.00	0.98		1.00			1.00	0.98
Flpb, ped/bikes		1.00	1.00		1.00	1.00		1.00			1.00	1.00
Frt		1.00	0.85		1.00	0.85		1.00			1.00	0.85
Flt Protected		0.98	1.00		1.00	1.00		1.00			1.00	1.00
Satd. Flow (prot)		1524	1298		1565	1304		4256			4272	1301
Flt Permitted		0.26	1.00		1.00	1.00		1.00			1.00	1.00
Satd. Flow (perm)		404	1298		1565	1304		4256			4272	1301
Volume (vph)	84	81	103	0	339	154	0	2176	48	0	1595	114
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	91	88	112	0	368	167	0	2365	52	0	1734	124
RTOR Reduction (vph)	0	0	28	0	0	8	0	2	0	0	0	38
Lane Group Flow (vph)	0	179	84	0	368	159	0	2415	0	0	1734	86
Confl. Peds. (#/hr)	5		10	10		5	2		6	6		2
Turn Type	Perm		Perm			Perm						Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4			8						6
Actuated Green, G (s)		29.0	29.0		24.0	24.0		81.0			81.0	81.0
Effective Green, g (s)		29.0	29.0		29.0	29.0		83.0			83.0	83.0
Actuated g/C Ratio		0.24	0.24		0.24	0.24		0.69			0.69	0.69
Clearance Time (s)		4.0	4.0		9.0	9.0		6.0			6.0	6.0
Lane Grp Cap (vph)		98	314		378	315		2944			2955	900
v/s Ratio Prot					0.24			c0.57			0.41	
v/s Ratio Perm		c0.44	0.06			0.12						0.07
v/c Ratio		1.83	0.27		0.97	0.51		0.82			0.59	0.10
Uniform Delay, d1		45.5	36.9		45.1	39.3		13.2			9.6	6.1
Progression Factor		1.00	1.00		1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2		408.9	2.1		40.1	5.7		2.7			0.9	0.2
Delay (s)		454.4	39.0		85.2	45.0		15.9			10.5	6.3
Level of Service		F	D		F	D		B			B	A
Approach Delay (s)		294.5			72.7			15.9			10.2	
Approach LOS		F			E			B			B	

Intersection Summary			
HCM Average Control Delay	35.7	HCM Level of Service	D
HCM Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	121.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0			4.0				4.0
Lane Util. Factor		0.91		1.00	0.91			1.00				1.00
Frpb, ped/bikes		1.00		1.00	1.00			0.99				1.00
Flpb, ped/bikes		1.00		0.98	1.00			1.00				1.00
Frt		0.99		1.00	0.99			0.95				0.86
Flt Protected		1.00		0.95	1.00			0.97				1.00
Satd. Flow (prot)		4219		1456	4222			1436				1353
Flt Permitted		0.91		0.45	1.00			0.97				1.00
Satd. Flow (perm)		3860		683	4222			1436				1353
Volume (vph)	6	450	27	33	1434	77	42	10	27	0	0	18
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	489	29	36	1559	84	46	11	29	0	0	20
RTOR Reduction (vph)	0	6	0	0	6	0	0	18	0	0	0	15
Lane Group Flow (vph)	0	519	0	36	1637	0	0	68	0	0	0	5
Confl. Peds. (#/hr)	18		13	13		18	7		12	12		7
Turn Type	Perm			Perm			Perm					custom
Protected Phases		2			6			8				4
Permitted Phases	2			6			8					4
Actuated Green, G (s)		64.0		64.0	64.0			26.0				26.0
Effective Green, g (s)		65.0		65.0	65.0			27.0				27.0
Actuated g/C Ratio		0.65		0.65	0.65			0.27				0.27
Clearance Time (s)		5.0		5.0	5.0			5.0				5.0
Lane Grp Cap (vph)		2509		444	2744			388				365
v/s Ratio Prot					c0.39							0.00
v/s Ratio Perm		0.13		0.05				0.05				
v/c Ratio		0.21		0.08	0.60			0.17				0.01
Uniform Delay, d1		7.1		6.5	10.0			28.0				26.8
Progression Factor		1.00		0.47	0.62			1.00				0.60
Incremental Delay, d2		0.2		0.3	0.7			1.0				0.1
Delay (s)		7.3		3.3	6.9			28.9				16.3
Level of Service		A		A	A			C				B
Approach Delay (s)		7.3			6.8			28.9			16.3	
Approach LOS		A			A			C			B	

Intersection Summary			
HCM Average Control Delay	7.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0						4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91						1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00						0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00						1.00	
Frt	1.00	1.00		1.00	0.99						0.93	
Flt Protected	0.95	1.00		0.95	1.00						0.99	
Satd. Flow (prot)	1485	4249		1480	4234						1416	
Flt Permitted	0.08	1.00		0.37	1.00						0.99	
Satd. Flow (perm)	125	4249		574	4234						1416	
Volume (vph)	62	613	18	35	1623	82	0	0	0	26	20	44
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	67	666	20	38	1764	89	0	0	0	28	22	48
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	67	683	0	38	1853	0	0	0	0	0	98	0
Confl. Peds. (#/hr)	16		15	15		16	15		9	9		15
Turn Type	Perm			Perm						Perm		
Protected Phases		2			6						4	
Permitted Phases	2			6						4		
Actuated Green, G (s)	63.0	63.0		63.0	63.0						26.0	
Effective Green, g (s)	64.0	64.0		64.0	64.0						28.0	
Actuated g/C Ratio	0.64	0.64		0.64	0.64						0.28	
Clearance Time (s)	5.0	5.0		5.0	5.0						6.0	
Lane Grp Cap (vph)	80	2719		367	2710						396	
v/s Ratio Prot		0.16			0.44							
v/s Ratio Perm	c0.53			0.07							0.07	
v/c Ratio	0.84	0.25		0.10	0.68						0.25	
Uniform Delay, d1	14.0	7.7		6.9	11.5						27.8	
Progression Factor	1.51	0.97		1.18	0.89						1.00	
Incremental Delay, d2	62.3	0.2		0.4	1.1						1.5	
Delay (s)	83.4	7.7		8.6	11.4						29.3	
Level of Service	F	A		A	B						C	
Approach Delay (s)		14.5			11.3			0.0			29.3	
Approach LOS		B			B			A			C	

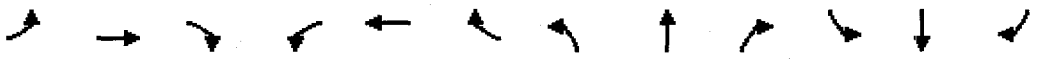
Intersection Summary			
HCM Average Control Delay	12.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	85.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↖↑↑↑					↰	⇕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		3.0	3.0		3.0					3.0	3.0	
Lane Util. Factor		0.91	1.00		0.91					0.95	0.95	
Frt		1.00	0.85		1.00					1.00	0.96	
Flt Protected		1.00	1.00		1.00					0.95	0.98	
Satd. Flow (prot)		4577	1425		4571					1513	1504	
Flt Permitted		1.00	1.00		0.94					0.95	0.98	
Satd. Flow (perm)		4577	1425		4296					1513	1504	
Volume (vph)	0	397	265	42	1721	0	0	0	0	210	57	39
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	441	294	47	1912	0	0	0	0	233	63	43
RTOR Reduction (vph)	0	0	235	0	0	0	0	0	0	0	12	0
Lane Group Flow (vph)	0	441	59	0	1959	0	0	0	0	168	159	0
Turn Type			Perm	D.P+P						Split		
Protected Phases		4		3	3 4					6	6	
Permitted Phases			4	4								
Actuated Green, G (s)		18.0	18.0		64.0					24.0	24.0	
Effective Green, g (s)		20.0	20.0		65.0					26.0	26.0	
Actuated g/C Ratio		0.20	0.20		0.65					0.26	0.26	
Clearance Time (s)		5.0	5.0							5.0	5.0	
Lane Grp Cap (vph)		915	285		2916					393	391	
v/s Ratio Prot		0.10			c0.30					c0.11	0.11	
v/s Ratio Perm			0.04		c0.13							
v/c Ratio		0.48	0.21		0.67					0.43	0.41	
Uniform Delay, d1		35.4	33.4		10.9					30.8	30.6	
Progression Factor		0.89	3.08		0.02					1.00	1.00	
Incremental Delay, d2		1.8	1.6		0.1					3.4	3.1	
Delay (s)		33.5	104.4		0.3					34.2	33.7	
Level of Service		C	F		A					C	C	
Approach Delay (s)		61.8			0.3			0.0			34.0	
Approach LOS		E			A			A			C	

Intersection Summary			
HCM Average Control Delay	19.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	75.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		3.0			3.0		3.0	3.0				
Lane Util. Factor		0.91			0.91		0.95	0.95				
Frt		1.00			0.99		1.00	0.98				
Flt Protected		0.99			1.00		0.95	0.96				
Satd. Flow (prot)		4553			4530		1513	1510				
Flt Permitted		0.87			1.00		0.95	0.96				
Satd. Flow (perm)		3982			4530		1513	1510				
Volume (vph)	62	545	0	0	489	36	1274	96	76	0	0	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	69	606	0	0	543	40	1416	107	84	0	0	0
RTOR Reduction (vph)	0	0	0	0	9	0	0	4	0	0	0	0
Lane Group Flow (vph)	0	675	0	0	575	0	808	795	0	0	0	0
Turn Type	D.P+P						Split					
Protected Phases	7	5 7			5		2	2				
Permitted Phases	5											
Actuated Green, G (s)		43.0			14.0		43.0	43.0				
Effective Green, g (s)		46.0			15.0		45.0	45.0				
Actuated g/C Ratio		0.46			0.15		0.45	0.45				
Clearance Time (s)					4.0		5.0	5.0				
Lane Grp Cap (vph)		2009			680		681	680				
v/s Ratio Prot		c0.10			c0.13		c0.53	0.53				
v/s Ratio Perm		0.05										
v/c Ratio		0.34			0.84		1.19	1.17				
Uniform Delay, d1		17.2			41.4		27.5	27.5				
Progression Factor		0.06			1.00		1.00	1.00				
Incremental Delay, d2		0.4			12.3		98.3	91.1				
Delay (s)		1.5			53.6		125.8	118.6				
Level of Service		A			D		F	F				
Approach Delay (s)		1.5			53.6			122.2			0.0	
Approach LOS		A			D			F			A	

Intersection Summary			
HCM Average Control Delay	79.8	HCM Level of Service	E
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	79.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



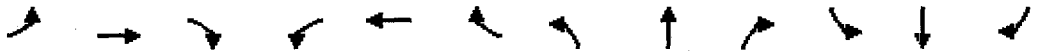
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			0.99			0.99	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.99			0.99			0.92			0.94	
Flt Protected		1.00			1.00			0.98			0.98	
Satd. Flow (prot)		1552			1546			1395			1410	
Flt Permitted		1.00			0.92			0.89			0.88	
Satd. Flow (perm)		1547			1433			1267			1269	
Volume (vph)	11	710	33	17	164	8	44	12	78	14	2	14
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	772	36	18	178	9	48	13	85	15	2	15
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	818	0	0	205	0	0	146	0	0	32	0
Confl. Peds. (#/hr)	12		11	11		12	4		1	1		4
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		72.0			72.0			18.0			18.0	
Effective Green, g (s)		73.0			73.0			19.0			19.0	
Actuated g/C Ratio		0.73			0.73			0.19			0.19	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Lane Grp Cap (vph)		1129			1046			241			241	
v/s Ratio Prot												
v/s Ratio Perm		c0.53			0.14			c0.12			0.03	
v/c Ratio		0.72			0.20			0.61			0.13	
Uniform Delay, d1		7.7			4.3			37.1			33.7	
Progression Factor		1.00			1.00			0.87			1.00	
Incremental Delay, d2		4.1			0.4			10.7			1.1	
Delay (s)		11.8			4.7			43.0			34.8	
Level of Service		B			A			D			C	
Approach Delay (s)		11.8			4.7			43.0			34.8	
Approach LOS		B			A			D			C	

Intersection Summary			
HCM Average Control Delay	15.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	81.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	562	176	73	122	64	53
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	611	191	79	133	70	58
Pedestrians	2			5	8	
Lane Width (ft)	10.0			10.0	10.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	0			0	1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)	670			452		
pX, platoon unblocked			0.73		0.75	0.73
vC, conflicting volume			810		1008	720
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			741		928	617
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			87		64	84
cM capacity (veh/h)			631		194	356

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	802	212	127
Volume Left	0	79	70
Volume Right	191	0	58
cSH	1700	631	245
Volume to Capacity	0.47	0.13	0.52
Queue Length 95th (ft)	0	11	68
Control Delay (s)	0.0	5.3	34.6
Lane LOS		A	D
Approach Delay (s)	0.0	5.3	34.6
Approach LOS			D

Intersection Summary			
Average Delay	4.8		
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0		4.0			4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00		0.91			0.91	1.00
Frpb, ped/bikes		1.00	0.98		1.00	0.98		1.00			1.00	0.98
Flpb, ped/bikes		1.00	1.00		1.00	1.00		1.00			1.00	1.00
Frt		1.00	0.85		1.00	0.85		1.00			1.00	0.85
Flt Protected		0.98	1.00		1.00	1.00		1.00			1.00	1.00
Satd. Flow (prot)		1536	1298		1565	1304		4256			4272	1301
Flt Permitted		0.86	1.00		1.00	1.00		1.00			1.00	1.00
Satd. Flow (perm)		1340	1298		1565	1304		4256			4272	1301
Volume (vph)	63	128	486	0	114	158	0	1328	28	0	1904	78
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	68	139	528	0	124	172	0	1443	30	0	2070	85
RTOR Reduction (vph)	0	0	14	0	0	50	0	2	0	0	0	26
Lane Group Flow (vph)	0	207	514	0	124	122	0	1471	0	0	2070	59
Confl. Peds. (#/hr)	5		10	10		5	2		6	6		2
Turn Type	Perm		Perm			Perm						Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4			8						6
Actuated Green, G (s)		29.0	29.0		24.0	24.0		81.0			81.0	81.0
Effective Green, g (s)		29.0	29.0		29.0	29.0		83.0			83.0	83.0
Actuated g/C Ratio		0.24	0.24		0.24	0.24		0.69			0.69	0.69
Clearance Time (s)		4.0	4.0		9.0	9.0		6.0			6.0	6.0
Lane Grp Cap (vph)		324	314		378	315		2944			2955	900
v/s Ratio Prot					0.08			0.35			c0.48	
v/s Ratio Perm		0.15	c0.40			0.09						0.05
v/c Ratio		0.64	1.64		0.33	0.39		0.50			0.70	0.07
Uniform Delay, d1		40.8	45.5		37.5	38.1		8.7			11.1	6.0
Progression Factor		1.00	1.00		1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2		9.3	301.2		2.3	3.6		0.6			1.4	0.1
Delay (s)		50.1	346.7		39.8	41.6		9.3			12.5	6.1
Level of Service		D	F		D	D		A			B	A
Approach Delay (s)		263.1			40.9			9.3			12.2	
Approach LOS		F			D			A			B	

Intersection Summary			
HCM Average Control Delay	52.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	121.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0			4.0				4.0
Lane Util. Factor		0.91		1.00	0.91			1.00				1.00
Frpb, ped/bikes		1.00		1.00	0.99			0.99				0.98
Flpb, ped/bikes		1.00		0.99	1.00			1.00				1.00
Frt		0.99		1.00	0.99			0.97				0.86
Flt Protected		1.00		0.95	1.00			0.97				1.00
Satd. Flow (prot)		4226		1478	4197			1467				1327
Flt Permitted		0.93		0.18	1.00			0.97				1.00
Satd. Flow (perm)		3928		282	4197			1467				1327
Volume (vph)	11	1101	55	17	746	62	35	16	13	0	0	38
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	1197	60	18	811	67	38	17	14	0	0	41
RTOR Reduction (vph)	0	5	0	0	9	0	0	9	0	0	0	30
Lane Group Flow (vph)	0	1264	0	18	869	0	0	60	0	0	0	11
Confl. Peds. (#/hr)	18		13	13		18	7		12	12		7
Turn Type	Perm			Perm			Perm					custom
Protected Phases		2			6			8				
Permitted Phases	2			6			8					4
Actuated Green, G (s)		64.0		64.0	64.0			26.0				26.0
Effective Green, g (s)		65.0		65.0	65.0			27.0				27.0
Actuated g/C Ratio		0.65		0.65	0.65			0.27				0.27
Clearance Time (s)		5.0		5.0	5.0			5.0				5.0
Lane Grp Cap (vph)		2553		183	2728			396				358
v/s Ratio Prot					0.21							
v/s Ratio Perm		c0.32		0.06				0.04				0.01
v/c Ratio		0.50		0.10	0.32			0.15				0.03
Uniform Delay, d1		9.0		6.5	7.7			27.8				26.9
Progression Factor		1.00		0.98	0.90			1.00				1.00
Incremental Delay, d2		0.7		1.0	0.3			0.8				0.1
Delay (s)		9.7		7.4	7.2			28.6				27.0
Level of Service		A		A	A			C				C
Approach Delay (s)		9.7			7.2			28.6			27.0	
Approach LOS		A			A			C			C	

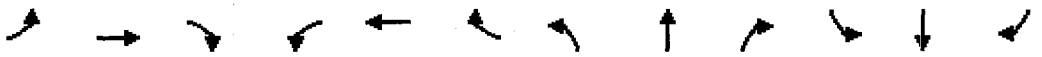
Intersection Summary				
HCM Average Control Delay	9.6	HCM Level of Service	A	
HCM Volume to Capacity ratio	0.39			
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	61.9%	ICU Level of Service	B	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0						4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91						1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00						0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00						0.99	
Frt	1.00	1.00		1.00	0.99						0.96	
Flt Protected	0.95	1.00		0.95	1.00						0.97	
Satd. Flow (prot)	1481	4267		1485	4198						1442	
Flt Permitted	0.28	1.00		0.10	1.00						0.97	
Satd. Flow (perm)	443	4267		160	4198						1442	
Volume (vph)	110	1542	10	38	752	79	0	0	0	80	25	44
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	1676	11	41	817	86	0	0	0	87	27	48
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	120	1686	0	41	903	0	0	0	0	0	162	0
Confl. Peds. (#/hr)	16		15	15		16	15		9	9		15
Turn Type	Perm			Perm						Perm		
Protected Phases		2			6						4	
Permitted Phases	2			6						4		
Actuated Green, G (s)	63.0	63.0		63.0	63.0						26.0	
Effective Green, g (s)	64.0	64.0		64.0	64.0						28.0	
Actuated g/C Ratio	0.64	0.64		0.64	0.64						0.28	
Clearance Time (s)	5.0	5.0		5.0	5.0						6.0	
Lane Grp Cap (vph)	284	2731		102	2687						404	
v/s Ratio Prot		c0.40			0.22							
v/s Ratio Perm	0.27			0.26							0.11	
v/c Ratio	0.42	0.62		0.40	0.34						0.40	
Uniform Delay, d1	8.9	10.7		8.7	8.3						29.2	
Progression Factor	1.86	1.85		1.06	0.90						0.91	
Incremental Delay, d2	4.4	1.0		11.0	0.3						2.6	
Delay (s)	20.9	20.8		20.3	7.7						29.3	
Level of Service	C	C		C	A						C	
Approach Delay (s)		20.8			8.3			0.0			29.3	
Approach LOS		C			A			A			C	

Intersection Summary			
HCM Average Control Delay	17.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	90.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑					↰	✥	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		3.0	3.0		3.0					3.0	3.0	
Lane Util. Factor		0.91	1.00		0.91					0.95	0.95	
Frt		1.00	0.85		1.00					1.00	0.97	
Flt Protected		1.00	1.00		0.99					0.95	0.99	
Satd. Flow (prot)		4577	1425		4552					1513	1531	
Flt Permitted		1.00	1.00		0.80					0.95	0.99	
Satd. Flow (perm)		4577	1425		3672					1513	1531	
Volume (vph)	0	650	567	87	717	0	0	0	0	134	84	28
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	722	630	97	797	0	0	0	0	149	93	31
RTOR Reduction (vph)	0	0	372	0	0	0	0	0	0	0	10	0
Lane Group Flow (vph)	0	722	258	0	894	0	0	0	0	134	129	0
Turn Type			Perm	D.P+P						Split		
Protected Phases		4		3	3 4					6	6	
Permitted Phases			4	4								
Actuated Green, G (s)		39.0	39.0		64.0					24.0	24.0	
Effective Green, g (s)		41.0	41.0		65.0					26.0	26.0	
Actuated g/C Ratio		0.41	0.41		0.65					0.26	0.26	
Clearance Time (s)		5.0	5.0							5.0	5.0	
Lane Grp Cap (vph)		1877	584		2598					393	398	
v/s Ratio Prot		0.16			c0.08					c0.09	0.08	
v/s Ratio Perm			c0.18		0.14							
v/c Ratio		0.38	0.44		0.34					0.34	0.32	
Uniform Delay, d1		20.7	21.3		7.9					30.0	29.9	
Progression Factor		1.02	7.38		0.08					1.00	1.00	
Incremental Delay, d2		0.5	1.9		0.3					2.4	2.1	
Delay (s)		21.5	158.9		1.0					32.4	32.0	
Level of Service		C	F		A					C	C	
Approach Delay (s)		85.5			1.0			0.0			32.2	
Approach LOS		F			A			A			C	

Intersection Summary				
HCM Average Control Delay	49.7	HCM Level of Service	D	
HCM Volume to Capacity ratio	0.39			
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0	
Intersection Capacity Utilization	73.9%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		3.0			3.0		3.0	3.0				
Lane Util. Factor		0.91			0.91		0.95	0.95				
Frt		1.00			0.96		1.00	0.94				
Flt Protected		1.00			1.00		0.95	0.98				
Satd. Flow (prot)		4564			4401		1513	1467				
Flt Permitted		0.89			1.00		0.95	0.98				
Satd. Flow (perm)		4065			4401		1513	1467				
Volume (vph)	44	740	0	0	529	182	275	28	71	0	0	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	49	822	0	0	588	202	306	31	79	0	0	0
RTOR Reduction (vph)	0	0	0	0	62	0	0	22	0	0	0	0
Lane Group Flow (vph)	0	871	0	0	728	0	208	186	0	0	0	0
Turn Type	D.P+P						Split					
Protected Phases	7	5 7			5		2	2				
Permitted Phases	5											
Actuated Green, G (s)		64.0			35.0		22.0	22.0				
Effective Green, g (s)		67.0			36.0		24.0	24.0				
Actuated g/C Ratio		0.67			0.36		0.24	0.24				
Clearance Time (s)					4.0		5.0	5.0				
Lane Grp Cap (vph)		2878			1584		363	352				
v/s Ratio Prot		c0.09			c0.17		c0.14	0.13				
v/s Ratio Perm		0.11										
v/c Ratio		0.30			0.46		0.57	0.53				
Uniform Delay, d1		6.8			24.5		33.5	33.1				
Progression Factor		0.12			1.00		1.00	1.00				
Incremental Delay, d2		0.3			1.0		6.4	5.6				
Delay (s)		1.1			25.5		39.9	38.7				
Level of Service		A			C		D	D				
Approach Delay (s)		1.1			25.5			39.3			0.0	
Approach LOS		A			C			D			A	

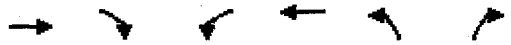
Intersection Summary			
HCM Average Control Delay	18.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	54.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Appendix C

Background Future Intersection Capacity Analyses

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			0.99			0.99	
Flpb, ped/bikes		1.00			1.00			0.99			1.00	
Frt		0.99			0.99			0.97			0.97	
Flt Protected		1.00			1.00			0.97			0.97	
Satd. Flow (prot)		1549			1547			1447			1461	
Flt Permitted		0.97			0.97			0.83			0.87	
Satd. Flow (perm)		1505			1501			1236			1307	
Volume (vph)	15	226	11	29	378	20	40	7	16	10	3	4
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	246	12	32	411	22	43	8	17	11	3	4
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	272	0	0	465	0	0	68	0	0	18	0
Confl. Peds. (#/hr)	12		11	11		12	4		1	1		4
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		72.0			72.0			18.0			18.0	
Effective Green, g (s)		73.0			73.0			19.0			19.0	
Actuated g/C Ratio		0.73			0.73			0.19			0.19	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Lane Grp Cap (vph)		1099			1096			235			248	
v/s Ratio Prot												
v/s Ratio Perm		0.18			c0.31			c0.06			0.01	
v/c Ratio		0.25			0.42			0.29			0.07	
Uniform Delay, d1		4.5			5.3			34.7			33.3	
Progression Factor		1.00			1.00			0.93			1.00	
Incremental Delay, d2		0.5			1.2			2.5			0.6	
Delay (s)		5.0			6.5			34.8			33.8	
Level of Service		A			A			C			C	
Approach Delay (s)		5.0			6.5			34.8			33.8	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM Average Control Delay	8.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	81.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	206	57	101	377	68	66
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	224	62	110	410	74	72
Pedestrians	2			5	8	
Lane Width (ft)	10.0			10.0	10.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	0			0	1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)	670			452		
pX, platoon unblocked					0.78	
vC, conflicting volume			294		894	268
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			294		864	268
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			91		68	91
cM capacity (veh/h)			1261		229	764

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	286	520	146
Volume Left	0	110	74
Volume Right	62	0	72
cSH	1700	1261	349
Volume to Capacity	0.17	0.09	0.42
Queue Length 95th (ft)	0	7	50
Control Delay (s)	0.0	2.5	22.5
Lane LOS		A	C
Approach Delay (s)	0.0	2.5	22.5
Approach LOS			C

Intersection Summary			
Average Delay	4.8		
Intersection Capacity Utilization	63.9%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0		4.0			4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00		0.91			0.91	1.00
Frpb, ped/bikes		1.00	0.98		1.00	0.98		1.00			1.00	0.98
Flpb, ped/bikes		1.00	1.00		1.00	1.00		1.00			1.00	1.00
Frt		1.00	0.85		1.00	0.85		1.00			1.00	0.85
Flt Protected		0.98	1.00		1.00	1.00		1.00			1.00	1.00
Satd. Flow (prot)		1527	1298		1565	1304		4255			4272	1301
Flt Permitted		0.18	1.00		1.00	1.00		1.00			1.00	1.00
Satd. Flow (perm)		275	1298		1565	1304		4255			4272	1301
Volume (vph)	90	102	109	0	373	214	0	2412	55	0	2150	128
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	111	118	0	405	233	0	2622	60	0	2337	139
RTOR Reduction (vph)	0	0	8	0	0	5	0	2	0	0	0	34
Lane Group Flow (vph)	0	209	110	0	405	228	0	2680	0	0	2337	105
Confl. Peds. (#/hr)	5		10	10		5	2		6	6		2
Turn Type	Perm		Perm			Perm						Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4			8						6
Actuated Green, G (s)		29.0	29.0		24.0	24.0		81.0			81.0	81.0
Effective Green, g (s)		29.0	29.0		29.0	29.0		83.0			83.0	83.0
Actuated g/C Ratio		0.24	0.24		0.24	0.24		0.69			0.69	0.69
Clearance Time (s)		4.0	4.0		9.0	9.0		6.0			6.0	6.0
Lane Grp Cap (vph)		66	314		378	315		2943			2955	900
v/s Ratio Prot					0.26			c0.63			0.55	
v/s Ratio Perm		c0.76	0.09			0.18						0.08
v/c Ratio		3.17	0.35		1.07	0.73		0.91			0.79	0.12
Uniform Delay, d1		45.5	37.7		45.5	41.8		15.4			12.6	6.2
Progression Factor		1.00	1.00		1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2		1013.4	3.1		66.6	13.6		5.5			2.2	0.3
Delay (s)		1058.9	40.8		112.1	55.4		20.9			14.8	6.5
Level of Service		F	D		F	E		C			B	A
Approach Delay (s)		691.5			91.4			20.9			14.4	
Approach LOS		F			F			C			B	

Intersection Summary			
HCM Average Control Delay	61.4	HCM Level of Service	E
HCM Volume to Capacity ratio	1.49		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	123.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↑↑↑↕		↰	↕↑↑↑↕			↕↕				↱
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0			4.0				4.0
Lane Util. Factor		0.91		1.00	0.91			1.00				1.00
Frpb, ped/bikes		0.99		1.00	1.00			0.99				1.00
Flpb, ped/bikes		1.00		0.99	1.00			1.00				1.00
Frt		0.99		1.00	0.99			0.96				0.86
Flt Protected		1.00		0.95	1.00			0.97				1.00
Satd. Flow (prot)		4196		1467	4222			1437				1353
Flt Permitted		0.92		0.32	1.00			0.97				1.00
Satd. Flow (perm)		3856		502	4222			1437				1353
Volume (vph)	6	665	60	35	1560	84	50	11	29	0	0	19
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	723	65	38	1696	91	54	12	32	0	0	21
RTOR Reduction (vph)	0	11	0	0	6	0	0	18	0	0	0	15
Lane Group Flow (vph)	0	785	0	38	1781	0	0	80	0	0	0	6
Confl. Peds. (#/hr)	18		13	13		18	7		12	12		7
Turn Type	Perm			Perm			Perm					custom
Protected Phases		2			6			8				4
Permitted Phases	2			6			8					4
Actuated Green, G (s)		64.0		64.0	64.0			26.0				26.0
Effective Green, g (s)		65.0		65.0	65.0			27.0				27.0
Actuated g/C Ratio		0.65		0.65	0.65			0.27				0.27
Clearance Time (s)		5.0		5.0	5.0			5.0				5.0
Lane Grp Cap (vph)		2506		326	2744			388				365
v/s Ratio Prot					c0.42							0.00
v/s Ratio Perm		0.20		0.08				0.06				
v/c Ratio		0.31		0.12	0.65			0.21				0.02
Uniform Delay, d1		7.7		6.6	10.6			28.2				26.8
Progression Factor		1.00		0.45	0.67			1.00				0.76
Incremental Delay, d2		0.3		0.5	0.8			1.2				0.1
Delay (s)		8.0		3.5	7.9			29.4				20.5
Level of Service		A		A	A			C				C
Approach Delay (s)		8.0			7.8			29.4			20.5	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	77.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0						4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91						1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00						0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00						1.00	
Frt	1.00	0.99		1.00	0.99						0.93	
Flt Protected	0.95	1.00		0.95	1.00						0.99	
Satd. Flow (prot)	1485	4221		1481	4234						1416	
Flt Permitted	0.06	1.00		0.30	1.00						0.99	
Satd. Flow (perm)	102	4221		463	4234						1416	
Volume (vph)	66	744	52	37	1743	88	0	0	0	28	21	47
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	72	809	57	40	1895	96	0	0	0	30	23	51
RTOR Reduction (vph)	0	8	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	72	858	0	40	1991	0	0	0	0	0	104	0
Confl. Peds. (#/hr)	16		15	15		16	15		9	9		15
Turn Type	Perm			Perm						Perm		
Protected Phases		2			6						4	
Permitted Phases	2			6						4		
Actuated Green, G (s)	63.0	63.0		63.0	63.0						26.0	
Effective Green, g (s)	64.0	64.0		64.0	64.0						28.0	
Actuated g/C Ratio	0.64	0.64		0.64	0.64						0.28	
Clearance Time (s)	5.0	5.0		5.0	5.0						6.0	
Lane Grp Cap (vph)	65	2701		296	2710						396	
v/s Ratio Prot		0.20			0.47							
v/s Ratio Perm	c0.71			0.09							0.07	
v/c Ratio	1.11	0.32		0.14	0.73						0.26	
Uniform Delay, d1	18.0	8.1		7.1	12.2						28.0	
Progression Factor	1.70	0.98		1.17	0.89						1.00	
Incremental Delay, d2	143.1	0.3		0.6	1.2						1.6	
Delay (s)	173.6	8.3		8.9	12.0						29.5	
Level of Service	F	A		A	B						C	
Approach Delay (s)		20.9			12.0			0.0			29.5	
Approach LOS		C			B			A			C	

Intersection Summary			
HCM Average Control Delay	15.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	88.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↰↑↑↑					↰	✥	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		3.0	3.0		3.0					3.0	3.0	
Lane Util. Factor		0.91	1.00		0.91					0.95	0.95	
Frt		1.00	0.85		1.00					1.00	0.98	
Flt Protected		1.00	1.00		1.00					0.95	0.97	
Satd. Flow (prot)		4577	1425		4567					1513	1509	
Flt Permitted		1.00	1.00		0.91					0.95	0.97	
Satd. Flow (perm)		4577	1425		4144					1513	1509	
Volume (vph)	0	515	281	81	1848	0	0	0	0	462	60	41
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	572	312	90	2053	0	0	0	0	513	67	46
RTOR Reduction (vph)	0	0	250	0	0	0	0	0	0	0	6	0
Lane Group Flow (vph)	0	572	62	0	2143	0	0	0	0	312	308	0
Turn Type			Perm	D.P+P						Split		
Protected Phases		4		3	3 4					6	6	
Permitted Phases			4	4								
Actuated Green, G (s)		18.0	18.0		64.0					24.0	24.0	
Effective Green, g (s)		20.0	20.0		65.0					26.0	26.0	
Actuated g/C Ratio		0.20	0.20		0.65					0.26	0.26	
Clearance Time (s)		5.0	5.0							5.0	5.0	
Lane Grp Cap (vph)		915	285		2884					393	392	
v/s Ratio Prot		0.12			c0.33					c0.21	0.20	
v/s Ratio Perm			0.04		c0.15							
v/c Ratio		0.63	0.22		0.74					0.79	0.79	
Uniform Delay, d1		36.6	33.5		11.8					34.5	34.4	
Progression Factor		0.86	2.86		0.03					1.00	1.00	
Incremental Delay, d2		3.1	1.7		0.2					15.2	14.6	
Delay (s)		34.7	97.5		0.6					49.7	49.0	
Level of Service		C	F		A					D	D	
Approach Delay (s)		56.9			0.6			0.0			49.4	
Approach LOS		E			A			A			D	

Intersection Summary			
HCM Average Control Delay	22.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	88.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

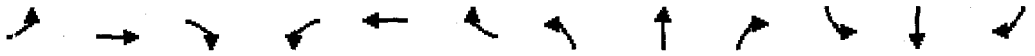
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	22	0	0	0	0	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	24	0	0	0	0	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		552				
pX, platoon unblocked						
vC, conflicting volume	0				48	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0				48	0
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				100	100
cM capacity (veh/h)	1623				948	1085

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	24	0	3
Volume Left	24	0	0
Volume Right	0	0	3
cSH	1623	1700	1085
Volume to Capacity	0.01	0.00	0.00
Queue Length 95th (ft)	1	0	0
Control Delay (s)	7.3	0.0	8.3
Lane LOS	A		A
Approach Delay (s)	7.3	0.0	8.3
Approach LOS			A

Intersection Summary			
Average Delay	7.4		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

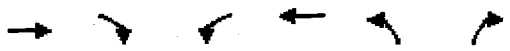
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		3.0			3.0		3.0	3.0				
Lane Util. Factor		0.91			0.91		0.95	0.95				
Frt		1.00			0.99		1.00	0.98				
Flt Protected		1.00			1.00		0.95	0.97				
Satd. Flow (prot)		4561			4521		1513	1507				
Flt Permitted		0.82			1.00		0.95	0.97				
Satd. Flow (perm)		3763			4521		1513	1507				
Volume (vph)	66	911	0	0	575	50	1354	130	107	0	0	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	73	1012	0	0	639	56	1504	144	119	0	0	0
RTOR Reduction (vph)	0	0	0	0	10	0	0	6	0	0	0	0
Lane Group Flow (vph)	0	1085	0	0	685	0	889	873	0	0	0	0
Turn Type	D.P+P						Split					
Protected Phases	7	5 7			5		2	2				
Permitted Phases	5											
Actuated Green, G (s)		43.0			14.0		43.0	43.0				
Effective Green, g (s)		46.0			15.0		45.0	45.0				
Actuated g/C Ratio		0.46			0.15		0.45	0.45				
Clearance Time (s)					4.0		5.0	5.0				
Lane Grp Cap (vph)		1978			678		681	678				
v/s Ratio Prot		c0.17			c0.15		c0.59	0.58				
v/s Ratio Perm		0.08										
v/c Ratio		0.55			1.01		1.31	1.29				
Uniform Delay, d1		19.5			42.5		27.5	27.5				
Progression Factor		0.09			1.00		1.00	1.00				
Incremental Delay, d2		0.8			37.1		147.9	140.1				
Delay (s)		2.6			79.6		175.4	167.6				
Level of Service		A			E		F	F				
Approach Delay (s)		2.6			79.6			171.5			0.0	
Approach LOS		A			E			F			A	

Intersection Summary			
HCM Average Control Delay	101.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	93.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			0.99			0.99	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.99			0.99			0.92			0.95	
Flt Protected		1.00			1.00			0.98			0.97	
Satd. Flow (prot)		1552			1543			1397			1431	
Flt Permitted		0.99			0.92			0.89			0.74	
Satd. Flow (perm)		1543			1419			1257			1081	
Volume (vph)	16	773	35	18	190	13	47	14	83	48	8	32
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	840	38	20	207	14	51	15	90	52	9	35
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	893	0	0	241	0	0	156	0	0	96	0
Confl. Peds. (#/hr)	12		11	11		12	4		1	1		4
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		72.0			72.0			18.0			18.0	
Effective Green, g (s)		73.0			73.0			19.0			19.0	
Actuated g/C Ratio		0.73			0.73			0.19			0.19	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Lane Grp Cap (vph)		1126			1036			239			205	
v/s Ratio Prot												
v/s Ratio Perm		c0.58			0.17			c0.12			0.09	
v/c Ratio		0.79			0.23			0.65			0.47	
Uniform Delay, d1		8.7			4.4			37.4			36.0	
Progression Factor		1.00			1.00			0.88			1.00	
Incremental Delay, d2		5.8			0.5			12.8			7.5	
Delay (s)		14.4			4.9			45.7			43.5	
Level of Service		B			A			D			D	
Approach Delay (s)		14.4			4.9			45.7			43.5	
Approach LOS		B			A			D			D	

Intersection Summary			
HCM Average Control Delay	18.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	81.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



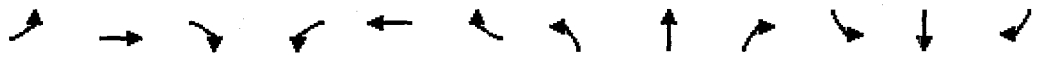
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	645	191	77	150	68	56
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	701	208	84	163	74	61
Pedestrians	2			5	8	
Lane Width (ft)	10.0			10.0	10.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	0			0	1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)	670			452		
pX, platoon unblocked			0.66		0.69	0.66
vC, conflicting volume			917		1145	818
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			873		1081	723
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			83		46	78
cM capacity (veh/h)			504		137	277

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	909	247	135
Volume Left	0	84	74
Volume Right	208	0	61
cSH	1700	504	178
Volume to Capacity	0.53	0.17	0.76
Queue Length 95th (ft)	0	15	123
Control Delay (s)	0.0	6.2	70.4
Lane LOS		A	F
Approach Delay (s)	0.0	6.2	70.4
Approach LOS			F

Intersection Summary			
Average Delay		8.5	
Intersection Capacity Utilization		83.3%	ICU Level of Service E
Analysis Period (min)		15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0		4.0			4.0	4.0
Lane Util. Factor		0.95	0.95		1.00	1.00		0.91			0.91	1.00
Frpb, ped/bikes		0.99	0.98		1.00	0.98		1.00			1.00	0.98
Flpb, ped/bikes		1.00	1.00		1.00	1.00		1.00			1.00	1.00
Frt		0.95	0.85		1.00	0.85		1.00			1.00	0.85
Flt Protected		0.99	1.00		1.00	1.00		1.00			1.00	1.00
Satd. Flow (prot)		1386	1233		1565	1304		4251			4272	1299
Flt Permitted		0.78	1.00		1.00	1.00		1.00			1.00	1.00
Satd. Flow (perm)		1100	1233		1565	1304		4251			4272	1299
Volume (vph)	84	163	522	0	139	282	0	1790	49	0	2222	86
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	91	177	567	0	151	307	0	1946	53	0	2415	93
RTOR Reduction (vph)	0	7	7	0	0	17	0	2	0	0	0	29
Lane Group Flow (vph)	0	388	433	0	151	290	0	1997	0	0	2415	64
Confl. Peds. (#/hr)	5		10	10		5	2		6	6		2
Turn Type	Perm		Perm			Perm						Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4			8						6
Actuated Green, G (s)		29.0	29.0		24.0	24.0		81.0			81.0	81.0
Effective Green, g (s)		29.0	29.0		29.0	29.0		83.0			83.0	83.0
Actuated g/C Ratio		0.24	0.24		0.24	0.24		0.69			0.69	0.69
Clearance Time (s)		4.0	4.0		9.0	9.0		6.0			6.0	6.0
Lane Grp Cap (vph)		266	298		378	315		2940			2955	898
v/s Ratio Prot					0.10			0.47			c0.57	
v/s Ratio Perm		c0.35	0.35			0.22						0.05
v/c Ratio		1.46	1.45		0.40	0.92		0.68			0.82	0.07
Uniform Delay, d1		45.5	45.5		38.2	44.4		10.8			13.1	6.0
Progression Factor		1.00	1.00		1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2		226.3	221.9		3.1	33.7		1.3			2.6	0.2
Delay (s)		271.8	267.4		41.3	78.1		12.0			15.8	6.2
Level of Service		F	F		D	E		B			B	A
Approach Delay (s)		269.5			66.0			12.0			15.4	
Approach LOS		F			E			B			B	

Intersection Summary				
HCM Average Control Delay	54.8	HCM Level of Service	D	
HCM Volume to Capacity ratio	0.98			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	104.6%	ICU Level of Service	G	
Analysis Period (min)	15			
c Critical Lane Group				

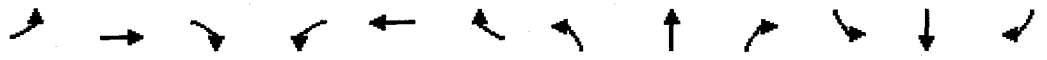


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0			4.0				4.0
Lane Util. Factor		0.91		1.00	0.91			1.00				1.00
Frpb, ped/bikes		1.00		1.00	0.99			1.00				0.98
Flpb, ped/bikes		1.00		1.00	1.00			0.99				1.00
Frt		0.99		1.00	0.99			0.98				0.86
Flt Protected		1.00		0.95	1.00			0.97				1.00
Satd. Flow (prot)		4226		1481	4205			1470				1327
Flt Permitted		0.93		0.14	1.00			0.97				1.00
Satd. Flow (perm)		3914		223	4205			1470				1327
Volume (vph)	12	1256	64	18	914	67	68	17	14	0	0	46
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	13	1365	70	20	993	73	74	18	15	0	0	50
RTOR Reduction (vph)	0	6	0	0	8	0	0	6	0	0	0	37
Lane Group Flow (vph)	0	1442	0	20	1058	0	0	101	0	0	0	14
Confl. Peds. (#/hr)	18		13	13		18	7		12	12		7
Turn Type	Perm			Perm			Perm					custom
Protected Phases		2			6			8				
Permitted Phases	2			6			8					4
Actuated Green, G (s)		64.0		64.0	64.0			26.0				26.0
Effective Green, g (s)		65.0		65.0	65.0			27.0				27.0
Actuated g/C Ratio		0.65		0.65	0.65			0.27				0.27
Clearance Time (s)		5.0		5.0	5.0			5.0				5.0
Lane Grp Cap (vph)		2544		145	2733			397				358
v/s Ratio Prot					0.25							
v/s Ratio Perm		c0.37		0.09				0.07				0.01
v/c Ratio		0.57		0.14	0.39			0.25				0.04
Uniform Delay, d1		9.7		6.7	8.2			28.6				26.9
Progression Factor		1.00		1.09	1.03			1.00				1.00
Incremental Delay, d2		0.9		1.9	0.4			1.5				0.2
Delay (s)		10.6		9.2	8.9			30.2				27.1
Level of Service		B		A	A			C				C
Approach Delay (s)		10.6			8.9			30.2			27.1	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM Average Control Delay	11.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0						4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91						1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00						0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00						0.99	
Frt	1.00	1.00		1.00	0.99						0.96	
Flt Protected	0.95	1.00		0.95	1.00						0.97	
Satd. Flow (prot)	1482	4261		1485	4200						1443	
Flt Permitted	0.25	1.00		0.08	1.00						0.97	
Satd. Flow (perm)	398	4261		122	4200						1443	
Volume (vph)	117	1696	24	40	828	84	0	0	0	85	28	47
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	127	1843	26	43	900	91	0	0	0	92	30	51
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	127	1868	0	43	991	0	0	0	0	0	173	0
Confl. Peds. (#/hr)	16		15	15		16	15		9	9		15
Turn Type	Perm			Perm						Perm		
Protected Phases		2			6						4	
Permitted Phases	2			6						4		
Actuated Green, G (s)	63.0	63.0		63.0	63.0						26.0	
Effective Green, g (s)	64.0	64.0		64.0	64.0						28.0	
Actuated g/C Ratio	0.64	0.64		0.64	0.64						0.28	
Clearance Time (s)	5.0	5.0		5.0	5.0						6.0	
Lane Grp Cap (vph)	255	2727		78	2688						404	
v/s Ratio Prot		c0.44			0.24							
v/s Ratio Perm	0.32			0.35							0.12	
v/c Ratio	0.50	0.68		0.55	0.37						0.43	
Uniform Delay, d1	9.5	11.5		10.0	8.5						29.5	
Progression Factor	1.89	1.90		1.20	1.12						0.92	
Incremental Delay, d2	6.4	1.3		23.9	0.4						2.8	
Delay (s)	24.3	23.2		35.9	9.9						30.0	
Level of Service	C	C		D	A						C	
Approach Delay (s)		23.3			10.9			0.0			30.0	
Approach LOS		C			B			A			C	

Intersection Summary			
HCM Average Control Delay	19.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	91.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		3.0	3.0		3.0					3.0	3.0	
Lane Util. Factor		0.91	1.00		0.91					0.95	0.95	
Frt		1.00	0.85		1.00					1.00	0.98	
Flt Protected		1.00	1.00		0.99					0.95	0.98	
Satd. Flow (prot)		4577	1425		4544					1513	1526	
Flt Permitted		1.00	1.00		0.71					0.95	0.98	
Satd. Flow (perm)		4577	1425		3263					1513	1526	
Volume (vph)	0	750	602	131	791	0	0	0	0	286	89	30
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	833	669	146	879	0	0	0	0	318	99	33
RTOR Reduction (vph)	0	0	395	0	0	0	0	0	0	0	6	0
Lane Group Flow (vph)	0	833	274	0	1025	0	0	0	0	222	222	0
Turn Type			Perm	D.P+P						Split		
Protected Phases		4		3	3 4					6	6	
Permitted Phases			4	4								
Actuated Green, G (s)		39.0	39.0		64.0					24.0	24.0	
Effective Green, g (s)		41.0	41.0		65.0					26.0	26.0	
Actuated g/C Ratio		0.41	0.41		0.65					0.26	0.26	
Clearance Time (s)		5.0	5.0							5.0	5.0	
Lane Grp Cap (vph)		1877	584		2428					393	397	
v/s Ratio Prot		0.18			c0.10					c0.15	0.15	
v/s Ratio Perm			c0.19		0.17							
v/c Ratio		0.44	0.47		0.42					0.56	0.56	
Uniform Delay, d1		21.3	21.6		8.4					32.1	32.0	
Progression Factor		0.98	7.13		0.07					1.00	1.00	
Incremental Delay, d2		0.6	2.0		0.4					5.8	5.6	
Delay (s)		21.4	155.6		1.0					37.9	37.6	
Level of Service		C	F		A					D	D	
Approach Delay (s)		81.2			1.0			0.0			37.8	
Approach LOS		F			A			A			D	

Intersection Summary			
HCM Average Control Delay	47.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	83.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	11	0	0	0	0	55
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	0	0	0	0	60
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		551				
pX, platoon unblocked						
vC, conflicting volume	0				24	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0				24	0
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				100	94
cM capacity (veh/h)	1623				985	1085

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	12	0	60
Volume Left	12	0	0
Volume Right	0	0	60
cSH	1623	1700	1085
Volume to Capacity	0.01	0.00	0.06
Queue Length 95th (ft)	1	0	4
Control Delay (s)	7.2	0.0	8.5
Lane LOS	A		A
Approach Delay (s)	7.2	0.0	8.5
Approach LOS			A

Intersection Summary			
Average Delay	8.3		
Intersection Capacity Utilization	13.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		3.0			3.0		3.0	3.0				
Lane Util. Factor		0.91			0.91		0.95	0.95				
Frt		1.00			0.96		1.00	0.93				
Flt Protected		1.00			1.00		0.95	0.99				
Satd. Flow (prot)		4566			4397		1513	1475				
Flt Permitted		0.88			1.00		0.95	0.99				
Satd. Flow (perm)		4043			4397		1513	1475				
Volume (vph)	47	989	0	0	629	223	293	108	119	0	0	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	52	1099	0	0	699	248	326	120	132	0	0	0
RTOR Reduction (vph)	0	0	0	0	64	0	0	29	0	0	0	0
Lane Group Flow (vph)	0	1151	0	0	883	0	282	267	0	0	0	0
Turn Type	D.P+P						Split					
Protected Phases	7	5 7			5		2	2				
Permitted Phases	5											
Actuated Green, G (s)		64.0			35.0		22.0	22.0				
Effective Green, g (s)		67.0			36.0		24.0	24.0				
Actuated g/C Ratio		0.67			0.36		0.24	0.24				
Clearance Time (s)					4.0		5.0	5.0				
Lane Grp Cap (vph)		2871			1583		363	354				
v/s Ratio Prot		c0.12			c0.20		c0.19	0.18				
v/s Ratio Perm		0.14										
v/c Ratio		0.40			0.56		0.78	0.75				
Uniform Delay, d1		7.4			25.6		35.5	35.3				
Progression Factor		0.13			1.00		1.00	1.00				
Incremental Delay, d2		0.4			1.4		15.0	13.9				
Delay (s)		1.3			27.1		50.5	49.2				
Level of Service		A			C		D	D				
Approach Delay (s)		1.3			27.1			49.8			0.0	
Approach LOS		A			C			D			A	

Intersection Summary			
HCM Average Control Delay	20.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			