EXHIBIT NO. 1

#1 & 12
1-24-04

City of Alexandria, Virginia

MEMORANDUM

DATE: JANUARY 16, 2004

TO: THE HONORABLE MAYOR AND MEMBERS OF CITY COUNCIL

THROUGH: PHILIP SUNDERLAND, CITY MANAGER

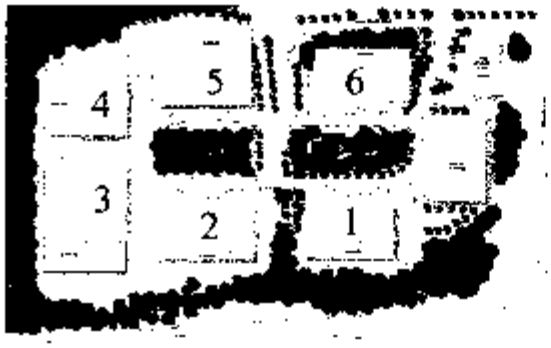
FROM: RICHARD BAIER, DIRECTOR, TRANSPORTATION & ENVIRONMENTAL SERVICES
EILEEN FOGARTY, DIRECTOR, PLANNING AND ZONING

SUBJECT: MARK CENTER - PLAZA 1A AND PLAZA 1B

BACKGROUND:

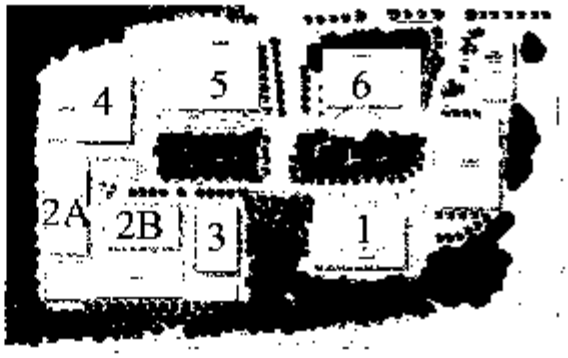
At the January 6, 2004, Planning Commission hearing, the Commission unanimously recommended approval of an amendment to the approved development special use permit (DSUP #99-0032) and transportation management plan. The Mark Center Plaza site consists of six buildings that were approved by the City in 1999. Buildings #1 through #5 have preliminary approval and do not require subsequent approvals, building #6 has conceptual approval. Two of the six buildings (building #1 and building #4) have been constructed.

Current Approval



Note: Buildings #1 and #4 have been constructed.

Proposed Amendment



Note: Buildings #1 and #4 have been constructed.

The applicant's request to amend the current approved plan consists of the following:

- Reducing the height and mass of building # 2 and building # 3.
- Preliminary development plan approval for office building #6.
- Construction of roadway, landscape and pedestrian improvements at the intersection of Seminary Road and North Beauregard Street.
- Increasing open space by 2.5 acres by removing the ramp option.

The proposed amendment is consistent with the density, parking, traffic generation and use with the previous development special use permit; however, the plan amendment provides significant enhancements that include:

- Increased open space.
- Tree retention.
- Enhanced building design.
- Reduced building height.
- Pedestrian, landscaping and street improvements.
- Additional transit subsidies that amount to approximately $240,000.
- Additional TMP requirements.

There have been five community meetings to discuss this project with six adjoining civic groups and associations. The concerns raised throughout the community process and by the speakers at the Planning Commission related to traffic generated by the proposed development. The areas of concern raised by the Planning Commission related to traffic and proposed roadway improvements. The Commission found that the traffic concerns and proposed street improvements are addressed by the staff recommendations. The following is an overview of the traffic and parking information discussed during the Commission hearing.

TRAFFIC:

As depicted in the table below the currently approved buildings will generate 1,801 AM peak hour trips 1,871 PM peak hour trips. Building #6 will generate an additional 481 AM peak trips and 449 PM peak trips with the proposed improvements on both Seminary Rd. and N. Beauregard St. The morning and evening peak periods are projected to continue operating at level of service "D" or better.

Table # 1
Traffic Generation

	(AM Peak Trips)	(PM Peak Trips)
Current Approval Buildings # 1-5	1,,801	1,871
Building # 6	481	449
Total	2,292	2,320

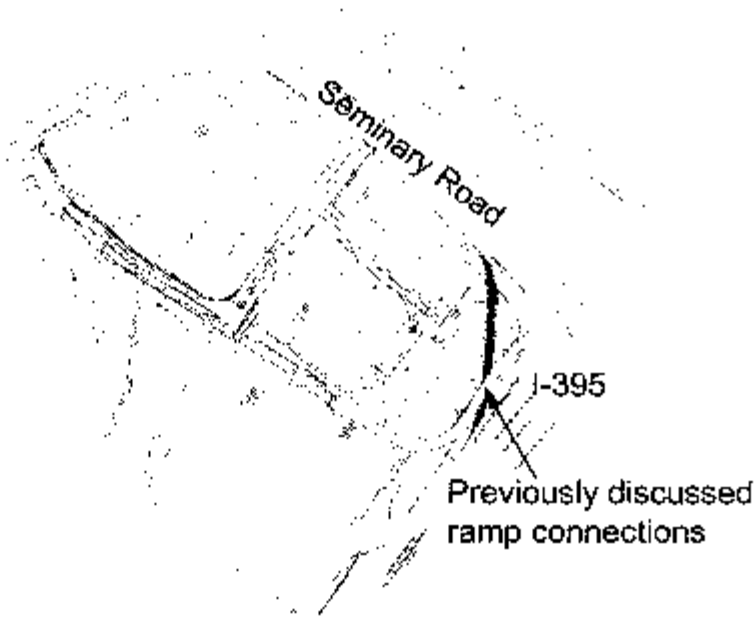
Note: * Ninety percent of all trips are assumed to be by automobile with the remaining 10% by transit.
* Building #6 has conceptual approval , buildings 1-5 have preliminary approval.

To mitigate the traffic impact of the development, a recommended condition of approval is to construct the following::

- One additional turn lane to provide a total of three left turn lanes from northbound Seminary Road to westbound Beauregard Street, in addition to improving pedestrian crossings and modifying the existing traffic signal at this intersection.
- Providing dual left-turn lanes from westbound Beauregard Street to southbound Mark Center Drive, in addition to pedestrian crossing and traffic signal improvements at this intersection.
- Providing dual right-turn lanes from eastbound Mark Center Drive to southbound Seminary Road, along with pedestrian crossing improvements and traffic signal modifications.
- Enhanced sidewalks, landscaping and pedestrian crossing at each of these intersections.

I- 395 INTERCHANGE:

An earlier condition of approval required that the applicant work with the City to investigate alternatives for providing for a direct connection into the project from the existing I-395 interchange with Seminary Road. The City has concluded that this direct connection is not a feasible or desirable. Further consideration of the direct ramp connection alternative is not advisable. Therefore, the applicant has fulfilled the intent and obligation of the previous condition to explore the possibility of an interchange ramp or construct comparable road improvements. The approval does not meet the interchange criteria of the Federal Highway Administration and if constructed the proposed interchange would attract a significant amount of additional traffic into the Seminary/Beauregard corridors.



PARKING:

The amount of parking is similar to comparable office developments in close proximity and is consistent with the current approval in 1999 as depicted below.

Table # 2
Parking Approvals

	Approved Parking Spaces Under DSUP#99-032	Parking Spaces Under DSUP#2003-0038
Buildings #1 and #4	1,435	1,435
Remaining Buildings	6,288	6,097
Total	7,723	7,532

Table # 3
Parking Comparison

ADDRESS	COMPLEX NAME	Parking Ratio	Rentable Building Area	Year Built
1705 N. Beauregard	The Mark Center	3.50	274,616 Addition	
13461 Sunrise Valley Drive	Dulles Park Technology Center	3.70	182,527	1999
11720 Plaza America Drive	Plaza America Tower 3	3.60	279,012	2002
1650 Tysons Boulevard	The Corporate Center at Tysons II	3.60	375,000	1989
8401 and 8405 Greensboro Drive	The Greensboro Corporate Center	3.34	418,302	2000

The above comparisons depict parking ratios that are similar to that proposed by the applicant in this case. While in concept the overall parking ratio is consistent with other office parks within the region, it is also the goal of staff to minimize single-occupancy vehicles and maximize the use of the private shuttle service and the adjoining public bus service. Staff supports the proposed development contingent upon the adoption of market rates for parking during peak hours, preferential parking for carpools and vanpools, and subsidies for mass transit.

A recommendation of approval is that the parking fees for office tenants be set at market rates to discourage single occupancy vehicles. Eliminating free parking will be a strong disincentive for single occupancy vehicles and will encourage the use of mass transit. When employees have to pay market rates for parking, many of them use mass transit.

In the case of government offices, parking is generally offered at market rate prices for the employees and is generally not incorporated as part of the lease agreement. For tenants who elect to provide free parking for employees, staff has included a recommendation of approval that requires that these tenants provide a comparable financial subsidy for employees that use mass transit. In these cases, the tenants would provide a mass transit subsidy (in addition to the amount contributed to the TMP fund) equal to one-half of the required TMP contribution for the first two (2) years of the building's occupancy.

CONCLUSION:

The proposed amendment will provide significant public benefit by retaining additional open space through the elimination of a previously required interchange access ramp from along I-395, which would have resulted in the loss three acres of open space and woodland. The proposed amendment is consistent with the density, parking and use with the previous development special use permit. However the plan amendment provides significant enhancements that include increased open space, tree retention, enhanced building design, reduced building height, pedestrian, landscaping and street improvements and additional mass transit subsidies that amount to approximately $240,000 ($120,000/year).

EXHIBIT NO. 1

12
1-24-04

Docket Item # 10
SPECIAL USE PERMIT # 2003-0037
Mark Center

Planning Commission Meeting
January 6, 2004

ISSUE: Consideration of a request to amend the transportation management plan for Mark Center Plaza IA and IB.

APPLICANT: The Mark Winkler Company

LOCATION: 1897 North Beauregard Street

ZONE: CDD/Coordinated Development District

PLANNING COMMISSION ACTION, JANUARY 6, 2003: On a motion by Mr. Dunn, seconded by Mr. Komoroske, the Planning Commission voted to recommend approval subject to all applicable codes and ordinances and the staff recommendations. The motion carried on a vote of 7 to 0.

Reason: The Planning Commission agreed with the staff analysis and conditions. The Planning Commission acknowledged the citizen concerns for traffic impacts. The Planning Commission also cited that the proposed amendment was consistent with prior approvals and was not increasing development from what had been previously approved. On the issue of traffic, the Planning Commission believed that the proposed alternative roadway improvements would be sufficient to accommodate traffic being generated by the proposed development.

Speakers:

Mr. Howard Middleton, attorney, represented the application.

Richard Somers, 5000 Heritage Lane spoke on behalf of Seminary Park Civic Association in support of the application and indicated a desire to participate in the joint traffic study committee.

Lynn Bostain, President of Seminary West Civic Association, spoke in opposition expressing specific need for an independent traffic analysis. In addition she also cited concerns regarding the number of increased travel lanes at I–395, safety of the proposed triple lefthand turn onto N. Beauregard St. from Seminary Rd. and additional traffic from the proposed office project.

Stephen Dujack, President of Dowden Terrace Civic Association, spoke in opposition citing that the I-395 interchange should be retained as an option. He requested that the application be deferred to

allow for examination of other traffic options.

Susan Gibson, Fillmore Avenue, spoke in opposition citing concern for cut-through traffic and the need for a larger-scale traffic study of the area.

David Dexter, Westridge Homeowners Association, spoke in opposition stating that there is too much parking being provided and that there appears to be a disconnect between the number of projected peak hour trips versus the number of parking spaces. Also supported the request for an independent traffic analysis.

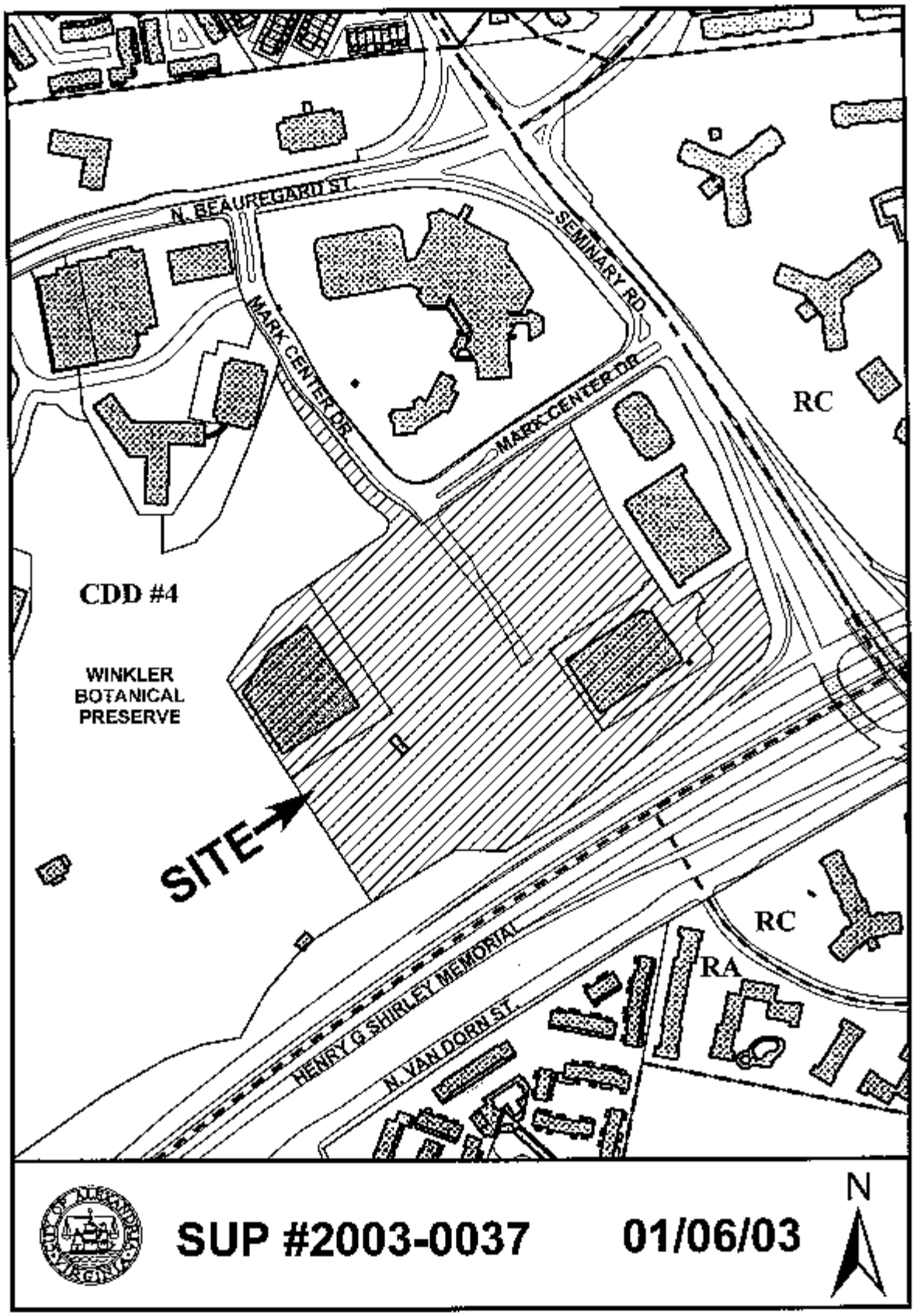
Genny Bowden, Beauregard Manor Homeowners Association and North Morgan Street Traffic Committee, spoke in opposition citing the need for an independent traffic analysis.

Jonathan Johnson, 319 Fillmore Avenue, spoke in opposition citing a need for exploring alternatives and the need for an independent traffic analysis.

Richard Kain, resident, spoke in support of the application but expressed concerns with traffic city-wide. He inquired as to how many other projects are out there and the need for the City needs to be more proactive with regard to traffic analysis.

Jack Sullivan, resident, spoke in support of the application and that it was consistent with the planning efforts and requirements of the CDD plan that was adopted 1992.

Theresa Pugh, 2313 North Tracy Street, spoke in opposition expressing concern for background traffic and the need for an independent traffic study.


N. BEAUREGARD ST.
SEMINARY RD.
MARK CENTER DR.
MARK CENTER DR.
RC
CDD #4
WINKLER
BOTANICAL
PRESERVE
SITE
RC
RA
HENRY G SHIRLEY MEMORIAL
N. VAN DORN ST.
SUP #2003-0037
01/06/03
N

Staff Recommendation:

Staff recommends **approval** of the transportation management plan as outlined within the *DSUP # 2002-0038* staff report and conditions.

Staff Analysis:

Refer to the *DSUP # 2002-0038* staff report for a detailed analysis of the transportation management plan.

STAFF:

Eileen P. Fogarty, Director, Department of Planning and Zoning;
Jeffrey Farner, Chief, Development;
Gregory Tate, Urban Planner III;

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PLANNING & ZONING

MARK CENTER PARCEL IA AND IB
TRAFFIC IMPACT STUDY
AND
TRANSPORTATION MANAGEMENT PLAN

Prepared for:
The Mark Winkler Company

Prepared by:
Wells & Associates, LLC

March 31, 2003

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MARK CENTER PARCEL IA AND 1B
TRAFFIC IMPACT STUDY
AND
TRANSPORTATION MANAGEMENT PLAN

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MARK CENTER PARCEL IA
TRAFFIC IMPACT STUDY
AND
TRANSPORTATION MANAGEMENT PLAN

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TRAFFIC IMPACT STUDY

INTRODUCTION

Purpose

This report presents a Traffic Impact Study (TIS) and Transportation Management Plan (TMP) of Mark Center Parcel 1B. Mark Center is located west of Seminary Road and north of I-395, in the City of Alexandria, as shown on Figure 1.

The Mark Winkler Company proposes to develop Parcel 1B with approximately 374,616 S.F. of office space. The adjacent Parcel 1A was previously approved by the City of Alexandria. Approximately 1,368,500 S.F. of approved space remains to be developed on Parcel 1A. This TIS/TMP evaluates the cumulative traffic impacts of developing a total of 1,743,116 square feet (S.F.) of office space on Parcel 1A and 1B.

Scope

The scope of this TIS/TMP was based on previous Parcel 1A traffic studies, which were specified by the City of Alexandria. This study evaluates an alternative set of roadway improvements to those considered in previous studies.

Specific tasks undertaken in this TIS/TMP included:

1. A field reconnaissance of site access opportunities and constraints.

2. Counts of existing AM and PM peak period traffic at seven (7) key off-site intersections.

3. Analysis of existing peak hour levels of service.

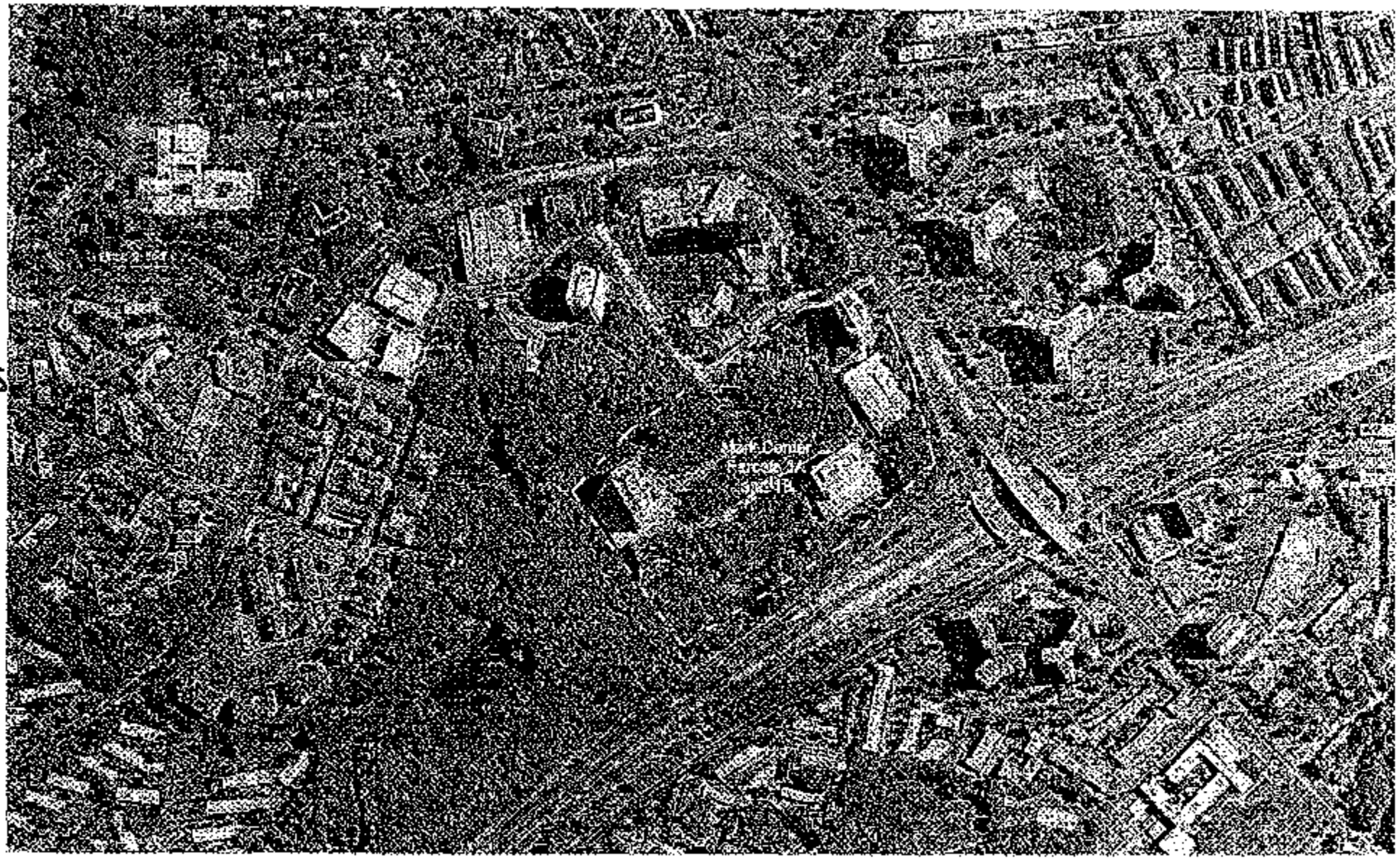

Figure 1
Site Location

North
Schematic

Mark Center Parcels 1A and 1B
Alexandria, Virginia

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4. Estimation of the number of AM and PM peak hour trips that would be generated by buildout of Parcels 1A and 1B and leasing presently vacant space in existing buildings.

5. Analysis of intersection levels of service, with and without buildout of Parcel 1B.

6. Identification of road improvements required to adequately accommodate buildout of Parcels 1A and 1B.

The following intersections were included in this TIS/TMP:

1. North Beauregard Street/Mark Center Drive.

2. North Beauregard Street/Seminary Road.

3. Seminary Road/Mark Center Drive.

4. I-395 Southbound On-Ramp/Seminary Road.

5. I-395 Southbound Off-Ramp/Seminary Road.

6.. I-395 Northbound On-Ramp/Seminary Road.

7. I-395 Northbound Off-Ramp/Seminary Road.

Data Sources

Sources of data for this TIS/TMP included the City of Alexandria; the Alexandria West Small Area Plan; traffic data collected and field surveys conducted by Wells & Associates; the Institute of Transportation Engineers (ITE); the Manual on Uniform Traffic Control Devices (MUTCD); the Highway Capacity Manual (HCM); previous Mark Center traffic impact studies and transportation management plans; The Mark Winkler Company; and other material in the Wells & Associates archives.

Conclusions

The conclusions of this TIS/TMP are as follows:

1. *Parcels 1A and 1B are well-served by a connected network of public streets and transit services.*

2. *The streets and intersections in the site vicinity are heavily-traveled but currently function at acceptable levels of service during peak hours.*

3. *Releasing presently vacant office space at 1801 and 2001 North Beauregard Street would add 451 AM peak hour trips and 420 PM peak hour trips to the public road network.*

4. *Mark Center Parcel 1A would generate an additional 1,350 AM peak hour trips, 1,451 PM peak hour trips, upon completion and full occupancy.*

5. *Mark Center Parcel 1B would generate an additional 481 AM peak hour trips, and 449 PM peak hour trips, upon completion and full occupancy.*

6. *All study intersections are forecasted to operate at an overall level of service (LOS) "D" or better during both the AM and PM peak hours, with the additional traffic generated by full buildout and occupancy of Parcels 1A and 1B, with the following road improvements:*

   a. *Construction of a third left turn lane from northbound Seminary Road to westbound North Beauregard Street.*
   b. *Construction of a second westbound-to-southbound left-turn lane at the North Beauregard Street/Mark Center Drive intersection.*
   c. *Construction of a second eastbound-to-southbound right turn lane from Mark Center Drive to Seminary Road.*

BACKGROUND DATA

Street Network

Existing Network. Regional access to Mark Center is provided by I-395, Seminary Road, and North Beauregard Street. Local access to Parcel 1A and 1B is provided by Mark Center Drive which intersects with both Seminary Road and North Beauregard Street.

Existing intersection lane use and traffic controls in the site vicinity are shown on Figure 2.

Seminary Road is a six-lane primary arterial that provides access to Mark Center from I-395 and areas east and west of I-395.

Traffic signals are located on Seminary Road at North Beauregard Street, Mark Center Drive, and I-395. These signals operate on a 100-second cycle length during the AM peak period and on a 110-second cycle length during the PM peak period.

The through movement on Seminary Road crosses above I-395 at a grade-separated interchange. Drivers exiting southbound I-395 at Seminary Road are prohibited from turning left onto Mark Center Drive by solid white pavement markings and a sign.

North Beauregard Street is a four-lane, median-divided, arterial roadway with a posted speed limit of 35 miles per hour (mph). Separate left turn lanes are provided on both approaches on North Beauregard Street at Seminary Road. Right turns are made from the outside through lanes, except on eastbound North Beauregard Street at Seminary Road.

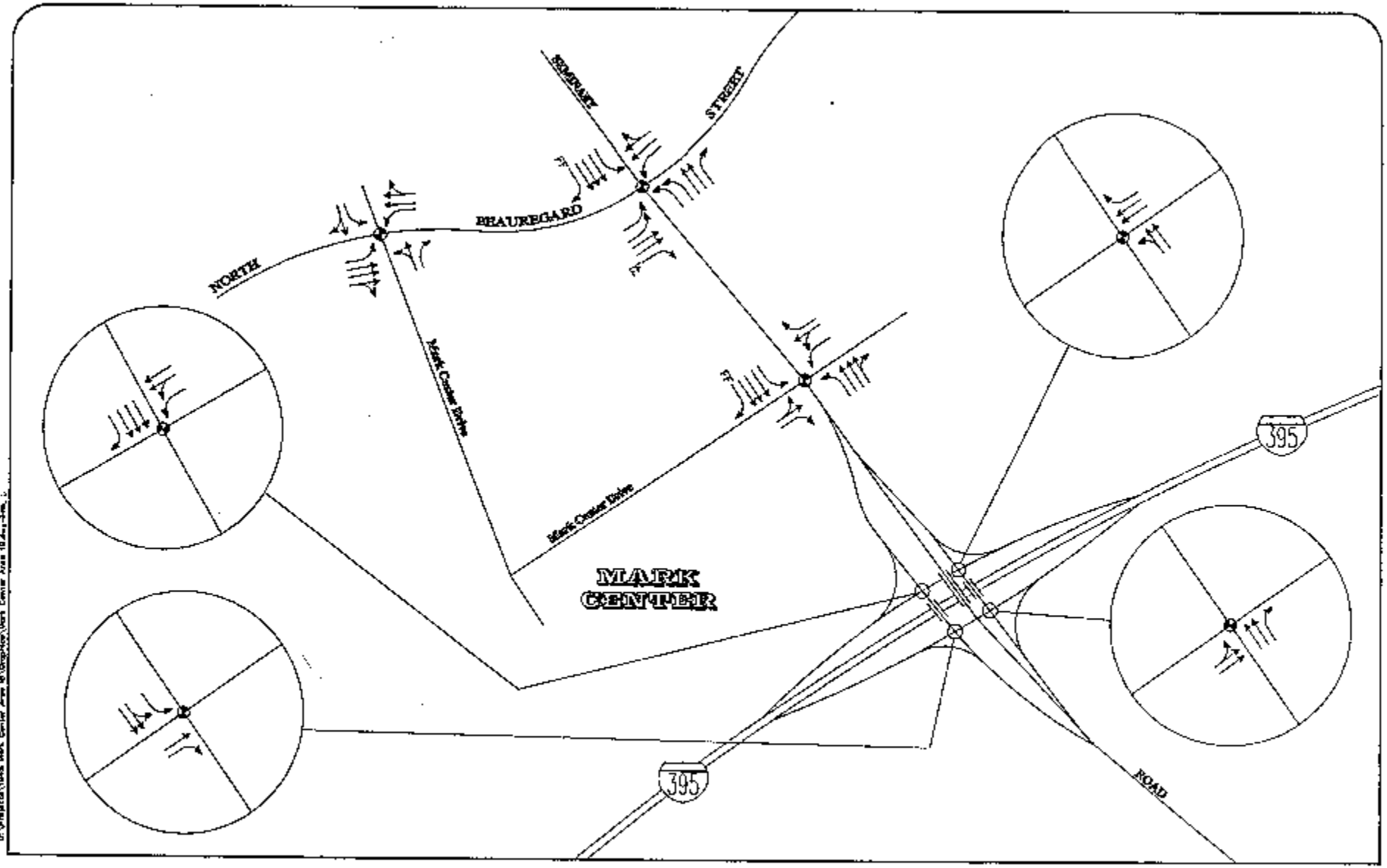

Figure 2
Existing Lane Use and Traffic Control

← Represents One Travel Lane
Signalized Intersection
FF Free Flow

North Schematic

Mark Center Parcels 1A and 1B
Alexandria, Virginia

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Future Network. Improvements proposed by The Mark Winkler Company to accommodate traffic generated by Parcel 1A and 1B include:

1. Construction of triple left turn lanes from northbound Seminary Road to westbound North Beauregard Street.
2. Construction of dual left turn lanes from westbound North Beauregard Street to southbound Mark Center Drive.
3. Construction of dual right turn lanes from Mark Center Drive to Seminary Road.

The Mark Winkler Company has also preserved sufficient land for a right-of-way to allow construction of a roadway that would carry inbound traffic only from the southbound I-395 on ramp. This ramp would be used by traffic that approaches from both the north and south on I-395 and from the east on Seminary Road. In addition, non-site traffic from I-395 that would otherwise turn left from Seminary Road to Beauregard Street could use this ramp as an alternate route.

It is not anticipated that funding and construction of this ramp would be in place prior to the construction and occupancy of Parcels 1A and 1B. Thus, the alternative at-grade improvements to Seminary Road and North Beauregard Street, listed above, are proposed instead to accommodate Parcels 1A and 1B traffic.

Transit Services

Overview. Metro and DASH provide excellent bus service on North Beauregard Street. Two (2) bus lines connect the proposed office development with the Van Dorn Street, King Street, and Pentagon Metro Stations. Metrobus Line 7: Lincolnia-North Fairlington and the DASH A.T. 2 Red line operate on North Beauregard Street and Seminary Road. The Mark Winkler Company offers shuttle bus service to the Pentagon Metro Station as part of the Mark Center TMP.

Metrobus Service. Four (4) branches of the Metrobus Line 7 serve Orleans Village, Landmark Center, Lincolnia, Southern Towers, North Fairlington, Shirlington, and the Pentagon Metro Station. This line operates seven (7) days a week. On weekdays, it operates from approximately 5:30 AM to 12:00 AM, at five- to ten-minute peak period headways and 30-minute off-peak period headways. On Saturdays, it operates from 6:30 AM to 12:00 AM, at 30-minute headways. On Sundays, it operates from 8:00 AM to 12:00 AM, at 60-minute headways.

DASH Service. The DASH A.T. 2 Red line connects Mark Center with Old Town via Seminary Road, Janney's Lane, and King Street. This line operates seven (7) days a week. On weekdays, it operates from approximately 5:40 AM to 10:25 PM at 30-minute headways. On Saturdays, it operates from 7:30 AM to 11:00 PM, at 30-minute headways. On Sundays, it operates from 8:30 AM to 6:30 PM, at 60-minute headways. DASH passes are sold at the Crestar Bank in the nearby shops at Mark Center (formerly known as Hamlet Shopping Center).

Shuttle Bus Service. The Mark Winkler currently offers shuttle bus service between Mark Center and the Pentagon Metro Station. This service operates during weekdays between 6:00 AM and 7:10 PM. Service at 15-minute headways is provided during the morning peak period (6:00 to 9:00 AM) and at 20-minute headways during the evening peak period (3:30 to 7:10 PM). An internal shuttle is provided during the lunch areas to transport office workers to area restaurants and shopping areas.

Existing Traffic Volumes

Counts of existing peak hour traffic were conducted by Wells & Associates at all of the study intersections. These counts are presented in Appendix A and summarized on Figure 3.

Figure 3 shows that Seminary Road presently carries approximately 3,700 to 4,500 vehicles per hour (vph) in both directions between I-395 and Mark Center Drive during peak hours.

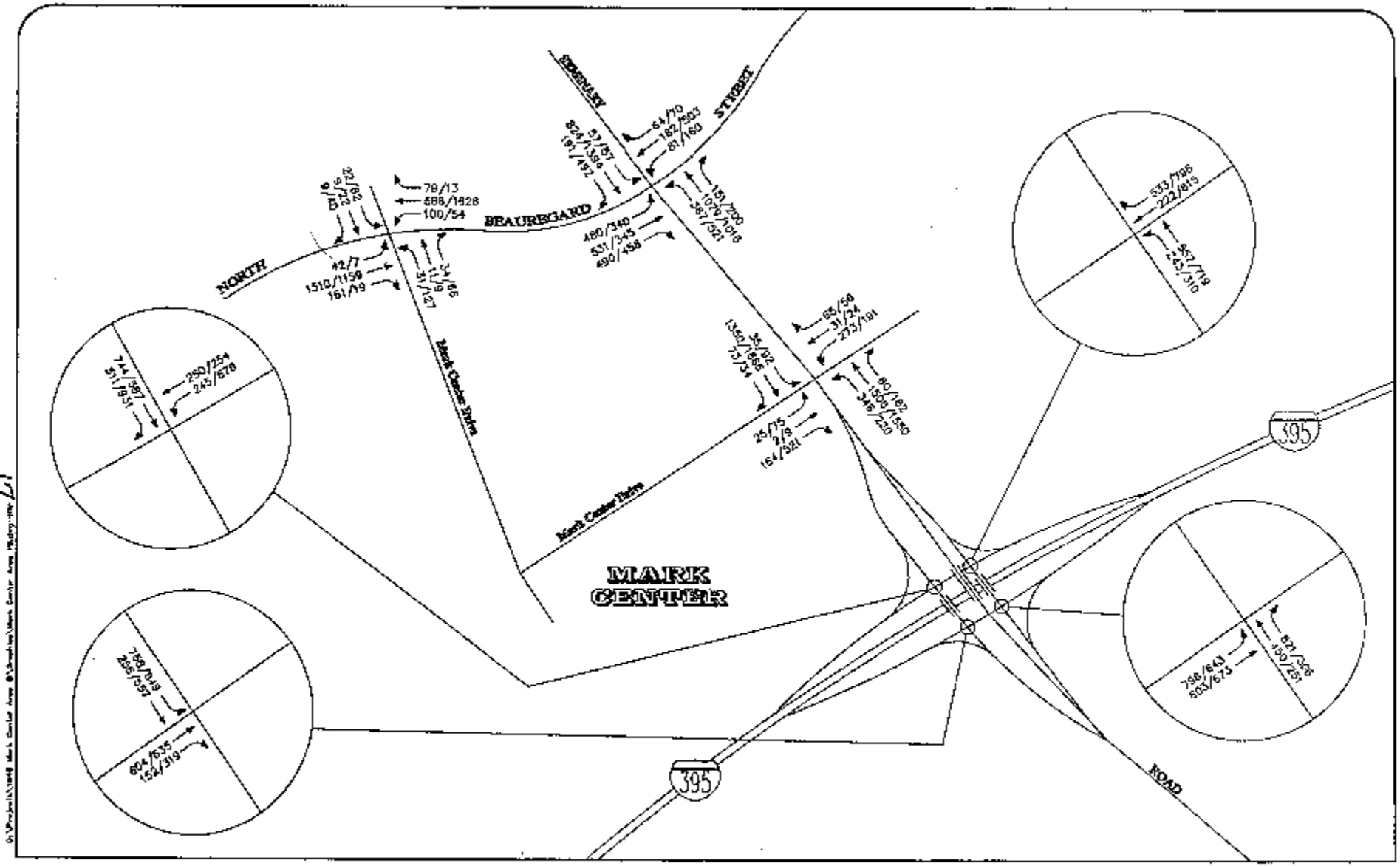

Figure 3
Existing Traffic Volumes

AM PEAK HOUR
000/000
PM PEAK HOUR

North
Schematic

Mark Center Parcels 1A and 1B
Alexandria, Virginia

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North Beauregard Street west of Seminary Road presently carries approximately 2,100 to 2,700 vph in both directions during peak hours.

ANALYSIS

Existing Levels of Service

Existing levels of service were calculated at the seven (7) key off-site intersections based on the existing lane use and traffic control shown on Figure 2, the existing traffic counts shown on Figure 3, existing signal phasings and timings, the 2000 Highway Capacity Manual (HCM) methodology, and the Synchro5, Signal Coordination software. The results are contained in Appendix B and summarized in Table 1.

Table 1 shows that all seven (7) key off-site intersections currently operate at overall acceptable levels of service during both the AM and PM peak hours.

The North Beauregard Street/Mark Center Drive intersection currently operates at an acceptable LOS "B" during both the AM and PM peak hours.

The Seminary Road/North Beauregard Street intersection currently operates at an overall acceptable LOS "D" during both the AM and PM peak hours. The westbound North Beauregard Street approach operates at capacity during the PM peak hour, based on current signal timings.

The Seminary Road/Mark Center Drive intersection currently operates at an overall acceptable level of service (LOS) "C" during the AM peak hour and at LOS "D" in the PM peak hour. Traffic exiting Mark Center operates at capacity during the PM peak hour.

The four (4) intersections of I-395 and Seminary Road currently operate at an overall LOS "C" or better during both the AM and PM peak hours.

Table 1
Mark Center Parcels 1A and 1B
Peak Hour Intersection Levels of Service

Intersection	Type of Control	Existing Traffic Volumes AM (100 sec)	Existing Traffic Volumes PM (110 sec)	2005 Background Traffic Volumes Optimized Conditions[1] AM (100 sec)	2005 Background Traffic Volumes Optimized Conditions[1] PM (110 sec)	2005 Future Traffic Volumes Optimized Conditions[1] AM (100 sec)	2005 Future Traffic Volumes Optimized Conditions[1] PM (110 sec)
1 North Beauregard Street/Mark Center Drive	Signal						
Eastbound		B(10.8)	A(8.6)	D(45.4)	D(47.2)	D(51.7)	D(48.0)
Westbound		B(14.1)	B(11.1)	B(12.6)	A(8.6)	B(16.7)	A(9.3)
Northbound		D(38.0)	D(36.7)	C(32.7)	C(27.8)	C(32.1)	C(33.6)
Southbound		D(35.9)	D(37.2)	D(43.4)	C(32.6)	D(42.8)	C(31.9)
Overall Intersection		**B(13.0)**	**B(13.1)**	**C(30.2)**	**C(24.8)**	**C(34.4)**	**C(26.7)**
2 North Beauregard Street/Seminary Road	Signal						
Eastbound		D(40.9)	D(51.0)	D(53.9)	C(31.1)	D(52.0)	C(31.8)
Westbound		D(38.6)	F(84.4)	D(43.0)	D(53.0)	D(45.1)	D(53.6)
Northbound		C(34.3)	D(49.8)	B(12.5)	B(19.2)	B(19.3)	B(19.1)
Southbound		C(25.1)	C(29.4)	D(45.8)	D(47.9)	D(45.7)	D(48.7)
Overall Intersection		**C(34.3)**	**D(46.9)**	**C(30.9)**	**C(34.3)**	**C(33.8)**	**C(34.6)**
3 Seminary Road/Mark Center Drive	Signal						
Eastbound		C(29.1)	F(160.0)	B(16.1)	D(47.6)	B(14.0)	D(54.9)
Westbound		D(43.6)	D(48.7)	D(49.3)	D(51.6)	D(50.2)	E(65.3)
Northbound		C(34.5)	B(19.8)	C(28.3)	C(30.3)	C(34.9)	D(39.7)
Southbound		B(11.9)	D(36.7)	A(5.4)	C(20.4)	A(7.3)	D(53.1)
Overall Intersection		**C(26.8)**	**D(46.0)**	**C(21.7)**	**C(29.8)**	**C(26.0)**	**D(49.5)**
4 I-395 SB Off-Ramp/Seminary Road	Signal						
Westbound		C(22.2)	C(21.5)	C(22.2)	C(23.7)	C(22.2)	C(23.7)
Northbound		B(17.5)	C(22.6)	C(21.3)	B(11.6)	C(22.8)	B(11.2)
Overall Intersection		**B(18.5)**	**C(22.2)**	**C(21.5)**	**B(16.0)**	**C(22.7)**	**B(15.7)**
5 I-395 SB On-Ramp/Seminary Road	Signal						
Westbound		C(26.3)	B(10.7)	C(23.5)	B(13.9)	C(22.7)	B(14.2)
Southbound		B(10.0)	C(26.4)	A(3.7)	A(8.0)	A(8.1)	A(8.1)
Overall Intersection		**B(16.5)**	**B(16.8)**	**B(11.3)**	**B(11.0)**	**B(13.7)**	**B(11.6)**
6 I-395 NB Off-Ramp/Seminary Road	Signal						
Eastbound		B(17.7)	B(16.2)	C(33.5)	C(21.6)	D(48.4)	C(22.1)
Southbound		B(13.3)	D(38.3)	B(16.1)	D(41.5)	B(16.3)	D(50.3)
Overall Intersection		**B(15.2)**	**C(29.4)**	**C(24.7)**	**C(34.1)**	**C(32.7)**	**D(40.0)**
7 I-395 NB On-Ramp/Seminary Road	Signal						
Eastbound		C(21.7)	C(21.3)	C(27.3)	D(38.1)	D(47.5)	D(47.6)
Northbound		C(22.9)	C(25.9)	C(22.9)	C(22.4)	C(22.9)	C(22.4)
Overall Intersection		**C(22.0)**	**C(21.3)**	**C(26.3)**	**D(36.0)**	**D(42.6)**	**D(44.4)**

Notes:
1 Optimized conditions include reallocation of green time to critical movements and signal coordination adjustments as performed by Synchro.

Long queues of vehicles were observed on the northbound I-395 off-ramp due to: (1) heavy traffic volumes proceeding across the southbound Seminary Road lanes and turning left onto northbound Seminary Road and (2) existing traffic signal timing and phasing. This northbound off-ramp movement operates poorly during the AM peak hour due to weaving movements between the closely-spaced intersections, including the HOV ramp intersection with westbound Seminary Road. These movements contribute to delays that are not reflected in the HCM analysis.

Re-assignment of Existing Traffic Volumes

As noted above, some motorists accessing Mark Center from I-395 execute an illegal turning maneuver, turning right from the westbound I-395 off ramp to northbound Seminary Road and then almost immediately turning left at Mark Center Drive.

Traffic counts conducted by Wells & Associates indicate that 227 AM peak hour motorists and 96 PM peak hour motorists currently execute this illegal maneuver. For purposes of this analysis, all of these turning movements were reassigned to access Mark Center Drive via North Beauregard Street. Figure 4 shows the reassigned existing AM and PM peak hour traffic volumes.

If, in the future, enforcement measures are not sufficient to eliminate this illegal maneuver, geometric modifications may be necessary. These geometric modifications could include the extension of the left turn lane from Seminary Road to Mark Center Drive to a point south of the gore area between the Seminary Road through traffic lanes and the Seminary Road lanes carrying I-395 ramp traffic, and construction of a raised concrete median between the Seminary Road left turn lane and through lanes.

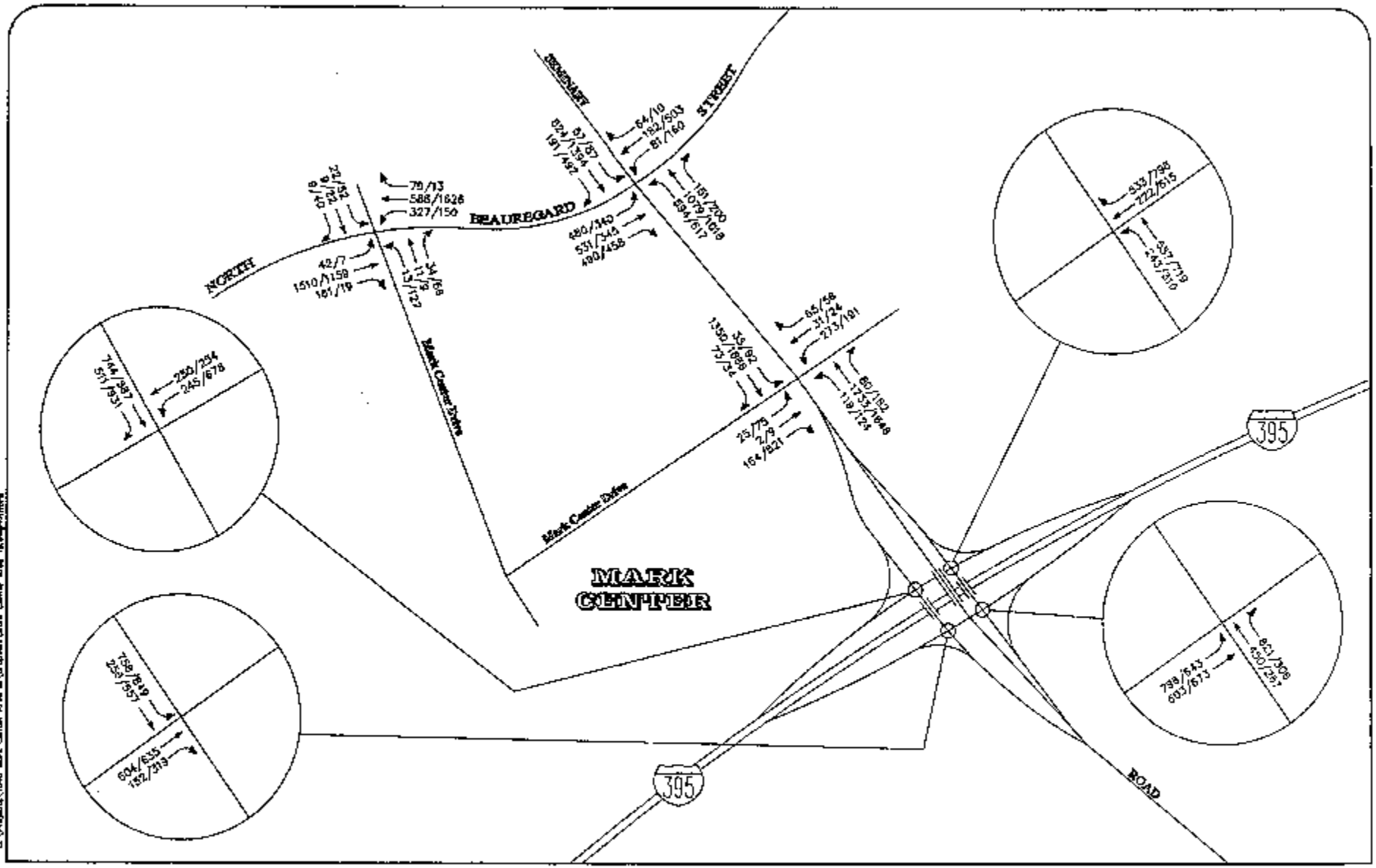

Figure 4
Existing Reasssigned Traffic Volumes

Mark Center Parcels 1A and 1B
Alexandria, Virginia

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Ambient Traffic Growth

Traffic counts at the Seminary Road/North Beauregard Street intersection collected in May 2002 were compared to counts collected in June 1994. This comparison indicates an overall decrease in peak hour traffic volumes of 2.74 percent over the eight (8) year time frame, or a reduction of 0.34 percent per year.

Based on these historic traffic trends, no ambient traffic growth was considered in this analysis.

Traffic Generated by Other Approved Developments

This traffic study takes into explicit account traffic that would be generated by the 1,368,500 S.F. of office space approved on Parcel 1A and the releasing of approximately 346,000 S.F of office space in two Mark Center buildings located at 1801 and 2001 North Beauregard Street.

The number of AM and PM peak hour trips that would be generated by these developments were estimated based on standard ITE trip generation rates and a 10 percent transportation management plan (TMP) trip reduction. This reduction is based on the existing and proposed TMP, including the existing and proposed expansion of the Mark Center shuttle service, the availability of transit bus service to the site, and other TMP measures.

As shown in Table 2, these developments are expected to generate a total of 1,801 AM peak hour trips, and 1,872 PM peak hour trips, upon completion and full occupancy.

Table 2
Peak Hour Trip Generation
Mark Center Phase 1A and Existing Building Re-Leasing

Building/Land Use	Land Use	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
1801 and 2001 North Beauregard Street	Office	345,627	S.F.	441	60	501	79	387	467
Phase 1A Remaining Development	Office	1,368,500	S.F.	1,320	181	1,500	275	1,339	1,613
Transportation Management Plan Trip Reduction at 10%				(176)	(24)	(200)	(35)	(173)	(208)
Total		1,714,127	S.F.	1,585	217	1,801	319	1,553	1,872

Directions of Approach

The directional distribution of trips generated by the proposed office development was estimated based on existing traffic patterns. Approximately 38 percent of the site traffic approaches Mark Center from I-395 to the north and south, approximately 20 percent uses Seminary Road from the southeast, 20 percent uses North Beauregard Street from the southwest, 20 percent uses Seminary Road and North Beauregard Street from the northeast, and two percent approaches from the Southern Towers apartments.

Background Traffic Forecasts

Background traffic forecasts, shown in Figure 5, represent the sum of the existing reassigned traffic volumes shown in Figure 4 and traffic generated by other approved development projects assigned to the area road network based on the directional distribution discussed above.

Proposed Roadway Improvements

The approval of the full development of Mark Center Parcel 1A was conditioned by the City of Alexandria upon the construction of the right-in only access to Mark Center from the southbound I-395 on ramp or other roadway improvements that would adequately accommodate traffic generated by the proposed Parcel 1A development.

Because it is not anticipated that funding and construction of this improvement will be in place prior to the construction and occupancy of Parcel 1A, other network improvements are proposed to accommodate Parcel 1A and 1B traffic in lieu of this future improvement.

Other improvements proposed by the Mark Winkler Company to accommodate traffic generated by Parcel 1A and 1B are shown on Figure 6 and include:

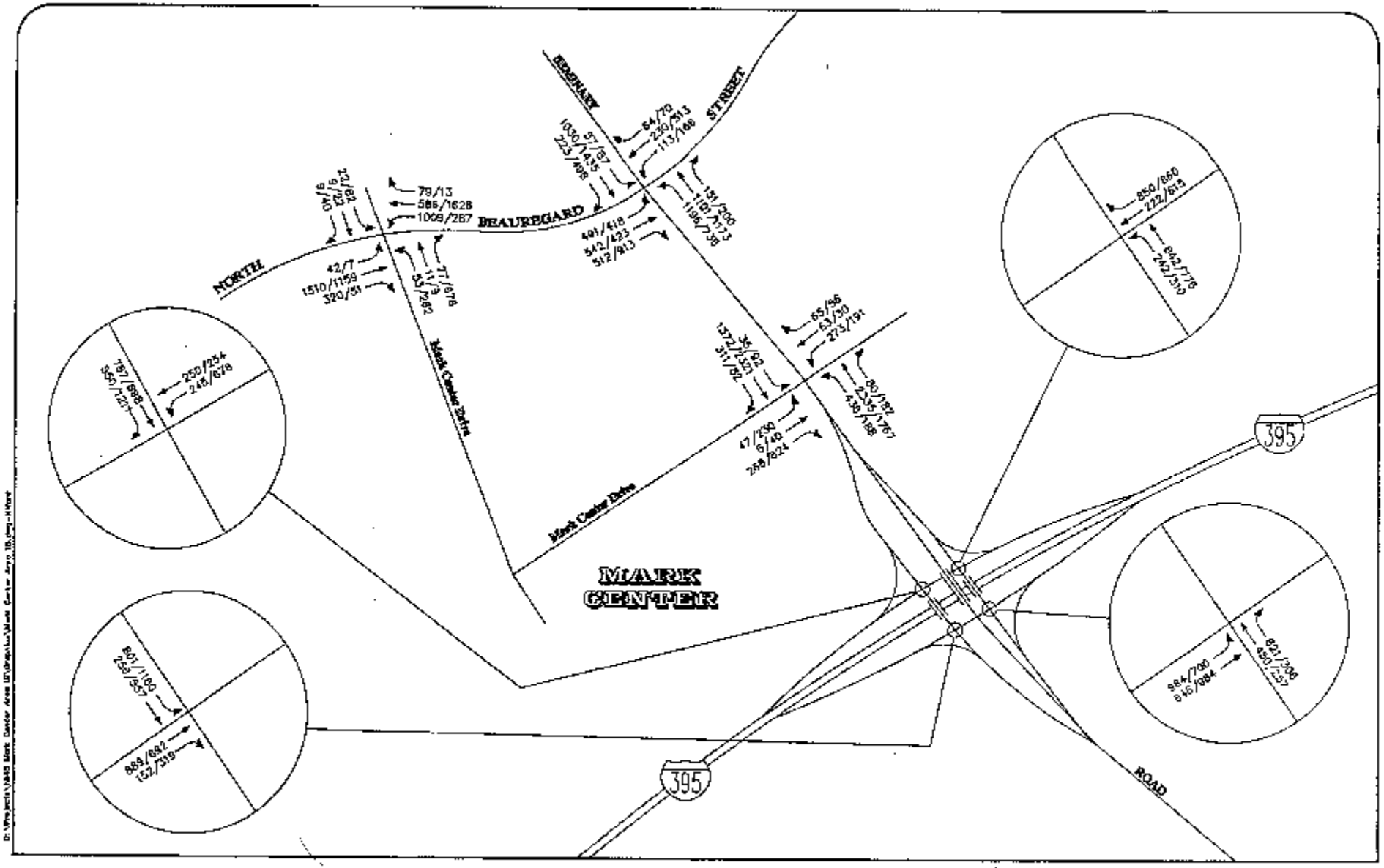

Figure 5
Background Traffic Forecasts

Mark Center Parcels 1A and 1B
Alexandria, Virginia

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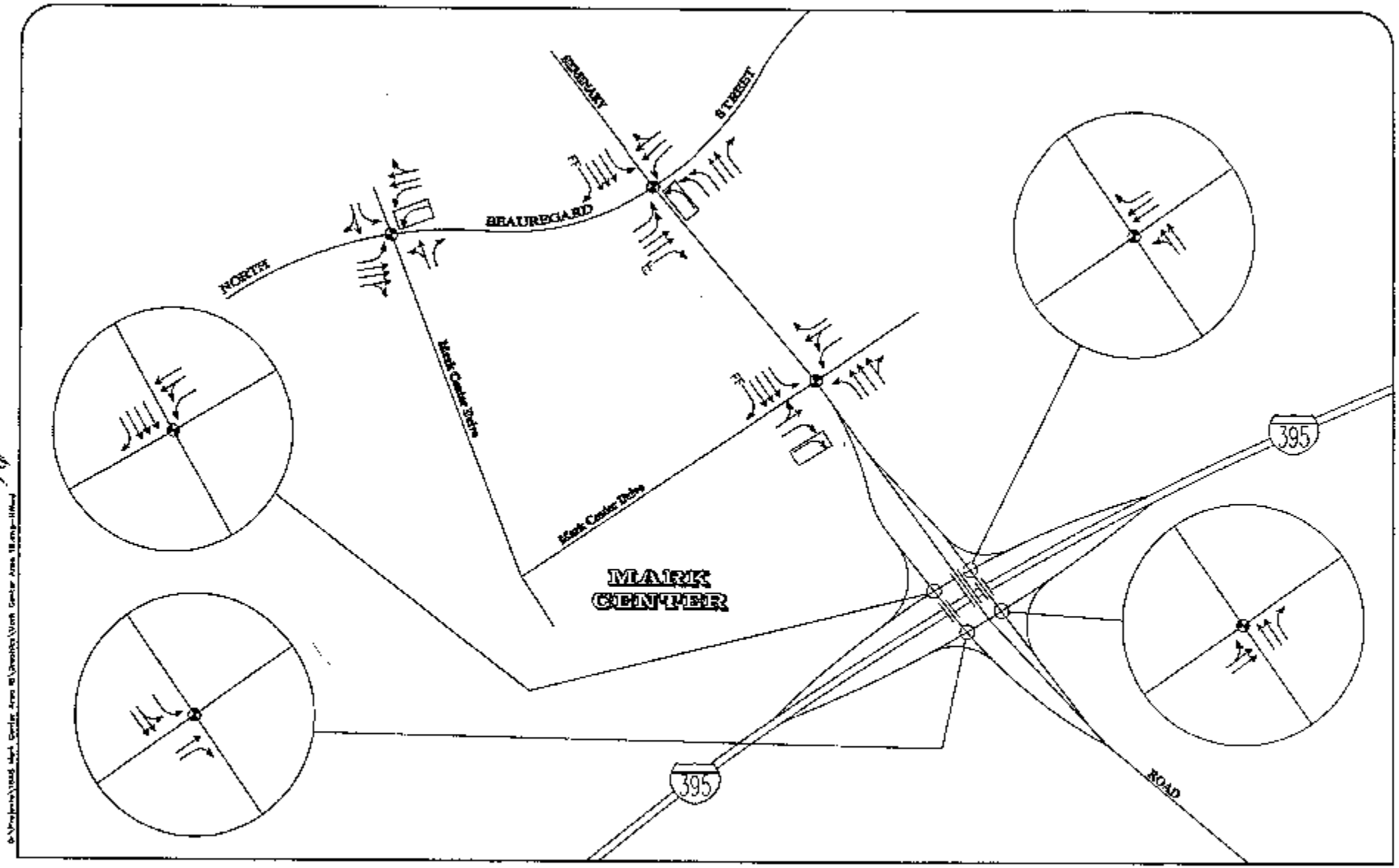

Figure 6
Future Lane Use and Traffic Control

← Represents One Travel Lane
Signalized Intersection
FF Free Flow
Improvements

North
Schematic

Mark Center Parcels 1A and 1B
Alexandria, Virginia

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1. The provision of triple left turn lanes from northbound Seminary Road to westbound North Beauregard Street and signal timing adjustments.

2. The provision of dual left turn lanes from westbound North Beauregard Street to southbound Mark Center Drive and signal timing adjustments.

3. The provision of dual right turn lanes from eastbound Mark Center Drive to southbound Seminary Road and signal timing adjustments.

Background Future Levels of Service

Future levels of service without development of Parcel 1B were calculated at the seven (7) key off-site intersections based on the proposed lane use shown on Figure 6, the background future traffic forecasts shown on Figure 5, the HCM analysis methodology, and the Synchro5, Signal Coordination Software. The results are contained in Appendix C and summarized in Table 1.

Table 1 shows that, with the proposed roadway improvements, each of the studied intersections would operate at overall acceptable levels of service during both the AM and PM peak hours. All intersection approaches would operate at LOS "D" or better during both the AM and PM peak hours. It is anticipated that long queues would persist along the northbound I-395 off-ramp but would not extend into or affect the through lanes.

Site Trip Generation

The number of AM and PM peak hour trips that would be generated by Mark Center Parcel 1B were estimated based on standard ITE trip generation rates and a 10 percent transportation management plan (TMP) trip reduction to account for the existing and proposed expansion of the Mark Center shuttle service, availability of transit bus service to Mark Center, and other TMP measures.

As shown in Table 3, Parcel 1B is expected to generate 481 AM peak hour trips, and 449 PM peak hour trips, upon completion and full occupancy.

Total Future Traffic Forecasts

The site-generated trips were assigned to the proposed roadway network based on the directional distribution discussed above. The site traffic assignment is shown on Figure 7. Those assignments were then added to the background traffic forecasts shown on Figure 5 to yield the total future traffic forecasts shown on Figure 8.

It is noted that all traffic generated by Parcel 1A and 1B approaching the site from I-395 was routed along Seminary Road to North Beauregard Street then to Mark Center Drive instead of accessing Mark Center Drive directly from Seminary Road. Inbound site traffic routing is shown on Figure 9 to illustrate this specific traffic assignment.

Geometric modifications to the Seminary Road left turn lane into Mark Center Drive may be necessary to accomplish this traffic distribution.

Total Future Levels of Service

Future levels of service with Parcel 1B were calculated at the seven (7) key off-site intersections based on the future lane use shown on Figure 6, the total future traffic forecasts shown on Figure 8, and the HCM analysis techniques. The results are contained in Appendix D and summarized in Table 1.

As shown in Table 1, all intersections are forecasted to operate at an overall acceptable LOS "D" or better during both the AM and PM peak hours with full development of Parcel 1B, and with the proposed roadway improvements at the Seminary Road/North Beauregard Street and North Beauregard Street/Mark Center Drive intersections.

Table 3
Peak Hour Trip Generation
Mark Center Phase 1B

Building/Land Use	Land Use	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
Mark Center - Phase 1B	Office	374,616	S.F.	470	64	534	85	414	499
Transportation Management Plan Trip Reduction at 10%				(47)	(6)	(53)	(8)	(41)	(50)
Total	Office	374,616	S.F.	423	58	481	76	373	449

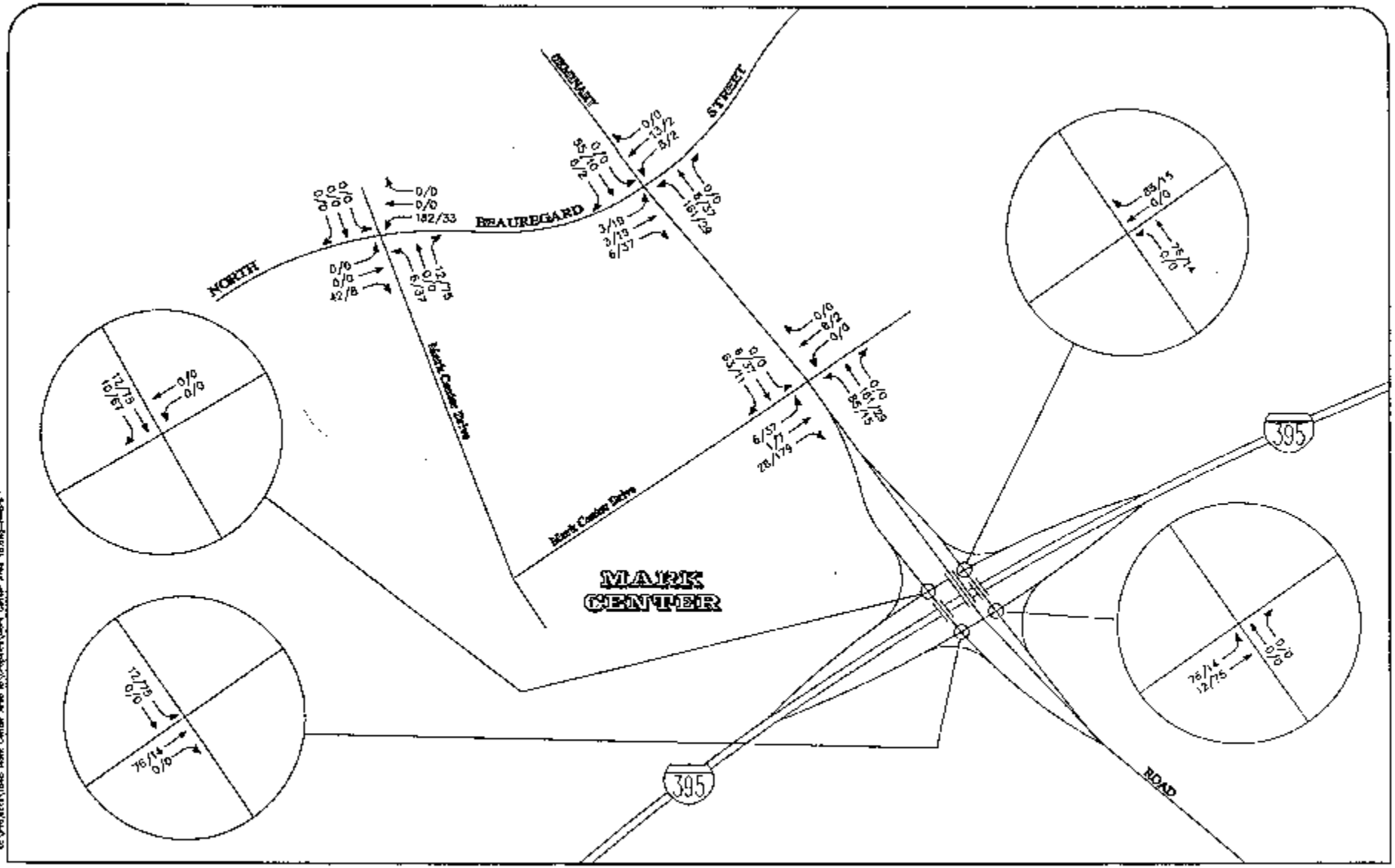

Figure 7
Parcel 1B Site–Generated Traffic Assignment

AM PEAK HOUR
PM PEAK HOUR
enter/exit

North
Schematic

Mark Center Parcels 1A and 1B
Alexandria, Virginia

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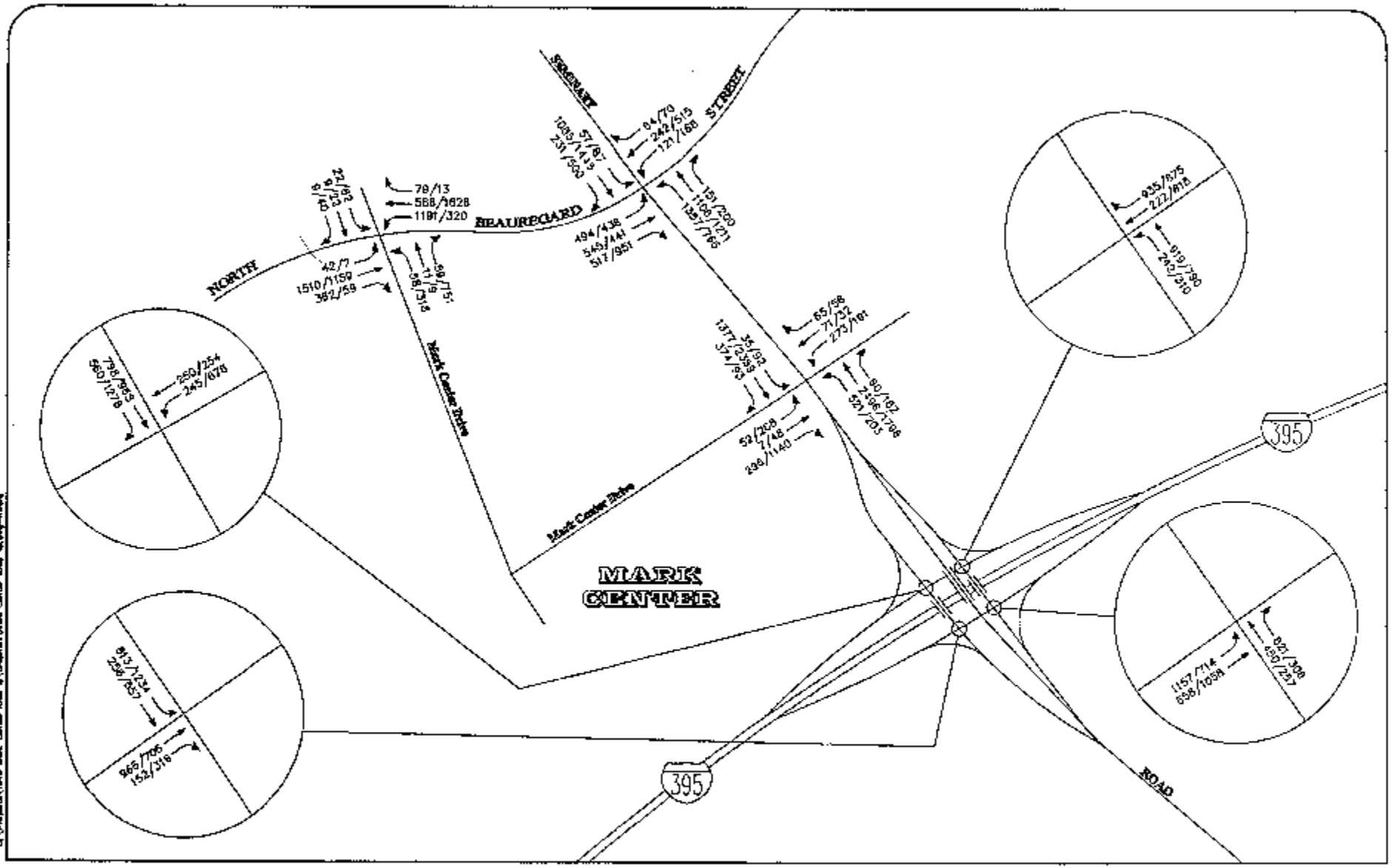

Figure 8
Total Future Traffic Forecasts

Mark Center Parcels 1A and 1B
Alexandria, Virginia

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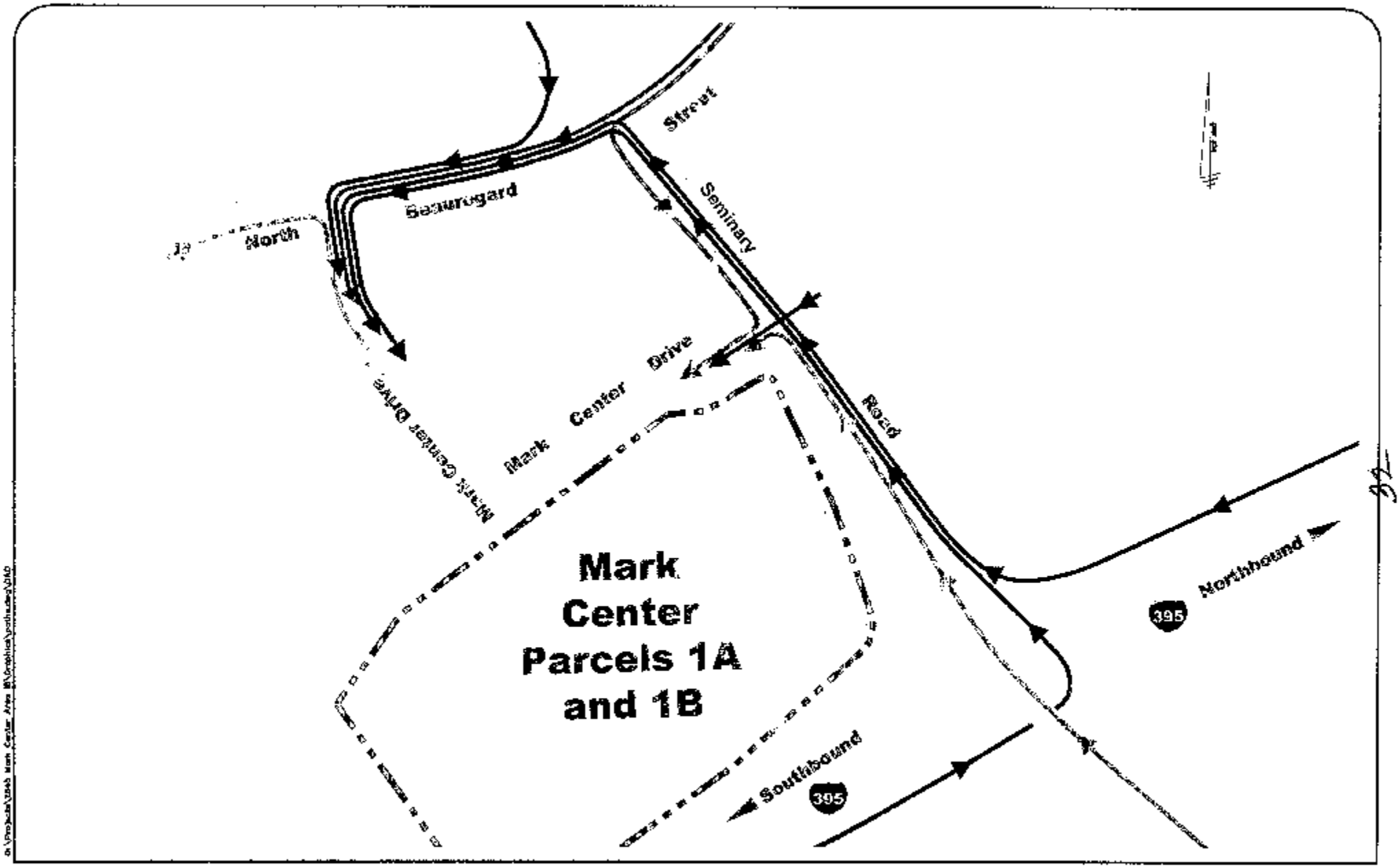

Figure 9
Inbound Site Traffic Routing

The North Beauregard Street/Mark Center Drive intersection is projected to operate at an overall acceptable LOS "C" during the AM and PM peak hours, with buildout of Parcel 1B and the roadway improvements detailed in Figure 6.

The North Beauregard Street/Seminary Road intersection is projected to operate at an overall acceptable LOS "C" during both the AM and PM peak hours. The improvements provided would decrease the overall delay at the intersection from that reported for existing conditions.

The Seminary Road/Mark Center Drive intersection will operate at an overall acceptable LOS "C" during the AM peak hour and at LOS "D" during the PM peak hour with buildout of Parcel 1B.

Parcel 1B, at buildout, would account for only 4.4 percent of all traffic entering the North Beauregard Street/Seminary Road intersection during the critical AM peak hour and only 2.4 percent of the total intersection traffic during the PM peak hour.

All intersections of Seminary Road and the I-395 ramps are forecasted to operate at LOS "D" or better during both the AM and PM peak hours. The queues observed under existing conditions would persist along the northbound I-395 off-ramp. With traffic signal timing adjustments, queues of 600 feet are forecasted during the AM peak period along the northbound I-395 off-ramp. The I-395 northbound off-ramp could be re-striped to provide one (1) exclusive through lane and one (1) combination through-right turn lane. With this change, the movements at this intersection would operate at LOS "B" during the AM peak hour and at LOS "D" or better during PM peak hour. AM peak period queues are forecasted to be reduced to 300 feet. The distance available for stacking at this intersection before queues extend into the I-395 mainline lanes is approximately 1,200 feet, thus, these queues would not extend beyond the junction of the ramp and the mainline freeway lanes. These changes would require the approval of VDOT and the Federal Highway Administration.

Queuing Analysis

Peak hour queues at key intersections were forecasted using the SimTraffic Software and the total future forecasts.[1] The results are contained in Appendix D and summarized in Table 4. Table 4 presents 95th percentile queues at buildout of Parcels 1A and 1B at the North Beauregard Street/Mark Center Drive, North Beauregard Street/Seminary Road, and Seminary Road/Mark Center Drive intersections.

Queues are not anticipated to spill over into adjacent lanes or upstream intersections. The analysis does show that during the PM peak hour, queues would develop on eastbound Mark Center Drive at Seminary Road and northbound Mark Center Drive at North Beauregard Street at two internal intersections. It is anticipated that with each signal cycle, vehicles that are part of queue at the internal intersections would move forward and then be processed through the signalized intersection.

[1] Analysis completed using Synchro/SimTraffic Software Program with project specific Origin-Destination (OD) coding.

Table 4
Mark Center Parcel 1A & 1B
Queue Analysis [1]

Intersection	Critical Study Movements	Available Storage (Feet)	2005 Future Traffic Volumes Optimized Conditions [2] AM - 100s (Feet)	PM - 110s (Feet)
1 North Beauregard Street/Mark Center Drive				
	Westbound			
	LT - 1	200'	228'	111'
	LT - 2	670'	478'	123'
	Thru/Rt-1,2	670'	13'	95'
	Northbound			
	LT/Thru	250'	120'	267'
	Right	250'	51'	453'
2 North Beauregard Street/Seminary Road				
	Eastbound			
	LT - 1	250'	112'	122'
	LT - 2	690'	249'	218'
	Thru-1	690'	226'	276'
	Thru-2	690'	247'	174'
	Northbound			
	LT - 1	250'	201'	145'
	LT - 2	250'	243'	211'
	LT - 3/Thru	630'	379'	385'
	Thru-1	630'	385'	366'
	Thru/Rt-2	630'	306'	393'
3 Seminary Road/Mark Center Drive				
	Eastbound			
	LT	270'	62'	249'
	RT-1	270'	62'	355'
	RT-2	270'	43'	346'
	Northbound			
	LT	300'	352'	143'
	Southbound			
	Thru-1	630'	144'	245'
	Thru-2	630'	247'	392'
	Thru-3	630'	532'	507'
	RT	725'	491'	675'

Notes:
1 95th Percentile Queue Represented
Queues shown would utilize taper area (typ. 100') without spillover to adjacent lane.
Additional storage area provided beyond internal intersection.

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CONCLUSIONS

The conclusions of this traffic study are as follows:

1. Parcels 1A and 1B are well-served by a connected network of public streets and transit services.

2. The streets and intersections in the site vicinity are heavily-traveled but currently function at acceptable levels of service during peak hours.

3. The releasing of vacant office space at 1801 and 2001 North Beauregard Street will add 451 AM peak hour trips and 420 PM peak hour trips to the public road network.

4. Mark Center Parcel 1A will generate an additional 1,330 AM peak hour trips, 1,431 PM peak hour trips, upon completion and full occupancy.

5. Mark Center Parcel 1B will generate an additional 481 AM peak hour trips and 449 PM peak hour trips upon completion and full occupancy.

6. All study intersections are forecasted to operate at level of service (LOS) "D" or better during both the AM and PM peak hours, with the additional traffic generated by full buildout and occupancy of Parcels 1A and 1B, with the following road improvements:

   a. Construction of a third left turn lane from northbound Seminary Road to westbound North Beauregard Street.

   b. Construction of a second westbound-to-southbound left-turn lane at the North Beauregard Street/Mark Center Drive intersection.

   c. Construction of a second eastbound-to-southbound right turn lane from Mark Center Drive to Seminary Road.

TRANSPORTATION MANAGEMENT PLAN

INTRODUCTION

Background

This section presents a Transportation Management Plan (TMP) for Mark Center Plaza I (Parcels 1A and 1B), as required by the City of Alexandria Ordinance No. 3204.

Objective

The Zoning Ordinance Section 11-700 requires that office developments such as Mark Center Plaza I obtain a transportation management special use permit.[2] The goal of a TMP is to "reduce the proportion of single occupancy vehicle (SOV) trips and to increase the use of transit, carpools, and vanpools, during the peak hours, or to spread the number of SOV trips outside of the peak hours."[3]

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[2] Zoning Ordinance of the City of Alexandria, Section 11-700.

[3] City of Alexandria, Transportation Management Plans: Administrative Guidelines and Procedures for Preparation of Traffic Impact Studies and Transportation Management Plans for Ordinance No. 3204, June, 1988.

Development Program

The Mark Winkler Company proposes to develop 1,743,116 S.F. of office space on Mark Center Parcels 1A and 1B.

TMP STRATEGIES

Overview

The Mark Center TMP Plaza I TMP will include the following strategies[4]:

1. Designation of a Transportation Management Plan Coordinator (TMPC).

2. Provision of shuttle bus service to the Pentagon Metrorail station.

3. Reservation of parking spaces for flex-time employees.

4. Reservation of convenient parking spaces for carpools and vanpools.

Each of these components is described below.

Transportation Management Plan Components

1. Transportation Management Plan Coordinator. The Mark Winkler Company's Commercial Property Manager of Alexandria properties has been designated as the Transportation Management Plan Coordinator (TMPC) for Mark Center.
Specific duties of the TMPC include:

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[4]For details, see Special Use Permit #95-0143 dated December 16, 1995.

1. Coordination and operation of the Mark Center shuttle bus service connecting Mark Center with the Pentagon Metrorail station during peak commuter time periods and providing on-site service during mid-day hours.

2. Publicizing and promoting the use of transit, carpools/vanpools, and a staggered work hour program, and other components of the TMP with current and prospective tenants and employees.

3. Displaying and distributing information about transit, carpool/vanpool, and other TMP programs.

4. Administering a ridesharing program.

5. Providing annual reports to the City of Alexandria, including an assessment of the effects of TMP activities on Mark Center shuttle ridership, carpooling, vanpooling, other transit rider-ship, and peak hour traffic, as reflected by an annual survey of employees; an accounting of receipts and disbursements of the TMP account; and a work program for the following year.

6. Administering on-site sale of appropriate transit fare media, subject to agreement by providers of transit services to furnish such media on consignment. This requirement may be satisfied by agreement by another party to sell such transit media at a location convenient to the project.

7. Monitoring and enforcing the use of reserved parking spaces for carpools and vanpools.

8. Participating with other projects in the vicinity of the site and the City of Alexandria in the mutually agreed upon cooperative planning and implementation of TMP programs and activities, including the provision of enhanced bus service.

9. Encouraging office tenants to permit employees to participate in a staggered work hour program.

10. Administering other TMP activities.

The TMPC will continue to be directly responsible for all elements of the TMP and reporting to the City of Alexandria.

2. Shuttle Bus Service. The first priority of the TMP will be the continued and enhanced operation of the Mark Center shuttle bus services between Mark Center and the Pentagon Metrorail station. It is anticipated that such shuttle service may be extended to the Plaza I office uses. The additional revenues generated by Plaza I participation in the existing TMP will fund some of the additional costs incurred in extending/expanding this service.

3. Reservation of Flex-Time Parking Spaces. As dictated by demand, up to five (5) percent of the new parking spaces planned to serve Plaza I will be reserved until 9:00 AM for flex-time workers. To the extent that a garage is built in phases, the reserved spaces will be provided in proportion to the number of spaces available.

4. Reservation of Carpool/Vanpool Parking Spaces. As dictated by demand, up to five (5) percent of the new parking spaces planned to serve Plaza I will be reserved until 10:30 AM for carpools and vanpools. After 10:30 AM, these spaces will be available for general use. To the extent that a garage is built in phases, the reserved spaces will be provided in proportion to the number of spaces available.

Transportation Management Plan Fund

Purpose. In 1988, a TMP fund was established by the Mark Winkler Company. This fund is used to provide on-site employee shuttle bus service, on-site employee transit fare media discounts, cash prizes, and for other TMP activities as proposed by the applicant and approved by the Director of T&ES.

Funding Level. The TMP fund shall be funded by the Mark Winkler Company at the current annual rate per net occupied square foot of commercial space for the Plaza I office buildings.

Construction of Plaza I will likely be in phases. The obligation to pay the TMP contribution will be on a building-by-building basis. The shuttle bus service shall take priority for the use of such TMP funds.

Use of Unencumbered Funds. Any unencumbered funds remaining in the TMP account at the end of each reporting year may be reprogrammed for the TMP activities during the ensuing year for the property that generated such excess funds or may be paid to the City for use in transit or ridesharing programs and activities.

Coordination with Other TMP's

The Mark Winkler Company will, to the extent practicable, participate with the City and other developments in the area, in cooperative planning and implementation of TMP programs, including mutually agreed upon enhancements of bus service.

TMP Modifications

Subject to approval by the Director of T&ES, the Mark Winkler Company may modify approved TMP activities or add TMP activities, provided that any changes are consistent with the goals of the TMP.

SUMMARY

The Mark Center Transportation Management Plan, office component, will consist of the following strategies:

1. Designation of a Transportation Management Plan Coordinator (TMPC).
2. Provision of shuttle bus service to the Pentagon Metrorail station.
3. Reservation of parking spaces for flex-time employees.
4. Reservation of convenient parking spaces for carpools and vanpools.

Appendix A

Existing Traffic Counts

Wells & Associates, LLC

McLean, Virginia

Existing Traffic Count

PROJECT	Mark Center MOA	DATE	5/23/2002	SOUTHBOUND ROAD:	N Beauregard Street
W & A JOB NO.:	1802	DAY:	Wednesday	NORTHBOUND ROAD	N.Beauregard Street
INTERSECTION:	N. Beauregard St.& Mark Center Drive	WEATHER:	nice	WESTBOUND ROAD:	Mark Center Drive
LOCATION:	Alexandria ,VA	COUNTED BY	Majos & Kar.	EASTBOUND ROAD:	
		INPUTTED BY:	again		

Time Period	Turning Movements: Southbound N.Beauregard Street 1 Right	2 Thru	3 Left	Total	Westbound Mark Center Drive 4 Right	5 Thru	6 Left	Total	Northbound N Beauregard Street 7 Right	8 Thru	9 Left	Total	Eastbound 10 Right	11 Thru	12 Left	Total	North & South	East & West	Total	PHF	Time Period
AM																					
6:00-6:15	0	38	2	40	3	1	3	5	2	127	2	131	0	0	1	1	171	2	173		6:00-6:15
6:15-6:30	2	69	3	74	1	0	1	2	4	176	1	181	1	0	0	1	255	3	258		6:15-6:30
6:30-6:45	18	74	5	97	0	1	0	1	3	219	0	222	1	1	0	2	319	3	322		6:30-6:45
6:45-7:00	13	81	4	98	2	0	2	4	12	287	2	301	0	0	1	1	399	5	404		6:45-7:00
7:00-7:15	12	119	9	140	4	0	0	4	16	310	8	335	1	1	5	7	475	11	487		7:00-7:15
7:15-7:30	14	146	13	173	3	1	4	8	27	342	4	373	2	1	0	3	546	11	557		7:15-7:30
7:30-7:45	16	154	28	198	7	0	3	10	29	350	11	390	0	0	3	3	597	13	610		7:30-7:45
7:45-8:00	21	136	29	186	8	2	5	15	36	367	9	412	2	3	7	12	598	27	625		7:45-8:00
8:00-8:15	19	130	23	181	12	3	8	23	34	371	11	416	3	2	2	7	604	30	634		8:00-8:15
8:15-8:30	16	146	34	196	7	3	5	15	43	423	13	479	2	2	5	9	674	24	698		8:15-8:30
8:30-8:45	24	147	14	185	7	3	13	23	51	349	9	409	2	2	8	12	594	35	629		8:30-8:45
8:45-9:00	19	131	13	163	6	1	8	15	45	275	6	372	5	2	5	12	496	27	512		8:45-9:00
3 Hour Totals	170	1,380	180	1,730	57	15	49	121	299	3,603	76	3,978	18	14	37	70	5,708	191	5,899		
1 Hour Totals																					
6:00-7:00	33	262	14	309	3	2	3	8	21	809	5	835	2	1	2	5	1,144	13	1,157	0.72	6:00-7:00
6:15-7:15	45	343	21	409	7	1	2	11	37	952	11	1,040	3	2	6	11	1,449	22	1,471	0.78	6:15-7:15
6:30-7:30	57	420	31	508	9	2	6	17	80	1,158	14	1,232	4	3	6	13	1,740	30	1,770	0.79	6:30-7:30
6:45-7:45	65	500	54	619	18	1	9	28	86	1,298	25	1,409	3	2	9	14	2,010	40	2,050	0.94	6:45-7:45
7:00-8:00	63	555	79	697	22	3	12	37	110	1,378	32	1,520	5	5	15	25	2,217	52	2,269	0.91	7:00-8:00
7:15-8:15	70	575	93	738	30	8	20	58	123	1,438	35	1,597	7	6	12	25	2,335	81	2,416	0.97	7:15-8:15
7:30-8:30	71	576	114	760	34	8	21	63	139	1,520	44	1,703	7	7	17	31	2,463	94	2,557	0.92	7:30-8:30
7:45-8:45	79	568	100	747	34	11	31	76	161	1,510	42	1,713	9	9	22	40	2,460	116	2,576	0.92	7:45-8:45
8:00-9:00	74	563	87	724	32	10	34	76	168	1,416	39	1,623	12	8	20	40	2,347	116	2,463	0.68	8:00-9:00
AM Peak 7:45-8:45	79	568	100	747	34	11	31	76	161	1,510	42	1,713	9	5	22	40	2,460	116	2,576	0.92	AM Peak 7:45-8:45
PM																					
4:00-4:15	5	298	8	310	12	7	32	51	4	186	3	193	4	4	8	16	502	67	570		4:00-4:15
4:15-4:30	5	327	5	337	9	1	36	46	3	180	1	184	6	1	4	11	521	57	578		4:15-4:30
4:30-4:45	2	334	5	351	8	0	45	53	3	216	0	221	12	1	15	28	612	81	693		4:30-4:45
4:45-5:00	1	359	4	364	17	0	50	67	2	229	1	233	4	1	5	11	627	81	708		4:45-5:00
5:00-5:15	1	363	6	370	29	0	42	71	5	212	0	219	11	1	32	44	688	115	703		5:00-5:15
5:15-5:30	4	425	7	436	22	2	29	53	8	301	1	309	15	4	21	40	744	93	837		5:15-5:30
5:30-5:45	2	357	35	424	15	1	51	67	5	275	4	284	5	8	15	29	710	96	806		5:30-5:45
5:45-6:00	1	395	8	435	18	2	26	46	4	281	1	286	12	2	30	44	689	90	779		5:45-6:00
6:00-6:15	6	410	6	430	11	4	21	36	3	301	1	305	5	3	15	31	735	67	802		6:00-6:15
6:15-6:30	9	405	7	419	7	1	24	32	1	228	0	229	14	6	12	32	645	64	709		6:15-6:30
6:30-6:45	4	378	3	386	9	2	9	20	10	270	1	281	8	5	15	28	657	48	715		6:30-6:45
6:45-7:00	1	319	4	324	6	0	14	20	4	199	2	205	9	5	6	23	529	43	572		6:45-7:00
3 Hour Totals	30	4,491	99	4,621	163	20	379	562	53	2,881	15	2,949	108	46	186	340	7,570	902	8,472		
1 Hour Totals																					
4:00-5:00	14	1,280	20	1,432	46	8	153	217	13	813	5	831	28	7	36	69	2,263	286	2,549	0.50	4:00-5:00
4:15-5:15	9	1,463	20	1,492	63	1	173	237	15	839	2	856	33	4	60	97	2,348	334	2,682	0.55	4:15-5:15
4:30-5:30	8	1,561	22	1,591	76	2	166	244	15	950	2	967	42	7	77	126	2,571	370	2,941	0.68	4:30-5:30
4:45-5:45	8	1,664	52	1,724	83	3	172	258	21	1,018	6	1,045	35	14	78	127	2,666	385	3,054	0.81	4:45-5:45
5:00-6:00	8	1,571	54	1,633	84	5	148	237	22	1,070	6	1,098	43	15	99	157	2,731	394	3,125	0.93	5:00-6:00
5:15-6:15	13	1,625	54	1,693	66	9	127	202	15	1,159	7	1,185	40	22	82	144	2,878	346	3,224	0.96	5:15-6:15
5:30-6:30	12	1,607	54	1,673	61	8	122	181	14	1,085	8	1,109	39	24	73	136	2,779	317	3,096	0.96	5:30-6:30
5:45-6:45	14	1,569	22	1,605	45	9	80	134	18	1,080	3	1,101	42	21	72	135	2,736	269	3,005	0.94	5:45-6:45
6:00-7:00	11	1,522	20	1,556	33	7	68	108	18	999	4	1,020	39	24	51	114	2,576	222	2,798	0.87	6:00-7:00
PM Peak 5:15-6:15	13	1,625	54	1,693	66	9	127	202	15	1,159	7	1,185	40	22	82	144	2,878	346	3,224	0.96	PM Peak 5:15-6:15

Wells & Associates, LLC

McLean, Virginia

Existing Traffic Count

PROJECT:	Mark Center MDA	DATE:	5/22/2002	SOUTHBOUND ROAD:	N. Beauregard Street
W & A JOB NO.:	1800	DAY:	Wednesday	NORTHBOUND ROAD:	N. Beauregard Street
INTERSECTION:	N.Beauregard St.& Seminary Rd.	WEATHER:	nice	WESTBOUND ROAD:	Seminary Road
LOCATION:	Alexandria, VA	COUNTED BY:	Crawford & Carson	EASTBOUND ROAD:	Seminary Road
		INPUTED BY:	sgar		

Time Period	Turning Movements: Southbound N.Beauregard Street 1 Right	2 Thru	3 Left	Total	Westbound Seminary Road 4 Right	5 Thru	6 Left	Total	Northbound N.Beauregard Street 7 Right	8 Thru	9 Left	Total	Eastbound Seminary Road 10 Right	11 Thru	12 Left	Total	North & South	East & West	Total	PHF	Time Period
AM																					
5:00-5:15	4	6	8	18	10	177	18	205	73	31	37	141	15	125	3	143	159	348	507		5:00-5:15
5:15-5:30	5	13	15	33	17	158	56	231	62	29	60	151	23	149	4	176	184	336	520		5:15-5:30
5:30-5:45	10	19	15	44	13	206	34	253	97	52	86	235	25	165	2	192	276	448	727		5:30-5:45
5:45-6:00	6	17	11	34	19	162	37	238	111	58	107	276	29	177	11	216	310	454	764		5:45-6:00
6:00-6:15	10	29	19	58	35	215	43	291	132	94	89	315	50	172	7	229	373	520	893		6:00-6:15
6:15-6:30	13	42	13	71	34	212	63	307	119	105	112	336	47	198	4	249	407	556	963		6:15-6:30
6:30-6:45	14	34	16	64	43	236	91	370	150	140	106	376	63	250	17	330	440	700	1,140		6:30-6:45
6:45-7:00	13	43	18	74	40	244	89	373	128	107	135	370	38	220	17	275	444	649	1,093		6:45-7:00
7:00-7:15	22	49	25	96	31	287	79	397	119	145	111	375	43	179	14	235	471	632	1,103		7:00-7:15
7:15-7:30	15	55	22	93	37	312	108	457	113	135	128	360	46	175	9	231	473	678	1,151		7:15-7:30
7:30-7:45	16	50	20	86	38	294	76	408	119	131	116	336	60	202	11	284	421	672	1,093		7:30-7:45
7:45-8:00	14	29	31	73	41	271	61	393	120	117	117	354	56	175	6	238	427	631	1,058		7:45-8:00
3 Hour Totals	145	386	213	744	356	2,796	764	3,905	1,241	1,119	1,195	3,554	495	2,195	105	2,776	4,359	6,694	11,052		
1 Hour Totals																					
5:00-7:00	25	65	48	129	69	728	124	909	263	168	281	913	81	516	20	727	942	1,636	2,578	0.84	5:00-7:00
5:15-7:15	31	78	50	159	82	764	149	995	422	232	538	987	126	563	24	813	1,166	1,858	2,954	0.83	5:15-7:15
5:30-7:30	42	107	58	207	99	818	177	1,092	458	313	394	1,162	160	712	26	886	1,369	1,978	3,347	0.87	5:30-7:30
5:45-7:45	46	122	69	237	123	843	234	1,200	491	359	414	1,309	138	797	39	1,074	1,530	2,220	3,750	0.83	5:45-7:45
6:00-8:00	53	148	66	267	150	905	288	1,341	508	417	442	1,367	199	840	45	1,084	1,661	2,425	4,086	0.90	6:00-8:00
6:15-8:15	55	158	72	305	148	977	322	1,447	455	469	464	1,457	192	846	52	1,090	1,762	2,627	4,229	0.94	6:15-8:15
6:30-8:30	54	182	81	317	151	1,079	367	1,597	490	531	480	1,501	191	824	57	1,072	1,828	2,569	4,397	0.97	6:30-8:30
6:45-8:45	56	198	85	339	148	1,157	352	1,635	478	492	490	1,460	178	777	51	1,006	1,809	2,641	4,450	0.96	6:45-8:45
7:00-9:00	67	183	98	348	147	1,184	364	1,695	470	502	472	1,444	195	733	40	968	1,792	2,623	4,415	0.95	7:00-9:00
AM Peak 7:30-8:30	54	182	81	317	151	1,079	367	1,597	490	531	480	1,501	191	824	57	1,072	1,828	2,569	4,397	0.97	AM Peak 7:30-8:30
PM																					
4:00-4:15	13	102	36	151	27	242	111	380	82	57	62	201	81	321	10	422	352	802	1,154		4:00-4:15
4:15-4:30	16	81	41	137	43	229	91	363	55	70	85	249	124	328	19	471	385	834	1,220		4:15-4:30
4:30-4:45	14	114	46	174	29	249	131	409	101	76	76	253	87	295	8	390	427	799	1,226		4:30-4:45
4:45-5:00	16	120	39	177	30	246	96	372	93	81	85	259	101	299	20	420	436	799	1,235		4:45-5:00
5:00-5:15	14	121	33	168	49	258	144	445	135	58	76	302	126	357	17	500	470	943	1,413		5:00-5:15
5:15-5:30	23	113	46	182	46	237	130	413	110	75	68	253	121	342	22	485	435	898	1,333		5:15-5:30
5:30-5:45	12	137	34	183	49	253	129	431	105	58	96	302	130	327	28	485	485	956	1,441		5:30-5:45
5:45-6:00	21	132	47	200	62	232	118	412	105	84	97	286	115	368	20	503	486	915	1,401		5:45-6:00
6:00-6:15	17	120	38	175	67	268	126	461	56	85	58	239	162	283	15	460	414	912	1,326		6:00-6:15
6:15-6:30	13	77	38	128	64	235	126	425	96	73	74	245	123	327	19	469	374	894	1,268		6:15-6:30
6:30-6:45	16	108	40	165	54	248	111	413	95	97	81	273	101	253	13	367	438	810	1,248		6:30-6:45
6:45-7:00	11	85	31	128	50	252	97	379	77	57	55	190	122	313	11	452	318	831	1,149		6:45-7:00
3 Hour Totals	197	1,209	473	1,879	562	2,966	1,411	4,939	1,193	944	925	3,062	1,403	3,849	202	5,454	5,021	10,353	15,414		
1 Hour Totals																					
4:00-5:00	60	417	162	639	137	980	429	1,531	368	284	309	962	408	1,243	57	1,708	1,801	3,234	4,835	0.98	4:00-5:00
4:15-5:15	61	436	159	656	155	980	461	1,596	422	315	326	1,063	438	1,278	64	1,781	1,713	3,375	5,094	0.90	4:15-5:15
4:30-5:30	69	468	164	701	155	989	500	1,644	459	320	303	1,082	435	1,293	67	1,795	1,768	3,439	5,207	0.92	4:30-5:30
4:45-5:45	67	451	152	710	176	1,002	498	1,706	443	342	328	1,113	478	1,326	67	1,890	1,828	3,595	5,422	0.94	4:45-5:45
5:00-6:00	70	503	160	733	200	1,018	521	1,739	450	345	340	1,143	492	1,394	87	1,973	1,875	3,712	5,588	0.97	5:00-6:00
5:15-6:15	73	502	165	740	214	1,031	503	1,748	419	345	318	1,082	528	1,320	85	1,933	1,820	3,681	5,501	0.95	5:15-6:15
5:30-6:30	63	466	156	687	232	1,027	501	1,750	407	343	322	1,072	530	1,305	82	1,917	1,758	3,677	5,436	0.94	5:30-6:30
5:45-6:45	67	435	187	689	237	982	483	1,702	364	342	317	1,043	531	1,281	67	1,879	1,712	3,591	5,243	0.94	5:45-6:45
6:00-7:00	57	389	161	607	225	982	462	1,669	356	315	276	947	503	1,212	58	1,773	1,544	3,447	4,991	0.94	6:00-7:00
PM Peak 5:00-6:00	70	503	160	733	200	1,018	521	1,739	450	345	340	1,143	492	1,394	87	1,973	1,875	3,712	5,588	0.97	PM Peak 5:00-6:00

Wells & Associates, LLC

McLean, Virginia

Existing Traffic Count

PROJECT:	Mark Center MDA	DATE:	5/23/2002	SOUTHBOUND ROAD:	Southern Towers Entr	
W & A JOB NO:	1603	DAY:	Wednesday	NORTHBOUND ROAD:	Mark Center Drive	
INTERSECTION:	Seminary Rd & Mark Center Dr.	WEATHER:	nice	WESTBOUND ROAD:	Seminary Road	
LOCATION:	Alexandria, VA	COUNTED BY:	Margaret	EASTBOUND ROAD:	Seminary Road	
		INPUTED BY:	egan			

Turning Movements

Time Period	Southbound Southern Towers Entr 1 Right	2 Thru	3 Left	Total	Westbound Seminary Road 4 Right	5 Thru	6 Left	Total	Northbound Mark Center Drive 7 Right	8 Thru	9 Left	Total	Eastbound Seminary Road 10 Right	11 Thru	12 Left	Total	North & South	East & West	Total	PHF	Time Period
AM																					
5:00-5:15	3	2	36	41	10	179	24	213	11	3	2	16	3	210	2	215	57	428	485		5:00-5:15
5:15-5:30	4	3	45	53	13	201	35	249	17	0	0	17	6	141	0	147	83	416	485		5:15-5:30
5:30-5:45	16	2	54	81	14	212	42	268	25	0	1	26	6	256	4	266	107	554	671		5:30-5:45
5:45-7:00	17	6	77	100	13	206	84	315	33	4	1	38	15	290	5	310	138	625	763		5:45-7:00
7:00-7:15	17	6	46	65	12	252	73	337	35	2	2	39	8	317	7	332	108	669	777		7:00-7:15
7:15-7:30	9	10	70	89	20	222	86	428	51	3	3	57	14	356	7	387	146	615	961		7:15-7:30
7:30-7:45	16	6	65	87	13	325	61	538	35	1	8	42	11	314	10	335	129	733	862		7:30-7:45
7:45-8:00	7	5	56	68	28	343	92	463	51	0	3	54	23	359	9	401	122	864	986		7:45-8:00
8:00-8:15	15	8	65	94	22	386	87	495	34	0	9	43	15	324	8	347	137	842	979		8:00-8:15
8:15-8:30	23	11	86	120	18	452	108	578	48	1	5	52	24	343	8	375	172	951	1,123		8:15-8:30
8:30-8:45	10	2	57	69	20	271	112	403	41	2	4	47	15	275	11	301	116	708	824		8:30-8:45
8:45-9:00	16	7	52	75	20	309	105	433	25	6	4	35	21	257	10	288	113	726	839		8:45-9:00
3 Hour Totals	156	63	720	949	202	3,508	889	4,599	405	21	42	468	161	3,496	91	3,748	1,414	8,341	9,755		
1 Hour Totals																					
5:00-6:00	39	10	222	274	50	650	185	1,085	86	7	4	97	30	927	11	968	371	2,033	2,404	0.75	5:00-6:00
5:15-6:15	53	17	232	302	52	823	214	1,189	110	6	4	120	35	1,054	15	1,095	422	2,274	2,696	0.87	5:15-6:15
5:30-6:30	58	24	257	339	59	1,022	257	1,338	144	9	7	160	43	1,258	23	1,326	499	2,673	3,172	0.82	5:30-6:30
5:45-6:45	58	28	256	345	57	1,135	286	1,478	152	10	14	176	48	1,287	29	1,364	521	2,842	3,363	0.87	5:45-6:45
6:00-7:00	49	27	237	313	72	1,240	314	1,626	170	6	18	192	56	1,366	33	1,455	505	3,084	3,589	0.91	6:00-7:00
6:15-7:15	51	30	257	338	82	1,274	328	1,684	189	4	23	196	63	1,373	34	1,470	534	3,251	3,786	0.98	6:15-7:15
6:30-7:30	65	31	273	369	80	1,505	348	1,932	164	2	25	191	73	1,350	35	1,458	560	3,390	3,950	0.88	6:30-7:30
6:45-7:45	59	27	265	351	88	1,452	397	1,937	172	3	21	196	77	1,315	35	1,428	547	3,355	3,912	0.87	6:45-7:45
7:00-8:00	68	29	261	358	80	1,418	414	1,912	150	8	22	180	76	1,203	37	1,315	538	3,227	3,765	0.84	7:00-8:00
AM Peak 7:30-8:30	65	31	273	369	80	1,505	348	1,932	164	2	25	191	73	1,350	35	1,458	560	3,390	3,950	0.88	AM Peak 7:30-8:30
PM																					
4:00-4:15	13	5	56	75	36	377	57	450	101	6	6	112	21	434	14	469	186	919	1,107		4:00-4:15
4:15-4:30	20	4	53	77	37	375	36	448	77	2	9	88	6	473	16	495	165	943	1,108		4:15-4:30
4:30-4:45	17	2	36	55	40	332	55	437	116	2	11	129	2	458	9	467	184	904	1,088		4:30-4:45
4:45-5:00	14	7	50	71	48	368	50	466	115	5	11	134	8	424	12	444	205	910	1,115		4:45-5:00
5:00-5:15	15	6	52	73	49	356	47	452	126	2	22	173	7	471	20	498	243	948	1,191		5:00-5:15
5:15-5:30	15	9	45	69	44	354	63	461	140	4	18	166	6	465	23	494	235	934	1,169		5:15-5:30
5:30-5:45	15	8	47	67	38	388	54	480	105	0	16	125	10	429	22	455	192	935	1,127		5:30-5:45
5:45-6:00	11	2	47	62	52	459	65	571	117	8	21	141	12	517	27	556	203	1,127	1,330		5:45-6:00
6:00-6:15	10	4	41	55	45	378	54	477	106	1	9	116	9	368	20	395	171	872	1,043		6:00-6:15
6:15-6:30	17	2	46	65	32	435	56	493	57	2	6	67	6	416	19	442	132	936	1,068		6:15-6:30
6:30-6:45	20	4	52	76	39	386	38	463	57	0	4	61	3	396	21	420	137	883	1,020		6:30-6:45
6:45-7:00	17	3	44	64	35	384	41	460	52	6	10	68	6	392	26	423	132	883	1,015		6:45-7:00
3 Hour Totals	184	65	671	810	434	4,550	558	5,546	1,209	32	145	1,386	97	5,223	228	5,548	2,190	11,194	13,384		
1 Hour Totals																					
4:00-5:00	64	16	197	279	161	1,452	188	1,801	412	14	37	463	37	1,787	51	1,875	742	3,676	4,418	0.99	4:00-5:00
4:15-5:15	66	19	191	276	179	1,430	196	1,805	480	11	53	524	23	1,824	67	1,904	800	3,705	4,505	0.94	4:15-5:15
4:30-5:30	61	24	193	258	180	1,409	216	1,804	529	13	60	602	22	1,806	64	1,892	870	3,696	4,566	0.96	4:30-5:30
4:45-5:45	59	27	194	280	179	1,465	204	1,847	522	11	65	598	30	1,773	77	1,880	878	3,727	4,605	0.95	4:45-5:45
5:00-6:00	55	24	191	271	182	1,550	220	1,952	524	9	75	605	34	1,866	92	1,992	876	3,944	4,820	0.91	5:00-6:00
5:15-6:15	61	22	180	263	179	1,571	229	1,979	476	8	62	546	30	1,751	92	1,839	801	3,859	4,660	0.88	5:15-6:15
5:30-6:30	63	15	181	249	167	1,622	232	2,021	369	6	64	440	39	1,722	88	1,849	698	3,870	4,568	0.88	5:30-6:30
5:45-6:45	58	14	186	258	158	1,620	216	2,004	337	6	42	385	32	1,695	87	1,814	643	3,818	4,461	0.84	5:45-6:45
6:00-7:00	64	19	195	260	151	1,561	181	1,893	272	9	31	312	26	1,570	65	1,661	572	3,574	4,146	0.97	6:00-7:00
PM Peak 5:00-6:00	55	24	191	271	182	1,550	220	1,952	524	9	75	605	34	1,866	92	1,992	876	3,944	4,820	0.91	PM Peak 5:00-6:00

Wells & Associates, LLC

McLean, Virginia

Existing Traffic Count

PROJECT:	Mark Center MDA	DATE	5/22/2002	SOUTHBOUND ROAD:	I 395 SB
W & A JOB NO.:	1803	DAY:	Wednesday	NORTHBOUND ROAD	
INTERSECTION:	I 395 SB on Ramp & Seminary Rd.	WEATHER:	nice	WESTBOUND ROAD:	
LOCATION	Alexandria, VA	COUNTED BY:	Ernst Wolle	EASTBOUND ROAD.	Seminary Road
		INPUTED BY:	agan		

Turning Movements

Time Period	Southbound I 395 SB 1 Right	2 Thru	3 Left	Total	Westbound 0 4 Right	5 Thru	6 Left	Total	Northbound 0 7 Right	8 Thru	9 Left	Total	Eastbound Seminary Road 10 Right	11 Thru	12 Left	Total	North & South	East & West	Total	PHF	Time Period
AM																					
6:00-6:15	0	27	23	50	0	0	0	0	0	0	0	0	80	130	0	210	50	210	260		6:00-6:15
6:15-6:30	0	32	40	72	0	0	0	0	0	0	0	0	79	136	0	215	72	215	287		6:15-6:30
6:30-6:45	0	40	26	66	0	0	0	0	0	0	0	0	123	188	0	311	66	311	377		6:30-6:45
6:45-7:00	0	35	45	80	0	0	0	0	0	0	0	0	107	170	0	277	80	277	357		6:45-7:00
7:00-7:15	0	44	54	98	0	0	0	0	0	0	0	0	103	208	0	311	98	311	409		7:00-7:15
7:15-7:30	0	45	66	111	0	0	0	0	0	0	0	0	104	198	0	302	111	302	413		7:15-7:30
7:30-7:45	0	54	65	119	0	0	0	0	0	0	0	0	124	206	0	330	119	330	449		7:30-7:45
7:45-8:00	0	67	60	127	0	0	0	0	0	0	0	0	140	188	0	328	127	328	455		7:45-8:00
8:00-8:15	0	67	63	130	0	0	0	0	0	0	0	0	120	181	0	301	130	301	431		8:00-8:15
8:15-8:30	0	62	57	119	0	0	0	0	0	0	0	0	127	169	0	296	119	296	415		8:15-8:30
8:30-8:45	0	62	55	107	0	0	0	0	0	0	0	0	118	143	0	261	107	261	368		8:30-8:45
8:45-9:00	0	44	56	100	0	0	0	0	0	0	0	0	108	127	0	235	100	235	335		8:45-9:00
3 Hour Totals	0	569	610	1,179	0	0	0	0	0	0	0	0	1,338	2,044	0	3,377	1,179	3,377	4,556		
1 Hour Totals																					
6:00-7:00	0	134	134	268	0	0	0	0	0	0	0	0	539	824	0	1,013	268	1,013	1,281	0.85	6:00-7:00
6:15-7:15	0	151	165	316	0	0	0	0	0	0	0	0	412	702	0	1,114	316	1,114	1,430	0.87	6:15-7:15
6:30-7:30	0	164	191	355	0	0	0	0	0	0	0	0	487	714	0	1,201	355	1,201	1,556	0.94	6:30-7:30
6:45-7:45	0	178	230	408	0	0	0	0	0	0	0	0	436	782	0	1,220	408	1,220	1,628	0.91	6:45-7:45
7:00-8:00	0	210	245	455	0	0	0	0	0	0	0	0	471	800	0	1,271	455	1,271	1,726	0.95	7:00-8:00
7:15-8:15	0	233	254	487	0	0	0	0	0	0	0	0	485	776	0	1,261	487	1,261	1,748	0.96	7:15-8:15
7:30-8:30	0	250	245	495	0	0	0	0	0	0	0	0	511	744	0	1,255	495	1,255	1,750	0.96	7:30-8:30
7:45-8:45	0	248	235	483	0	0	0	0	0	0	0	0	505	681	0	1,186	483	1,186	1,669	0.92	7:45-8:45
8:00-9:00	0	225	231	456	0	0	0	0	0	0	0	0	473	620	0	1,093	456	1,093	1,549	0.90	8:00-9:00
AM Peak 7:30-8:30	0	250	245	495	0	0	0	0	0	0	0	0	511	744	0	1,255	495	1,255	1,750	0.96	AM Peak 7:30-8:30
PM																					
4:00-4:15	0	48	118	166	0	0	0	0	0	0	0	0	248	99	0	347	166	347	513		4:00-4:15
4:15-4:30	0	65	131	196	0	0	0	0	0	0	0	0	229	133	0	362	196	362	558		4:15-4:30
4:30-4:45	0	64	148	212	0	0	0	0	0	0	0	0	219	161	0	380	212	380	592		4:30-4:45
4:45-5:00	0	83	115	198	0	0	0	0	0	0	0	0	227	158	0	385	198	385	583		4:45-5:00
5:00-5:15	0	83	153	236	0	0	0	0	0	0	0	0	239	147	0	386	236	386	622		5:00-5:15
5:15-5:30	0	74	176	250	0	0	0	0	0	0	0	0	222	161	0	383	250	383	633		5:15-5:30
5:30-5:45	0	50	165	215	0	0	0	0	0	0	0	0	209	159	0	368	215	368	583		5:30-5:45
5:45-6:00	0	67	174	241	0	0	0	0	0	0	0	0	251	120	0	371	241	371	612		5:45-6:00
6:00-6:15	0	47	166	213	0	0	0	0	0	0	0	0	186	138	0	324	213	324	537		6:00-6:15
6:15-6:30	0	70	189	259	0	0	0	0	0	0	0	0	204	135	0	339	259	339	598		6:15-6:30
6:30-6:45	0	70	149	219	0	0	0	0	0	0	0	0	204	120	0	324	219	324	543		6:30-6:45
6:45-7:00	0	62	167	229	0	0	0	0	0	0	0	0	179	109	0	288	229	288	517		6:45-7:00
3 Hour Totals	0	763	1,861	2,624	0	0	0	0	0	0	0	0	2,636	1,636	0	4,272	2,624	4,272	6,896		
1 Hour Totals																					
4:00-5:00	0	280	512	792	0	0	0	0	0	0	0	0	923	551	0	1,474	792	1,474	2,266	0.96	4:00-5:00
4:15-5:15	0	275	557	832	0	0	0	0	0	0	0	0	914	599	0	1,513	832	1,513	2,345	0.98	4:15-5:15
4:30-5:30	0	284	602	886	0	0	0	0	0	0	0	0	907	627	0	1,534	886	1,534	2,420	0.98	4:30-5:30
4:45-5:45	0	270	619	889	0	0	0	0	0	0	0	0	897	625	0	1,522	889	1,522	2,411	0.96	4:45-5:45
5:00-6:00	0	254	678	932	0	0	0	0	0	0	0	0	931	587	0	1,518	932	1,518	2,450	0.97	5:00-6:00
5:15-6:15	0	238	581	819	0	0	0	0	0	0	0	0	888	578	0	1,466	819	1,466	2,285	0.94	5:15-6:15
5:30-6:30	0	234	694	928	0	0	0	0	0	0	0	0	870	552	0	1,422	928	1,422	2,350	0.94	5:30-6:30
5:45-6:45	0	254	678	932	0	0	0	0	0	0	0	0	885	513	0	1,378	932	1,378	2,310	0.93	5:45-6:45
6:00-7:00	0	249	671	920	0	0	0	0	0	0	0	0	782	498	0	1,280	920	1,280	2,200	0.92	6:00-7:00
PM Peak 5:30-6:00	0	254	678	932	0	0	0	0	0	0	0	0	931	587	0	1,518	932	1,518	2,450	0.97	PM Peak 5:30-6:00

Wells & Associates, LLC

McLean, Virginia

Existing Traffic Count

PROJECT	Mark Center MDA	DATE:	5/22/2002	SOUTHBOUND ROAD:	I 395 SB
W & A JOB NO.	1303	DAY:	Wednesday	NORTHBOUND ROAD:	395 SB
INTERSECTION	I 395 SB off Ramp & Seminary Road	WEATHER:	nice	WESTBOUND ROAD:	Seminary Road
LOCATION	Alexandria, VA	COUNTED BY:	Kristof	EASTBOUND ROAD:	Seminary Road
		INPUTED BY:	sgan		

Turning Movements

Time Period	Southbound 395 SB 1 Right	2 Thru	3 Left	Total	Westbound Seminary Road 4 Right	5 Thru	6 Left	Total	Northbound I 395 SB 7 Righ.	8 Thru	9 Left	Total	Eastbound Seminary Road 10 Righ.	11 Thru	12 Left	Total	North & South	East & West	Total	PHF	Time Period
AM																					
6:00-6:15	28	25	0	53	0	84	15	103	0	0	0	0	0	0	0	0	53	103	156		6:00-6:15
6:15-6:30	56	35	0	103	0	109	37	146	0	0	0	0	0	0	0	0	103	146	249		6:15-6:30
6:30-6:45	54	30	0	84	0	103	44	147	0	0	0	0	0	0	0	0	84	147	231		6:30-6:45
6:45-7:00	87	45	0	132	0	65	35	100	0	0	0	0	0	0	0	0	132	100	232		6:45-7:00
7:00-7:15	87	60	0	147	0	103	50	153	0	0	0	0	0	0	0	0	147	153	300		7:00-7:15
7:15-7:30	123	61	0	184	0	84	44	128	0	0	0	0	0	0	0	0	184	128	312		7:15-7:30
7:30-7:45	141	62	0	203	0	91	69	160	0	0	0	0	0	0	0	0	203	159	362		7:30-7:45
7:45-8:00	129	67	0	196	0	112	53	165	0	0	0	0	0	0	0	0	196	165	361		7:45-8:00
8:00-8:15	134	54	0	188	0	141	71	212	0	0	0	0	0	0	0	0	188	212	400		8:00-8:15
8:15-8:30	109	51	0	160	0	155	61	216	0	0	0	0	0	0	0	0	160	216	376		8:15-8:30
8:30-8:45	142	64	0	206	0	140	57	197	0	0	0	0	0	0	0	0	206	197	403		8:30-8:45
8:45-9:00	148	53	0	201	0	121	53	174	0	0	0	0	0	0	0	0	201	174	375		8:45-9:00
3 Hour Totals	1,250	607	0	1,857	0	1,307	592	1,899	0	0	0	0	0	0	0	0	1,857	1,899	3,756		
1 Hour Totals																					
6:30-7:00	247	135	0	382	0	360	135	495	0	0	0	0	0	0	0	0	382	495	877	0.88	6:30-7:00
6:45-7:15	326	170	0	496	0	379	166	545	0	0	0	0	0	0	0	0	496	545	1,041	0.85	6:45-7:15
7:00-7:30	351	196	0	547	0	356	172	528	0	0	0	0	0	0	0	0	547	528	1,075	0.87	7:00-7:30
7:15-7:45	436	226	0	662	0	343	197	540	0	0	0	0	0	0	0	0	662	540	1,202	0.83	7:15-7:45
7:30-8:00	490	250	0	740	0	390	215	605	0	0	0	0	0	0	0	0	740	605	1,345	0.82	7:30-8:00
7:45-8:15	527	241	0	768	0	429	235	664	0	0	0	0	0	0	0	0	768	664	1,432	0.90	7:45-8:15
8:00-8:30	513	234	0	747	0	499	253	752	0	0	0	0	0	0	0	0	747	752	1,499	0.94	8:00-8:30
8:15-8:45	514	236	0	750	0	549	242	790	0	0	0	0	0	0	0	0	750	790	1,540	0.96	8:15-8:45
8:30-9:00	533	222	0	755	0	557	242	799	0	0	0	0	0	0	0	0	755	799	1,554	0.98	8:30-9:00
AM Peak 8:00-9:00	533	222	0	755	0	557	242	799	0	0	0	0	0	0	0	0	755	799	1,554	0.98	AM Peak 8:00-9:00
PM																					
4:00-4:15	155	95	0	264	0	149	61	210	0	0	0	0	0	0	0	0	264	209	473		4:00-4:15
4:15-4:30	187	110	0	297	0	172	80	252	0	0	0	0	0	0	0	0	297	252	549		4:15-4:30
4:30-4:45	159	165	0	235	0	130	60	201	0	0	0	0	0	0	0	0	235	201	436		4:30-4:45
4:45-5:00	213	133	0	346	0	160	75	235	0	0	0	0	0	0	0	0	346	235	581		4:45-5:00
5:00-5:15	156	108	0	264	0	156	78	234	0	0	0	0	0	0	0	0	264	234	498		5:00-5:15
5:15-5:30	217	139	0	356	0	167	82	249	0	0	0	0	0	0	0	0	356	249	605		5:15-5:30
5:30-5:45	186	153	0	339	0	182	73	255	0	0	0	0	0	0	0	0	339	255	594		5:30-5:45
5:45-6:00	177	137	0	314	0	193	54	247	0	0	0	0	0	0	0	0	314	247	561		5:45-6:00
6:00-6:15	225	151	0	377	0	133	55	218	0	0	0	0	0	0	0	0	377	218	595		6:00-6:15
6:15-6:30	216	197	0	413	0	165	81	246	0	0	0	0	0	0	0	0	413	246	659		6:15-6:30
6:30-6:45	177	130	0	307	0	133	130	263	0	0	0	0	0	0	0	0	307	263	570		6:30-6:45
6:45-7:00	141	120	0	261	0	176	94	270	0	0	0	0	0	0	0	0	261	270	531		6:45-7:00
3 Hour Totals	2,209	1,664	0	3,873	0	2,020	914	2,934	0	0	0	0	0	0	0	0	3,873	2,934	6,807		
1 Hour Totals																					
4:00-5:00	714	528	0	1,242	0	618	279	897	0	0	0	0	0	0	0	0	1,242	897	2,139	0.92	4:00-5:00
4:15-5:15	734	538	0	1,242	0	629	294	922	0	0	0	0	0	0	0	0	1,242	922	2,164	0.90	4:15-5:15
4:30-5:30	754	547	0	1,301	0	623	296	919	0	0	0	0	0	0	0	0	1,301	919	2,220	0.92	4:30-5:30
4:45-5:45	771	534	0	1,305	0	667	306	973	0	0	0	0	0	0	0	0	1,305	973	2,278	0.94	4:45-5:45
5:00-6:00	735	539	0	1,274	0	630	295	925	0	0	0	0	0	0	0	0	1,274	925	2,199	0.92	5:00-6:00
5:15-6:15	806	580	0	1,386	0	715	284	999	0	0	0	0	0	0	0	0	1,386	999	2,385	0.95	5:15-6:15
5:30-6:30	835	609	0	1,443	0	713	283	996	0	0	0	0	0	0	0	0	1,443	996	2,439	0.93	5:30-6:30
5:45-6:45	796	615	0	1,411	0	719	310	1,029	0	0	0	0	0	0	0	0	1,411	1,029	2,440	0.93	5:45-6:45
6:00-7:00	760	598	0	1,358	0	712	340	1,052	0	0	0	0	0	0	0	0	1,358	1,052	2,410	0.91	6:00-7:00
PM Peak 5:45-6:45	796	615	0	1,411	0	719	310	1,029	0	0	0	0	0	0	0	0	1,411	1,029	2,440	0.93	PM Peak 5:45-6:45

Wells & Associates, LLC

McLean, Virginia

Existing Traffic Count

PROJECT:	Mark Center MOA	DATE	5/22/2002	SOUTHBOUND ROAD:	
W & A JOB NO.:	1803	DAY:	Wednesday	NORTHBOUND ROAD:	I 395 NB
INTERSECTION:	395 NB On Ramp & Seminary Rd	WEATHER:	nice	WESTBOUND ROAD	Seminary Road
LOCATION:	Alexandria, VA	COUNTED BY:	Mell	EASTBOUND ROAD:	
		INPUTED BY:	lla		

Turning Movements

Time Period	Southbound 0				Westbound Seminary Road				Northbound I 395 NB				Eastbound 0				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																					
5:30-5:45	0	0	0	0	105	31	0	136	0	110	117	227	0	0	0	0	227	136	363		5:30-5:45
5:45-6:00	0	0	0	0	101	43	0	144	0	129	128	257	0	0	0	0	257	144	401		5:45-6:00
6:00-6:15	0	0	0	0	130	39	0	169	0	137	111	248	0	0	0	0	248	169	417		6:00-6:15
6:15-6:30	0	0	0	0	172	42	0	214	0	164	95	259	0	0	0	0	259	214	473		6:15-6:30
6:30-6:45	0	0	0	0	215	70	0	285	0	218	116	334	0	0	0	0	334	285	619		6:30-6:45
6:45-7:00	0	0	0	0	234	74	0	308	0	179	143	322	0	0	0	0	322	308	630		6:45-7:00
7:00-7:15	0	0	0	0	211	67	0	278	0	205	124	329	0	0	0	0	329	278	607		7:00-7:15
7:15-7:30	0	0	0	0	224	109	0	333	0	181	124	305	0	0	0	0	305	333	638		7:15-7:30
7:30-7:45	0	0	0	0	248	122	0	370	0	163	179	342	0	0	0	0	342	370	712		7:30-7:45
7:45-8:00	0	0	0	0	208	122	0	330	0	136	185	321	0	0	0	0	321	330	651		7:45-8:00
8:00-8:15	0	0	0	0	174	102	0	276	0	151	228	379	0	0	0	0	379	276	655		8:00-8:15
8:15-8:30	0	0	0	0	191	104	0	295	0	153	194	347	0	0	0	0	347	295	642		8:15-8:30
8:30-8:45	0	0	0	0	174	102	0	276	0	151	228	379	0	0	0	0	379	276	655		8:30-8:45
8:45-9:00	0	0	0	0	191	104	0	295	0	153	194	347	0	0	0	0	347	295	642		8:45-9:00
3 Hour Totals	0	0	0	0	2,217	945	0	3,162	0	1,926	1,744	3,670	0	0	0	0	3,670	3,162	6,832		
1 Hour Totals																					
6:00-7:00	0	0	0	0	508	155	0	663	0	540	451	991	0	0	0	0	991	663	1,654	0.87	6:00-7:00
6:15-7:15	0	0	0	0	622	191	0	813	0	648	450	1,098	0	0	0	0	1,098	813	1,911	0.77	6:15-7:15
6:30-7:30	0	0	0	0	755	225	0	980	0	698	465	1,163	0	0	0	0	1,163	980	2,143	0.85	6:30-7:30
6:45-7:45	0	0	0	0	836	273	0	1,109	0	768	476	1,244	0	0	0	0	1,244	1,109	2,353	0.93	6:45-7:45
7:00-8:00	0	0	0	0	888	340	0	1,228	0	753	507	1,260	0	0	0	0	1,260	1,228	2,516	0.98	7:00-8:00
7:15-8:15	0	0	0	0	817	392	0	1,209	0	728	570	1,298	0	0	0	0	1,298	1,209	2,507	0.92	7:15-8:15
7:30-8:30	0	0	0	0	691	440	0	1,131	0	685	612	1,297	0	0	0	0	1,297	1,131	2,428	0.92	7:30-8:30
7:45-8:45	0	0	0	0	654	455	0	1,109	0	631	716	1,347	0	0	0	0	1,347	1,109	2,456	0.93	7:45-8:45
8:00-9:00	0	0	0	0	821	450	0	1,271	0	603	786	1,389	0	0	0	0	1,389	1,271	2,660	0.93	8:00-9:00
AM Peak 8:00-9:00	0	0	0	0	821	450	0	1,271	0	603	786	1,389	0	0	0	0	1,389	1,271	2,660	0.93	AM Peak 8:00-9:00
PM																					
4:00-4:15	0	0	0	0	51	71	0	122	0	107	140	247	0	0	0	0	247	122	369		4:00-4:15
4:15-4:30	0	0	0	0	44	106	0	150	0	168	142	310	0	0	0	0	310	150	460		4:15-4:30
4:30-4:45	0	0	0	0	55	68	0	123	0	194	135	329	0	0	0	0	329	123	452		4:30-4:45
4:45-5:00	0	0	0	0	85	75	0	160	0	129	157	286	0	0	0	0	286	160	446		4:45-5:00
5:00-5:15	0	0	0	0	87	79	0	166	0	168	156	324	0	0	0	0	324	166	490		5:00-5:15
5:15-5:30	0	0	0	0	79	60	0	139	0	182	165	347	0	0	0	0	347	139	486		5:15-5:30
5:30-5:45	0	0	0	0	74	43	0	117	0	185	144	329	0	0	0	0	329	117	446		5:30-5:45
5:45-6:00	0	0	0	0	72	64	0	136	0	137	179	316	0	0	0	0	316	136	452		5:45-6:00
6:00-6:15	0	0	0	0	60	60	0	120	0	120	172	292	0	0	0	0	292	120	412		6:00-6:15
6:15-6:30	0	0	0	0	82	87	0	169	0	146	153	299	0	0	0	0	299	169	468		6:15-6:30
6:30-6:45	0	0	0	0	65	57	0	123	0	139	175	314	0	0	0	0	314	123	437		6:30-6:45
6:45-7:00	0	0	0	0	58	44	0	102	0	118	149	267	0	0	0	0	267	102	369		6:45-7:00
3 Hour Totals	0	0	0	0	807	819	0	1,626	0	1,734	1,916	3,650	0	0	0	0	3,650	1,626	5,276		
1 Hour Totals																					
4:00-5:00	0	0	0	0	286	320	0	606	0	598	674	1,172	0	0	0	0	1,172	606	1,778	0.94	4:00-5:00
4:15-5:15	0	0	0	0	271	328	0	599	0	660	589	1,249	0	0	0	0	1,249	599	1,848	0.94	4:15-5:15
4:30-5:30	0	0	0	0	300	297	0	597	0	674	612	1,286	0	0	0	0	1,286	597	1,883	0.96	4:30-5:30
4:45-5:45	0	0	0	0	319	262	0	581	0	666	621	1,285	0	0	0	0	1,285	581	1,867	0.95	4:45-5:45
5:00-6:00	0	0	0	0	305	251	0	557	0	673	643	1,316	0	0	0	0	1,316	557	1,873	0.98	5:00-6:00
5:15-6:15	0	0	0	0	279	232	0	511	0	624	660	1,284	0	0	0	0	1,284	511	1,795	0.93	5:15-6:15
5:30-6:30	0	0	0	0	288	254	0	542	0	589	648	1,236	0	0	0	0	1,236	542	1,778	0.95	5:30-6:30
5:45-6:45	0	0	0	0	260	288	0	548	0	542	679	1,221	0	0	0	0	1,221	548	1,769	0.94	5:45-6:45
6:00-7:00	0	0	0	0	266	248	0	514	0	523	649	1,172	0	0	0	0	1,172	514	1,686	0.90	6:00-7:00
PM Peak 5:00-6:00	0	0	0	0	305	251	0	557	0	673	643	1316	0	0	0	0	1316	557	1873	0.9556	PM Peak 5:00-6:00

Wells & Associates, LLC

McLean, Virginia

Existing Traffic Count

PROJECT:	Mark Center MDA	DATE:	5/22/2002	SOUTHBOUND ROAD:	
W & A JOB NO:	1803	DAY:	Wednesday	NORTHBOUND ROAD:	I 395
INTERSECTION:	I 395 NB off Ramp & Seminary Rd.	WEATHER:	nice	WESTBOUND ROAD:	
LOCATION:	Alexandria, VA	COUNTED BY:	Victor	EASTBOUND ROAD:	Seminary Road
		INPUTED BY:	again		

Time Period	Turning Movements																		Total	PHF	Time Period
	Southbound 0				Westbound 0				Northbound I 395				Eastbound Seminary Road				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																					
6:30-6:15	0	0	0	0	0	0	0	0	29	115	0	143	0	15	131	146	143	146	289		6:30-6:15
6:15-6:30	0	0	0	0	0	0	0	0	26	115	0	141	0	39	142	182	141	183	324		6:15-6:30
6:30-6:45	0	0	0	0	0	0	0	0	28	116	0	144	0	77	148	225	144	225	369		6:30-6:45
6:45-7:00	0	0	0	0	0	0	0	0	31	84	0	115	0	52	182	234	115	234	349		6:45-7:00
7:00-7:15	0	0	0	0	0	0	0	0	36	107	0	143	0	44	226	270	143	270	413		7:00-7:15
7:15-7:30	0	0	0	0	0	0	0	0	15	88	0	103	0	56	200	256	103	256	359		7:15-7:30
7:30-7:45	0	0	0	0	0	0	0	0	16	119	0	135	0	87	200	287	135	287	422		7:30-7:45
7:45-8:00	0	0	0	0	0	0	0	0	25	130	0	155	0	61	181	242	155	242	407		7:45-8:00
8:00-8:15	0	0	0	0	0	0	0	0	33	126	0	159	0	74	215	289	159	289	447		8:00-8:15
8:15-8:30	0	0	0	0	0	0	0	0	35	189	0	224	0	60	174	234	224	234	458		8:15-8:30
8:30-8:45	0	0	0	0	0	0	0	0	49	160	0	209	0	61	188	249	209	249	458		8:30-8:45
8:45-9:00	0	0	0	0	0	0	0	0	53	154	0	207	0	60	107	167	207	167	374		8:45-9:00
3 Hour Totals	0	0	0	0	0	0	0	0	395	1,502	0	1,897	0	626	2,146	2,772	1,897	2,772	4,669		
Four Totals																					
6:00-7:00	0	0	0	0	0	0	0	0	113	430	0	543	0	153	655	788	543	788	1,331	0.93	6:00-7:00
6:15-7:15	0	0	0	0	0	0	0	0	121	422	0	543	0	162	750	912	543	912	1,455	0.83	6:15-7:15
6:30-7:30	0	0	0	0	0	0	0	0	110	395	0	505	0	189	806	995	505	995	1,500	0.91	6:30-7:30
6:45-7:45	0	0	0	0	0	0	0	0	98	398	0	496	0	229	808	1,037	496	1,037	1,533	0.93	6:45-7:45
7:00-8:00	0	0	0	0	0	0	0	0	102	444	0	546	0	238	807	1,045	546	1,045	1,591	0.93	7:00-8:00
7:15-8:15	0	0	0	0	0	0	0	0	96	482	0	581	0	268	796	1,064	581	1,064	1,625	0.91	7:15-8:15
7:30-8:30	0	0	0	0	0	0	0	0	118	562	0	682	0	262	770	1,032	682	1,032	1,714	0.91	7:30-8:30
7:45-8:45	0	0	0	0	0	0	0	0	152	604	0	756	0	256	758	1,014	756	1,014	1,770	0.87	7:45-8:45
8:00-9:00	0	0	0	0	0	0	0	0	170	528	0	798	0	255	684	939	798	939	1,737	0.95	8:00-9:00
AM Peak 7:45-8:45	0	0	0	0	0	0	0	0	152	604	0	756	0	256	758	1,014	756	1,014	1,770	0.87	AM Peak 7:45-8:45
PM																					
4:00-4:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		4:00-4:15
4:15-4:30	0	0	0	0	0	0	0	0	60	127	0	187	0	134	136	270	187	270	457		4:15-4:30
4:30-4:45	0	0	0	0	0	0	0	0	67	148	0	215	0	131	230	361	215	361	576		4:30-4:45
4:45-5:00	0	0	0	0	0	0	0	0	61	139	0	200	0	138	149	287	200	287	517		4:45-5:00
5:00-5:15	0	0	0	0	0	0	0	0	61	136	0	197	0	189	185	374	197	374	571		5:00-5:15
5:15-5:30	0	0	0	0	0	0	0	0	84	122	0	206	0	161	150	311	206	311	517		5:15-5:30
5:30-5:45	0	0	0	0	0	0	0	0	77	161	0	238	0	135	152	287	238	287	525		5:30-5:45
5:45-6:00	0	0	0	0	0	0	0	0	75	143	0	218	0	163	218	381	218	381	599		5:45-6:00
6:00-6:15	0	0	0	0	0	0	0	0	79	171	0	250	0	139	195	334	250	334	584		6:00-6:15
6:15-6:30	0	0	0	0	0	0	0	0	91	162	0	253	0	122	239	361	253	361	614		6:15-6:30
6:30-6:45	0	0	0	0	0	0	0	0	74	159	0	233	0	139	191	330	233	330	563		6:30-6:45
6:45-7:00	0	0	0	0	0	0	0	0	71	145	0	216	0	129	191	320	216	320	536		6:45-7:00
3 Hour Totals	0	0	0	0	0	0	0	0	830	1,623	0	2,453	0	1,374	2,052	3,426	2,453	3,426	5,879		
1 Hour Totals																					
4:00-5:00	0	0	0	0	0	0	0	0	218	424	0	642	0	403	515	918	642	918	1,560	0.68	4:00-5:00
4:15-5:15	0	0	0	0	0	0	0	0	279	560	0	839	0	582	700	1,292	839	1,292	2,131	0.92	4:15-5:15
4:30-5:30	0	0	0	0	0	0	0	0	303	545	0	848	0	619	714	1,333	848	1,333	2,181	0.95	4:30-5:30
4:45-5:45	0	0	0	0	0	0	0	0	313	558	0	871	0	623	643	1,266	871	1,266	2,140	0.94	4:45-5:45
5:00-6:00	0	0	0	0	0	0	0	0	297	562	0	859	0	646	716	1,362	859	1,362	2,222	0.93	5:00-6:00
5:15-6:15	0	0	0	0	0	0	0	0	315	597	0	912	0	598	725	1,323	912	1,323	2,235	0.93	5:15-6:15
5:30-6:30	0	0	0	0	0	0	0	0	327	637	0	959	0	559	814	1,373	959	1,373	2,332	0.95	5:30-6:30
5:45-6:45	0	0	0	0	0	0	0	0	319	635	0	954	0	567	849	1,406	954	1,406	2,360	0.96	5:45-6:45
6:00-7:00	0	0	0	0	0	0	0	0	315	637	0	952	0	523	822	1,345	952	1,345	2,297	0.94	6:00-7:00
PM Peak 5:45-6:45	0	0	0	0	0	0	0	0	319	635	0	954	0	567	849	1,406	954	1,406	2,360	0.96	PM Peak 5:45-6:45

Appendix B

Existing Levels of Service

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	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95			1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	0.98			1.00	0.85	1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5012		1770	3476			1797	1583	1770	1723	
Flt Permitted	0.39	1.00		0.09	1.00			0.82	1.00	0.73	1.00	
Satd. Flow (perm)	718	5012		160	3476			1521	1583	1356	1723	
Volume (vph)	42	1510	161	100	586	79	31	11	34	22	9	9
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	44	1589	169	105	617	83	33	12	36	23	9	9
Lane Group Flow (vph)	44	1758	0	105	700	0	0	45	36	23	18	0
Turn Type	pm+pt			pm+pt			Perm		pm+ov	Perm		
Protected Phases	7	4		3	8			2	3		6	
Permitted Phases	4			8			2		2	6		
Actuated Green, G (s)	67.4	63.5		76.0	68.1			16.0	24.5	16.0	16.0	
Effective Green, g (s)	67.4	63.5		76.0	68.1			16.0	24.5	16.0	16.0	
Actuated g/C Ratio	0.67	0.64		0.76	0.68			0.16	0.24	0.16	0.16	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	525	3183		258	2367			243	451	217	276	
v/s Ratio Prot	0.00	c0.35		c0.03	0.20				0.01		0.01	
v/s Ratio Perm	0.05			0.27				c0.03	0.02	0.02		
v/c Ratio	0.08	0.55		0.41	0.30			0.19	0.08	0.11	0.07	
Uniform Delay, d1	5.4	10.3		6.9	5.4			35.4	29.1	35.9	35.7	
Progression Factor	1.00	1.00		1.40	2.24			0.96	1.43	1.00	1.00	
Incremental Delay, d2	0.1	0.7		1.0	0.3			0.1	0.0	0.2	0.1	
Delay (s)	5.5	11.0		10.6	14.6			35.1	41.7	36.1	35.8	
Level of Service	A	B		B	B			D	D	D	D	
Approach Delay (s)		10.8			14.1			38.0			35.9	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM Average Control Delay	13.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
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	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.95		1.00	0.95		0.97	0.95	1.00	1.00	0.91	
Frt	1.00	1.00		1.00	0.96		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	3539		1770	3402		3433	3539	1583	1770	5085	
Flt Permitted	0.95	1.00		0.32	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	3539		602	3402		3433	3539	1583	1770	5085	
Volume (vph)	480	531	0	81	182	64	367	1079	151	57	824	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	505	559	0	85	192	67	386	1136	159	60	867	0
Lane Group Flow (vph)	505	559	0	85	259	0	386	1136	159	60	867	0
Turn Type	Prot			pm+pt			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases				8					2			
Actuated Green, G (s)	15.0	20.8		21.0	13.4		14.4	44.1	44.1	7.5	37.2	
Effective Green, g (s)	15.0	21.8		23.0	14.4		15.4	45.1	45.1	8.5	38.2	
Actuated g/C Ratio	0.16	0.22		0.23	0.14		0.15	0.45	0.45	0.08	0.38	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	549	772		299	490		529	1596	714	150	1942	
v/s Ratio Prot	c0.15	c0.16		0.03	0.08		c0.11	c0.32		0.03	0.17	
v/s Ratio Perm				0.05					0.10			
v/c Ratio	0.92	0.72		0.36	0.53		0.73	0.71	0.22	0.40	0.45	
Uniform Delay, d1	41.4	36.3		31.2	39.7		40.3	22.2	16.8	43.3	23.0	
Progression Factor	0.84	0.74		1.00	1.00		1.02	1.32	1.62	1.00	1.00	
Incremental Delay, d2	16.4	2.9		0.9	1.0		4.3	2.3	0.6	1.7	0.7	
Delay (s)	53.3	29.6		32.1	40.7		45.2	31.6	27.8	45.1	23.8	
Level of Service	D	C		C	D		D	C	C	D	C	
Approach Delay (s)		40.9			38.6			34.3			25.1	
Approach LOS		D			D			C			C	

Intersection Summary

HCM Average Control Delay	34.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.9%	ICU Level of Service	B
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	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00	1.00	0.97	1.00		1.00	0.91		1.00	0.91	1.00
Frt		1.00	0.85	1.00	0.90		1.00	0.99		1.00	1.00	0.85
Flt Protected		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1780	1583	3433	1675		1770	5047		1770	5085	1583
Flt Permitted		0.96	1.00	0.95	1.00		0.10	1.00		0.11	1.00	1.00
Satd. Flow (perm)		1780	1583	3433	1675		195	5047		206	5085	1583
Volume (vph)	25	2	164	273	31	65	346	1506	80	35	1350	73
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	26	2	173	287	33	68	364	1585	84	37	1421	77
Lane Group Flow (vph)	0	28	173	287	101	0	364	1669	0	37	1421	77
Turn Type	Split		pt+ov	Split			pm+pt			pm+pt		Free
Protected Phases	4	4	4 5	3	3		5	2		1	6	
Permitted Phases							2			6		Free
Actuated Green, G (s)		10.9	27.9	13.0	13.0		61.1	54.3		48.9	45.1	100.0
Effective Green, g (s)		10.9	26.9	13.0	13.0		64.1	57.3		50.9	48.1	100.0
Actuated g/C Ratio		0.11	0.27	0.13	0.13		0.64	0.57		0.51	0.48	1.00
Clearance Time (s)		4.0		4.0	4.0		3.0	7.0		3.0	7.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		194	426	446	219		314	2892		149	2446	1583
v/s Ratio Prot		0.02	c0.11	c0.08	0.06		c0.14	0.33		0.01	0.28	
v/s Ratio Perm							c0.60			0.12		0.05
v/c Ratio		0.14	0.41	0.64	0.46		1.16	0.58		0.25	0.58	0.05
Uniform Delay, d1		40.3	30.0	41.3	40.3		25.4	13.6		12.8	16.7	0.0
Progression Factor		0.85	0.92	1.00	1.00		1.00	1.00		0.84	0.62	1.00
Incremental Delay, d2		0.8	0.6	3.2	1.6		101.2	0.8		0.8	0.9	0.1
Delay (s)		34.6	28.2	44.5	41.8		126.6	14.5		11.5	12.6	0.1
Level of Service		C	C	D	D		F	B		B	B	A
Approach Delay (s)		29.1			43.8			34.5			11.9	
Approach LOS		C			D			C			B	

Intersection Summary

HCM Average Control Delay	26.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.5%	ICU Level of Service	C

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				
Lane Util. Factor					0.95			0.95				
Frt					1.00			1.00				
Flt Protected					1.00			0.99				
Satd. Flow (prot)					3539			3486				
Flt Permitted					1.00			0.99				
Satd. Flow (perm)					3539			3486				
Volume (vph)	0	0	0	0	222	0	242	557	0	0	0	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	0	234	0	255	586	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	234	0	0	841	0	0	0	0
Turn Type							Perm					
Protected Phases					8			2				
Permitted Phases							2					
Actuated Green, G (s)					36.0			56.0				
Effective Green, g (s)					36.0			56.0				
Actuated g/C Ratio					0.36			0.56				
Clearance Time (s)					4.0			4.0				
Lane Grp Cap (vph)					1274			1952				
v/s Ratio Prot					c0.07							
v/s Ratio Perm								c0.24				
v/c Ratio					0.18			0.43				
Uniform Delay, d1					21.9			12.8				
Progression Factor					1.00			1.33				
Incremental Delay, d2					0.3			0.6				
Delay (s)					22.2			17.5				
Level of Service					C			B				
Approach Delay (s)		0.0			22.2			17.5			0.0	
Approach LOS		A			C			B			A	

Intersection Summary			
HCM Average Control Delay	18.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.33		
Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	36.7%	ICU Level of Service	A

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	
Lane Util. Factor				0.91	0.91						0.91	
Frt				1.00	1.00						1.00	
Flt Protected				0.95	0.99						1.00	
Satd. Flow (prot)				1610	3353						5085	
Flt Permitted				0.95	0.99						1.00	
Satd. Flow (perm)				1610	3353						5085	
Volume (vph)	0	0	0	245	250	0	0	0	0	0	744	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	258	263	0	0	0	0	0	783	0
Lane Group Flow (vph)	0	0	0	183	338	0	0	0	0	0	783	0
Turn Type				Perm								
Protected Phases					8						6	
Permitted Phases				8								
Actuated Green, G (s)				36.0	36.0						56.0	
Effective Green, g (s)				36.0	36.0						56.0	
Actuated g/C Ratio				0.36	0.36						0.56	
Clearance Time (s)				4.0	4.0						4.0	
Lane Grp Cap (vph)				580	1207						2848	
v/s Ratio Prot											c0.15	
v/s Ratio Perm				c0.11	0.10							
v/c Ratio				0.32	0.28						0.27	
Uniform Delay, d1				23.1	22.8						11.4	
Progression Factor				1.41	0.95						0.86	
Incremental Delay, d2				1.4	0.6						0.2	
Delay (s)				33.9	22.2						10.0	
Level of Service				C	C						B	
Approach Delay (s)		0.0			26.3			0.0			10.0	
Approach LOS		A			C			A			B	

Intersection Summary			
HCM Average Control Delay	16.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.29		
Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	31.6%	ICU Level of Service	A

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							0.91	0.91	
Frt		1.00	0.85							1.00	1.00	
Flt Protected		1.00	1.00							0.95	0.97	
Satd. Flow (prot)		1863	1583							1610	3292	
Flt Permitted		1.00	1.00							0.95	0.97	
Satd. Flow (perm)		1863	1583							1610	3292	
Volume (vph)	0	604	152	0	0	0	0	0	0	758	256	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	636	160	0	0	0	0	0	0	798	269	0
Lane Group Flow (vph)	0	636	160	0	0	0	0	0	0	399	668	0
Turn Type			Perm							Perm		
Protected Phases		4									6	
Permitted Phases			4							6		
Actuated Green, G (s)		54.0	54.0							38.0	38.0	
Effective Green, g (s)		54.0	54.0							38.0	38.0	
Actuated g/C Ratio		0.54	0.54							0.38	0.38	
Clearance Time (s)		4.0	4.0							4.0	4.0	
Lane Grp Cap (vph)		1006	855							612	1251	
v/s Ratio Prot		c0.34										
v/s Ratio Perm			0.10							c0.25	0.20	
v/c Ratio		0.63	0.19							0.65	0.53	
Uniform Delay, d1		16.1	11.8							25.5	24.1	
Progression Factor		1.00	1.00							0.38	0.44	
Incremental Delay, d2		3.0	0.5							5.2	1.6	
Delay (s)		19.1	12.3							14.9	12.3	
Level of Service		B	B							B	B	
Approach Delay (s)		17.7			0.0			0.0			13.3	
Approach LOS		B			A			A			B	

Intersection Summary			
HCM Average Control Delay	15.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	62.2%	ICU Level of Service	B

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				
Lane Util. Factor		0.95						0.95				
Frt		1.00						1.00				
Flt Protected		0.97						1.00				
Satd. Flow (prot)		3441						3539				
Flt Permitted		0.97						1.00				
Satd. Flow (perm)		3441						3539				
Volume (vph)	796	603	0	0	0	0	0	450	0	0	0	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	838	635	0	0	0	0	0	474	0	0	0	0
Lane Group Flow (vph)	0	1473	0	0	0	0	0	474	0	0	0	0
Turn Type	Perm											
Protected Phases		4						2				
Permitted Phases	4											
Actuated Green, G (s)		54.0						38.0				
Effective Green, g (s)		54.0						38.0				
Actuated g/C Ratio		0.54						0.38				
Clearance Time (s)		4.0						4.0				
Lane Grp Cap (vph)		1858						1345				
v/s Ratio Prot								c0.13				
v/s Ratio Perm		c0.43										
v/c Ratio		0.79						0.35				
Uniform Delay, d1		18.5						22.2				
Progression Factor		1.01						1.00				
Incremental Delay, d2		3.0						0.7				
Delay (s)		21.7						22.9				
Level of Service		C						C				
Approach Delay (s)		21.7			0.0			22.9			0.0	
Approach LOS		C			A			C			A	

Intersection Summary			
HCM Average Control Delay	22.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	66.2%	ICU Level of Service	B

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	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95			1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	1.00			1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5073		1770	3535			1779	1583	1770	1682	
Flt Permitted	0.09	1.00		0.18	1.00			0.69	1.00	0.55	1.00	
Satd. Flow (perm)	163	5073		329	3535			1290	1583	1028	1682	
Volume (vph)	7	1159	19	54	1626	13	127	9	66	82	22	40
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	7	1220	20	57	1712	14	134	9	69	86	23	42
Lane Group Flow (vph)	7	1240	0	57	1726	0	0	143	69	86	65	0
Turn Type	pm+pt			pm+pt			Perm		pm+ov	Perm		
Protected Phases	7	4		3	8			2	3		6	
Permitted Phases	4			8			2		2	6		
Actuated Green, G (s)	65.9	64.7		74.0	68.8			18.0	23.3	18.0	18.0	
Effective Green, g (s)	65.9	64.7		74.0	68.8			18.0	23.3	18.0	18.0	
Actuated g/C Ratio	0.66	0.65		0.74	0.69			0.18	0.23	0.18	0.18	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	127	3282		320	2432			232	432	185	303	
v/s Ratio Prot	0.00	0.24		0.01	c0.49				c0.01		0.04	
v/s Ratio Perm	0.04			0.12				c0.11	0.04	0.08		
v/c Ratio	0.06	0.38		0.18	0.71			0.62	0.16	0.46	0.21	
Uniform Delay, d1	8.7	8.2		4.3	9.5			37.8	30.6	36.7	35.0	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	0.4		0.3	1.8			4.8	0.2	1.8	0.4	
Delay (s)	8.9	8.6		4.6	11.3			42.6	30.7	38.5	35.3	
Level of Service	A	A		A	B			D	C	D	D	
Approach Delay (s)		8.6			11.1			38.7			37.2	
Approach LOS		A			B			D			D	

Intersection Summary

HCM Average Control Delay	13.1	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	69.0%	ICU Level of Service	B
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	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.95		1.00	0.95		0.97	0.95	1.00	1.00	0.91	
Frt	1.00	1.00		1.00	0.98		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	3539		1770	3474		3433	3539	1583	1770	5085	
Flt Permitted	0.95	1.00		0.37	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	3539		684	3474		3433	3539	1583	1770	5085	
Volume (vph)	340	345	0	160	503	70	521	1018	200	87	1394	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	358	363	0	168	529	74	548	1072	211	92	1467	0
Lane Group Flow (vph)	358	363	0	168	603	0	548	1072	211	92	1467	0
Turn Type	Prot			pm+pt			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases				8					2			
Actuated Green, G (s)	12.9	18.2		28.9	17.1		15.0	50.5	50.5	9.5	45.0	
Effective Green, g (s)	13.9	19.2		30.9	18.1		16.0	51.5	51.5	10.5	46.0	
Actuated g/C Ratio	0.13	0.17		0.28	0.16		0.15	0.47	0.47	0.10	0.42	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	434	618		319	572		499	1657	741	169	2126	
v/s Ratio Prot	c0.10	0.10		0.06	c0.17		c0.16	0.30		0.05	c0.29	
v/s Ratio Perm				0.09					0.13			
v/c Ratio	0.82	0.59		0.53	1.05		1.10	0.65	0.28	0.54	0.69	
Uniform Delay, d1	46.9	41.8		31.5	46.0		47.0	22.3	17.9	47.5	26.2	
Progression Factor	1.00	1.00		1.00	1.00		0.75	1.24	1.14	1.00	1.00	
Incremental Delay, d2	12.1	1.4		1.6	52.7		66.1	1.6	0.8	3.6	1.9	
Delay (s)	58.9	43.2		33.2	98.7		101.3	29.2	21.2	51.0	28.0	
Level of Service	E	D		C	F		F	C	C	D	C	
Approach Delay (s)		51.0			84.4			49.8			29.4	
Approach LOS		D			F			D			C	

Intersection Summary

HCM Average Control Delay	48.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	84.5%	ICU Level of Service	D
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	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00	1.00	0.97	1.00		1.00	0.91		1.00	0.91	1.00
Frt		1.00	0.85	1.00	0.89		1.00	0.98		1.00	1.00	0.85
Flt Protected		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1783	1583	3433	1666		1770	5005		1770	5085	1583
Flt Permitted		0.96	1.00	0.95	1.00		0.07	1.00		0.08	1.00	1.00
Satd. Flow (perm)		1783	1583	3433	1666		123	5005		150	5085	1583
Volume (vph)	75	9	521	191	24	56	220	1550	182	92	1866	34
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	79	9	548	201	25	59	232	1632	192	97	1964	36
Lane Group Flow (vph)	0	88	548	201	84	0	232	1824	0	97	1964	36
Turn Type	Split		pt+ov	Split			pm+pt			pm+pt		Free
Protected Phases	4	4	4 5	3	3		5	2		1	6	
Permitted Phases							2			6		Free
Actuated Green, G (s)		12.0	31.0	11.5	11.5		71.5	60.2		61.8	53.5	110.0
Effective Green, g (s)		12.0	30.0	11.5	11.5		74.5	63.2		63.8	56.5	110.0
Actuated g/C Ratio		0.11	0.27	0.10	0.10		0.68	0.57		0.58	0.51	1.00
Clearance Time (s)		4.0		4.0	4.0		3.0	7.0		3.0	7.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		195	432	359	174		293	2876		195	2612	1583
v/s Ratio Prot		0.05	c0.35	c0.06	0.05		0.10	0.36		0.03	0.39	
v/s Ratio Perm							c0.44			0.26		0.02
v/c Ratio		0.45	1.27	0.56	0.48		0.79	0.63		0.50	0.75	0.02
Uniform Delay, d1		45.9	40.0	46.8	46.4		30.7	15.7		12.7	21.2	0.0
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.73	1.00
Incremental Delay, d2		1.7	138.1	1.9	2.1		13.6	1.1		1.7	1.8	0.0
Delay (s)		47.6	178.1	48.7	48.6		44.3	16.7		14.4	38.5	0.0
Level of Service		D	F	D	D		D	B		B	D	A
Approach Delay (s)		160.0			48.7			19.8			36.7	
Approach LOS		F			D			B			D	

Intersection Summary			
HCM Average Control Delay	46.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	87.6%	ICU Level of Service	D
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				
Lane Util. Factor					0.95			0.95				
Frt					1.00			1.00				
Flt Protected					1.00			0.99				
Satd. Flow (prot)					3539			3487				
Flt Permitted					1.00			0.99				
Satd. Flow (perm)					3539			3487				
Volume (vph)	0	0	0	0	615	0	310	719	0	0	0	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	0	647	0	326	757	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	647	0	0	1083	0	0	0	0
Turn Type							Perm					
Protected Phases					8			2				
Permitted Phases							2					
Actuated Green, G (s)					49.0			53.0				
Effective Green, g (s)					49.0			53.0				
Actuated g/C Ratio					0.45			0.48				
Clearance Time (s)					4.0			4.0				
Lane Grp Cap (vph)					1576			1680				
v/s Ratio Prot					c0.18							
v/s Ratio Perm								c0.31				
v/c Ratio					0.41			0.64				
Uniform Delay, d1					20.7			21.4				
Progression Factor					1.00			0.97				
Incremental Delay, d2					0.8			1.7				
Delay (s)					21.5			22.6				
Level of Service					C			C				
Approach Delay (s)		0.0			21.5			22.6			0.0	
Approach LOS		A			C			C			A	

Intersection Summary			
HCM Average Control Delay	22.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.53		
Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	55.0%	ICU Level of Service	A

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	
Lane Util. Factor				0.91	0.91						0.91	
Frt				1.00	1.00						1.00	
Flt Protected				0.95	0.97						1.00	
Satd. Flow (prot)				1610	3296						5085	
Flt Permitted				0.95	0.97						1.00	
Satd. Flow (perm)				1610	3296						5085	
Volume (vph)	0	0	0	678	254	0	0	0	0	0	587	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	714	267	0	0	0	0	0	618	0
Lane Group Flow (vph)	0	0	0	357	624	0	0	0	0	0	618	0
Turn Type				Perm								
Protected Phases					8						6	
Permitted Phases				8								
Actuated Green, G (s)				49.0	49.0						53.0	
Effective Green, g (s)				49.0	49.0						53.0	
Actuated g/C Ratio				0.45	0.45						0.48	
Clearance Time (s)				4.0	4.0						4.0	
Lane Grp Cap (vph)				717	1468						2450	
v/s Ratio Prot											c0.12	
v/s Ratio Perm				c0.22	0.19							
v/c Ratio				0.50	0.43						0.25	
Uniform Delay, d1				21.7	20.9						16.8	
Progression Factor				0.36	0.49						1.56	
Incremental Delay, d2				2.2	0.8						0.1	
Delay (s)				10.1	11.0						26.4	
Level of Service				B	B						C	
Approach Delay (s)		0.0			10.7			0.0			26.4	
Approach LOS		A			B			A			C	

Intersection Summary			
HCM Average Control Delay	16.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.37		
Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	38.4%	ICU Level of Service	A

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							0.91	0.91	
Frt		1.00	0.85							1.00	1.00	
Flt Protected		1.00	1.00							0.95	0.98	
Satd. Flow (prot)		1863	1583							1610	3328	
Flt Permitted		1.00	1.00							0.95	0.98	
Satd. Flow (perm)		1863	1583							1610	3328	
Volume (vph)	0	635	319	0	0	0	0	0	0	849	557	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	668	336	0	0	0	0	0	0	894	586	0
Lane Group Flow (vph)	0	668	336	0	0	0	0	0	0	541	939	0
Turn Type			Perm							Perm		
Protected Phases		4									6	
Permitted Phases			4							6		
Actuated Green, G (s)		64.0	64.0							38.0	38.0	
Effective Green, g (s)		64.0	64.0							38.0	38.0	
Actuated g/C Ratio		0.58	0.58							0.35	0.35	
Clearance Time (s)		4.0	4.0							4.0	4.0	
Lane Grp Cap (vph)		1084	921							556	1150	
v/s Ratio Prot		c0.36										
v/s Ratio Perm			0.21							c0.34	0.28	
v/c Ratio		0.62	0.36							0.97	0.82	
Uniform Delay, d1		15.0	12.2							35.5	32.8	
Progression Factor		1.00	1.00							0.82	0.71	
Incremental Delay, d2		2.6	1.1							31.5	6.3	
Delay (s)		17.6	13.3							53.4	29.6	
Level of Service		B	B							D	C	
Approach Delay (s)		16.2			0.0			0.0			38.3	
Approach LOS		B			A			A			D	

Intersection Summary			
HCM Average Control Delay	29.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.0%	ICU Level of Service	B

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				
Lane Util. Factor		0.95						0.95				
Frt		1.00						1.00				
Flt Protected		0.98						1.00				
Satd. Flow (prot)		3455						3539				
Flt Permitted		0.98						1.00				
Satd. Flow (perm)		3455						3539				
Volume (vph)	643	673	0	0	0	0	0	251	0	0	0	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	677	708	0	0	0	0	0	264	0	0	0	0
Lane Group Flow (vph)	0	1385	0	0	0	0	0	264	0	0	0	0
Turn Type	Perm											
Protected Phases		4						2				
Permitted Phases	4											
Actuated Green, G (s)		64.0						38.0				
Effective Green, g (s)		64.0						38.0				
Actuated g/C Ratio		0.58						0.35				
Clearance Time (s)		4.0						4.0				
Lane Grp Cap (vph)		2010						1223				
v/s Ratio Prot								c0.07				
v/s Ratio Perm		c0.40										
v/c Ratio		0.69						0.22				
Uniform Delay, d1		16.1						25.5				
Progression Factor		1.19						1.00				
Incremental Delay, d2		1.4						0.4				
Delay (s)		20.4						25.9				
Level of Service		C						C				
Approach Delay (s)		20.4			0.0			25.9			0.0	
Approach LOS		C			A			C			A	

Intersection Summary			
HCM Average Control Delay	21.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.51		
Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.2%	ICU Level of Service	A

c Critical Lane Group

Appendix C

Background Levels of Service

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	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95			1.00	1.00	1.00	1.00	
Frt	1.00	0.97		1.00	0.98			1.00	0.85	1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1770	4952		3539	3476			1789	1583	1770	1723	
Flt Permitted	0.39	1.00		0.95	1.00			0.75	1.00	0.71	1.00	
Satd. Flow (perm)	718	4952		3539	3476			1400	1583	1328	1723	
Volume (vph)	42	1510	320	1009	586	79	53	11	77	22	9	9
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	44	1589	337	1062	617	83	56	12	81	23	9	9
Lane Group Flow (vph)	44	1926	0	1062	700	0	0	68	81	23	18	0
Turn Type	pm+pt			Prot			Perm		pm+ov	Perm		
Protected Phases	7	4		3	8			2	3		6	
Permitted Phases	4						2		2	6		
Actuated Green, G (s)	42.0	39.6		40.1	77.3			8.3	48.4	8.3	8.3	
Effective Green, g (s)	42.0	39.6		40.1	77.3			8.3	48.4	8.3	8.3	
Actuated g/C Ratio	0.42	0.40		0.40	0.77			0.08	0.48	0.08	0.08	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	327	1961		1419	2687			116	829	110	143	
v/s Ratio Prot	0.00	c0.39		c0.30	0.20				0.04		0.01	
v/s Ratio Perm	0.05							c0.05	0.01	0.02		
v/c Ratio	0.13	0.98		0.75	0.26			0.59	0.10	0.21	0.13	
Uniform Delay, d1	17.9	29.9		25.6	3.2			44.2	14.0	42.8	42.5	
Progression Factor	1.00	1.00		0.67	0.31			1.22	0.68	1.00	1.00	
Incremental Delay, d2	0.2	16.2		2.9	0.2			6.2	0.0	0.9	0.4	
Delay (s)	18.1	46.1		20.1	1.2			60.3	9.5	43.7	42.9	
Level of Service	B	D		C	A			E	A	D	D	
Approach Delay (s)		45.4			12.6			32.7			43.4	
Approach LOS		D			B			C			D	

Intersection Summary			
HCM Average Control Delay	30.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	87.2%	ICU Level of Service	D
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	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.95		1.00	0.95		0.94	0.95	1.00	1.00	0.91	
Frt	1.00	1.00		1.00	0.97		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	3539		1770	3424		4990	3539	1583	1770	5085	
Flt Permitted	0.95	1.00		0.65	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	3539		1202	3424		4990	3539	1583	1770	5085	
Volume (vph)	491	542	0	113	230	64	1196	1101	151	57	1030	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	517	571	0	119	242	67	1259	1159	159	60	1084	0
Lane Group Flow (vph)	517	571	0	119	309	0	1259	1159	159	60	1084	0
Turn Type	Prot			pm+pt			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases				8					2			
Actuated Green, G (s)	16.1	22.3		13.2	13.2		27.8	45.9	45.9	4.8	22.9	
Effective Green, g (s)	17.1	23.3		14.2	14.2		28.8	46.9	46.9	5.8	23.9	
Actuated g/C Ratio	0.17	0.23		0.14	0.14		0.29	0.47	0.47	0.06	0.24	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	587	825		216	486		1437	1660	742	103	1215	
v/s Ratio Prot	c0.15	0.16		0.04	c0.09		c0.25	0.33		0.03	c0.21	
v/s Ratio Perm				0.03					0.10			
v/c Ratio	0.88	0.69		0.55	0.64		0.88	0.70	0.21	0.58	0.89	
Uniform Delay, d1	40.5	35.1		39.7	40.5		33.9	21.0	15.7	45.9	36.8	
Progression Factor	1.30	1.35		1.00	1.00		0.48	0.20	0.08	1.00	1.00	
Incremental Delay, d2	7.4	1.2		3.0	2.7		4.2	1.3	0.3	8.1	8.6	
Delay (s)	59.8	48.6		42.7	43.2		20.4	5.4	1.6	54.1	45.4	
Level of Service	E	D		D	D		C	A	A	D	D	
Approach Delay (s)		53.9			43.0			12.5			45.8	
Approach LOS		D			D			B			D	

Intersection Summary			
HCM Average Control Delay	30.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	81.8%	ICU Level of Service	D
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	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00	0.88	0.95	0.95	1.00	1.00	0.91		1.00	0.91	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.96	1.00	0.95	0.97	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1785	2787	1681	1715	1583	1770	5060		1770	5085	1583
Flt Permitted		0.96	1.00	0.95	0.97	1.00	0.10	1.00		0.11	1.00	1.00
Satd. Flow (perm)		1785	2787	1681	1715	1583	184	5060		205	5085	1583
Volume (vph)	47	7	268	273	63	65	436	2335	80	35	1372	311
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	49	7	282	287	66	68	459	2458	84	37	1444	327
Lane Group Flow (vph)	0	56	282	172	181	68	459	2542	0	37	1444	327
Turn Type	Split		pt+ov	Split		pm+ov	pm+pt			pm+pt		Free
Protected Phases	4	4	4 5	3	3	1	5	2		1	6	
Permitted Phases						3	2			6		Free
Actuated Green, G (s)		10.1	38.4	14.2	14.2	18.2	60.7	53.7		37.4	33.4	100.0
Effective Green, g (s)		10.1	37.4	14.2	14.2	17.2	63.7	56.7		39.4	36.4	100.0
Actuated g/C Ratio		0.10	0.37	0.14	0.14	0.17	0.64	0.57		0.39	0.36	1.00
Clearance Time (s)		4.0		4.0	4.0	3.0	3.0	7.0		3.0	7.0	
Vehicle Extension (s)		3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		180	1042	239	244	272	487	2869		128	1851	1583
v/s Ratio Prot		0.03	c0.10	0.10	c0.11	0.01	c0.22	0.50		0.01	0.28	
v/s Ratio Perm						0.04	c0.38			0.11		0.21
v/c Ratio		0.31	0.27	0.72	0.74	0.25	0.94	0.89		0.29	0.78	0.21
Uniform Delay, d1		41.7	21.8	41.0	41.1	35.8	28.8	18.8		21.4	28.2	0.0
Progression Factor		1.13	0.45	1.00	1.00	1.00	1.00	1.00		0.18	0.18	1.00
Incremental Delay, d2		0.6	0.1	9.9	11.5	0.5	26.9	4.5		0.6	1.6	0.1
Delay (s)		47.7	9.9	50.9	52.6	36.3	55.6	23.3		4.5	6.7	0.1
Level of Service		D	A	D	D	D	E	C		A	A	A
Approach Delay (s)		16.1			49.3			28.3			5.4	
Approach LOS		B			D			C			A	

Intersection Summary			
HCM Average Control Delay	21.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.7%	ICU Level of Service	C
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				
Lane Util. Factor					0.95			0.95				
Frt					1.00			1.00				
Flt Protected					1.00			0.99				
Satd. Flow (prot)					3539			3500				
Flt Permitted					1.00			0.99				
Satd. Flow (perm)					3539			3500				
Volume (vph)	0	0	0	0	222	0	242	842	0	0	0	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	0	234	0	255	886	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	234	0	0	1141	0	0	0	0
Turn Type							Perm					
Protected Phases					8			2				
Permitted Phases							2					
Actuated Green, G (s)					36.0			56.0				
Effective Green, g (s)					36.0			56.0				
Actuated g/C Ratio					0.36			0.56				
Clearance Time (s)					4.0			4.0				
Lane Grp Cap (vph)					1274			1960				
v/s Ratio Prot					c0.07							
v/s Ratio Perm								c0.33				
v/c Ratio					0.18			0.58				
Uniform Delay, d1					21.9			14.4				
Progression Factor					1.00			1.42				
Incremental Delay, d2					0.3			0.9				
Delay (s)					22.2			21.3				
Level of Service					C			C				
Approach Delay (s)		0.0			22.2			21.3			0.0	
Approach LOS		A			C			C			A	

Intersection Summary			
HCM Average Control Delay	21.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.43		
Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	45.0%	ICU Level of Service	A

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	
Lane Util. Factor				0.91	0.91						0.91	
Frt				1.00	1.00						1.00	
Flt Protected				0.95	0.99						1.00	
Satd. Flow (prot)				1610	3353						5085	
Flt Permitted				0.95	0.99						1.00	
Satd. Flow (perm)				1610	3353						5085	
Volume (vph)	0	0	0	245	250	0	0	0	0	0	787	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	258	263	0	0	0	0	0	828	0
Lane Group Flow (vph)	0	0	0	183	338	0	0	0	0	0	828	0
Turn Type				Perm								
Protected Phases					8						6	
Permitted Phases				8								
Actuated Green, G (s)				36.0	36.0						56.0	
Effective Green, g (s)				36.0	36.0						56.0	
Actuated g/C Ratio				0.36	0.36						0.56	
Clearance Time (s)				4.0	4.0						4.0	
Lane Grp Cap (vph)				580	1207						2848	
v/s Ratio Prot											c0.16	
v/s Ratio Perm				c0.11	0.10							
v/c Ratio				0.32	0.28						0.29	
Uniform Delay, d1				23.1	22.8						11.6	
Progression Factor				1.12	0.99						0.30	
Incremental Delay, d2				1.4	0.5						0.2	
Delay (s)				27.2	21.4						3.7	
Level of Service				C	C						A	
Approach Delay (s)		0.0			23.5			0.0			3.7	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM Average Control Delay	11.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.30		
Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	32.5%	ICU Level of Service	A

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							0.91	0.91	
Frt		1.00	0.85							1.00	1.00	
Flt Protected		1.00	1.00							0.95	0.97	
Satd. Flow (prot)		1863	1583							1610	3290	
Flt Permitted		1.00	1.00							0.95	0.97	
Satd. Flow (perm)		1863	1583							1610	3290	
Volume (vph)	0	889	152	0	0	0	0	0	0	801	256	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	936	160	0	0	0	0	0	0	843	269	0
Lane Group Flow (vph)	0	936	160	0	0	0	0	0	0	422	690	0
Turn Type			Perm							Perm		
Protected Phases		4									6	
Permitted Phases			4							6		
Actuated Green, G (s)		54.0	54.0							38.0	38.0	
Effective Green, g (s)		54.0	54.0							38.0	38.0	
Actuated g/C Ratio		0.54	0.54							0.38	0.38	
Clearance Time (s)		4.0	4.0							4.0	4.0	
Lane Grp Cap (vph)		1006	855							612	1250	
v/s Ratio Prot		c0.50										
v/s Ratio Perm			0.10							c0.26	0.21	
v/c Ratio		0.93	0.19							0.69	0.55	
Uniform Delay, d1		21.3	11.8							26.0	24.3	
Progression Factor		1.00	1.00							0.48	0.53	
Incremental Delay, d2		15.9	0.5							6.1	1.7	
Delay (s)		37.1	12.3							18.5	14.6	
Level of Service		D	B							B	B	
Approach Delay (s)		33.5			0.0			0.0			15.1	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM Average Control Delay	24.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	79.3%	ICU Level of Service	C

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				
Lane Util. Factor		0.95						0.95				
Frt		1.00						1.00				
Flt Protected		0.97						1.00				
Satd. Flow (prot)		3436						3539				
Flt Permitted		0.97						1.00				
Satd. Flow (perm)		3436						3539				
Volume (vph)	984	646	0	0	0	0	0	450	0	0	0	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1036	680	0	0	0	0	0	474	0	0	0	0
Lane Group Flow (vph)	0	1716	0	0	0	0	0	474	0	0	0	0
Turn Type	Perm											
Protected Phases		4						2				
Permitted Phases	4											
Actuated Green, G (s)		54.0						38.0				
Effective Green, g (s)		54.0						38.0				
Actuated g/C Ratio		0.54						0.38				
Clearance Time (s)		4.0						4.0				
Lane Grp Cap (vph)		1855						1345				
v/s Ratio Prot								0.13				
v/s Ratio Perm		c0.50										
v/c Ratio		0.98dl						0.35				
Uniform Delay, d1		21.1						22.2				
Progression Factor		0.99						1.00				
Incremental Delay, d2		6.3						0.7				
Delay (s)		27.3						22.9				
Level of Service		C						C				
Approach Delay (s)		27.3			0.0			22.9			0.0	
Approach LOS		C			A			C			A	

Intersection Summary			
HCM Average Control Delay	26.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	77.1%	ICU Level of Service	C

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
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	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.91		0.97	0.95			1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	1.00			1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5053		3433	3535			1777	1583	1770	1682	
Flt Permitted	0.13	1.00		0.95	1.00			0.68	1.00	0.35	1.00	
Satd. Flow (perm)	244	5053		3433	3535			1276	1583	647	1682	
Volume (vph)	7	1159	51	287	1626	13	282	9	678	82	22	40
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	7	1220	54	302	1712	14	297	9	714	86	23	42
Lane Group Flow (vph)	7	1274	0	302	1726	0	0	306	714	86	65	0
Turn Type	Perm			Prot			Perm		pm+ov	Perm		
Protected Phases		4		3	8			2	3		6	
Permitted Phases	4						2		2	6		
Actuated Green, G (s)	30.5	30.5		36.6	71.1			30.9	67.5	30.9	30.9	
Effective Green, g (s)	30.5	30.5		36.6	71.1			30.9	67.5	30.9	30.9	
Actuated g/C Ratio	0.28	0.28		0.33	0.65			0.28	0.61	0.28	0.28	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	68	1401		1142	2285			358	1029	182	472	
v/s Ratio Prot		c0.25		0.09	c0.49				0.23		0.04	
v/s Ratio Perm	0.03							c0.24	0.22	0.13		
v/c Ratio	0.10	0.91		0.26	0.76			0.85	0.69	0.47	0.14	
Uniform Delay, d1	29.6	38.4		26.9	13.4			37.4	14.3	32.8	29.6	
Progression Factor	1.00	1.00		0.52	0.40			0.94	1.05	1.00	1.00	
Incremental Delay, d2	0.7	8.9		0.5	2.2			17.5	2.0	1.9	0.1	
Delay (s)	30.2	47.3		14.5	7.6			52.8	17.1	34.7	29.7	
Level of Service	C	D		B	A			D	B	C	C	
Approach Delay (s)		47.2			8.6			27.8			32.6	
Approach LOS		D			A			C			C	

Intersection Summary

HCM Average Control Delay	24.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	84.7%	ICU Level of Service	D

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	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.95		1.00	0.95		0.94	0.95	1.00	1.00	0.91	
Frt	1.00	1.00		1.00	0.98		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	3539		1770	3475		4990	3539	1583	1770	5085	
Flt Permitted	0.95	1.00		0.28	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	3539		521	3475		4990	3539	1583	1770	5085	
Volume (vph)	418	423	0	166	513	70	738	1173	200	87	1435	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	440	445	0	175	540	74	777	1235	211	92	1511	0
Lane Group Flow (vph)	440	445	0	175	614	0	777	1235	211	92	1511	0
Turn Type	Prot			pm+pt			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases				8					2			
Actuated Green, G (s)	15.8	19.6		37.4	20.6		19.6	46.6	46.6	7.0	34.0	
Effective Green, g (s)	16.8	20.6		39.4	21.6		20.6	47.6	47.6	8.0	35.0	
Actuated g/C Ratio	0.15	0.19		0.36	0.20		0.19	0.43	0.43	0.07	0.32	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	524	663		389	682		934	1531	685	129	1618	
v/s Ratio Prot	c0.13	0.13		0.07	c0.18		0.16	c0.35		0.05	c0.30	
v/s Ratio Perm				0.09					0.13			
v/c Ratio	0.84	0.67		0.45	0.90		0.83	0.81	0.31	0.71	0.93	
Uniform Delay, d1	45.3	41.0		34.0	43.1		43.0	27.2	20.4	49.9	36.4	
Progression Factor	0.79	0.45		1.00	1.00		0.60	0.38	0.29	1.00	1.00	
Incremental Delay, d2	6.5	1.5		0.8	15.0		5.9	3.2	0.8	17.0	10.4	
Delay (s)	42.1	20.3		34.8	58.2		31.6	13.5	6.7	66.9	46.7	
Level of Service	D	C		C	E		C	B	A	E	D	
Approach Delay (s)		31.1			53.0			19.2			47.9	
Approach LOS		C			D			B			D	

Intersection Summary			
HCM Average Control Delay	34.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	87.1%	ICU Level of Service	D
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	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.96	1.00	0.95	0.97	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1787	3167	1681	1708	1583	1770	5510		1770	5588	1583
Flt Permitted		0.96	1.00	0.95	0.97	1.00	0.08	1.00		0.08	1.00	1.00
Satd. Flow (perm)		1787	3167	1681	1708	1583	141	5510		151	5588	1583
Volume (vph)	230	40	624	191	32	56	188	1767	182	92	2321	82
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	242	42	657	201	34	59	198	1860	192	97	2443	86
Lane Group Flow (vph)	0	284	657	115	120	59	198	2052	0	97	2443	86
Turn Type	Split		pt+ov	Split		pt+ov	pm+pt			pm+pt		Free
Protected Phases	4	4	4 5	3	3	3 1	5	2		1	6	
Permitted Phases							2			6		Free
Actuated Green, G (s)		23.6	37.6	11.9	11.9	16.6	60.5	50.8		54.2	47.5	110.0
Effective Green, g (s)		23.6	36.6	11.9	11.9	17.6	61.8	52.8		55.2	49.5	110.0
Actuated g/C Ratio		0.21	0.33	0.11	0.11	0.16	0.56	0.48		0.50	0.45	1.00
Clearance Time (s)		4.0		4.0	4.0		3.0	6.0		3.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		383	1054	182	185	253	212	2645		160	2515	1583
v/s Ratio Prot		c0.16	0.21	0.07	c0.07	0.04	c0.08	0.37		0.03	0.44	
v/s Ratio Perm							c0.45			0.27		0.05
v/c Ratio		0.74	0.62	0.63	0.65	0.23	0.93	0.78		0.61	0.97	0.05
Uniform Delay, d1		40.4	30.9	47.0	47.0	40.3	31.6	23.7		19.3	29.6	0.0
Progression Factor		1.23	1.37	1.00	1.00	1.00	1.00	1.00		1.39	0.44	1.00
Incremental Delay, d2		7.5	1.2	7.0	7.6	0.5	43.4	2.3		3.3	7.7	0.0
Delay (s)		57.1	43.5	53.9	54.7	40.8	74.8	26.0		30.1	20.8	0.0
Level of Service		E	D	D	D	D	E	C		C	C	A
Approach Delay (s)		47.6			51.6			30.3			20.4	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	29.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	90.5%	ICU Level of Service	E
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				
Lane Util. Factor					0.95			0.95				
Frt					1.00			1.00				
Flt Protected					1.00			0.99				
Satd. Flow (prot)					3539			3489				
Flt Permitted					1.00			0.99				
Satd. Flow (perm)					3539			3489				
Volume (vph)	0	0	0	0	615	0	310	776	0	0	0	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	0	647	0	326	817	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	647	0	0	1143	0	0	0	0
Turn Type							Perm					
Protected Phases					8			2				
Permitted Phases							2					
Actuated Green, G (s)					46.0			56.0				
Effective Green, g (s)					46.0			56.0				
Actuated g/C Ratio					0.42			0.51				
Clearance Time (s)					4.0			4.0				
Lane Grp Cap (vph)					1480			1776				
v/s Ratio Prot					c0.18							
v/s Ratio Perm								c0.33				
v/c Ratio					0.44			0.64				
Uniform Delay, d1					22.8			19.7				
Progression Factor					1.00			0.52				
Incremental Delay, d2					0.9			1.4				
Delay (s)					23.7			11.6				
Level of Service					C			B				
Approach Delay (s)		0.0			23.7			11.6			0.0	
Approach LOS		A			C			B			A	

Intersection Summary			
HCM Average Control Delay	16.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	56.6%	ICU Level of Service	A

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	
Lane Util. Factor				0.91	0.91						0.91	
Frt				1.00	1.00						1.00	
Flt Protected				0.95	0.97						1.00	
Satd. Flow (prot)				1610	3296						5085	
Flt Permitted				0.95	0.97						1.00	
Satd. Flow (perm)				1610	3296						5085	
Volume (vph)	0	0	0	678	254	0	0	0	0	0	898	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	714	267	0	0	0	0	0	945	0
Lane Group Flow (vph)	0	0	0	357	624	0	0	0	0	0	945	0
Turn Type				Perm								
Protected Phases					8						6	
Permitted Phases				8								
Actuated Green, G (s)				46.0	46.0						56.0	
Effective Green, g (s)				46.0	46.0						56.0	
Actuated g/C Ratio				0.42	0.42						0.51	
Clearance Time (s)				4.0	4.0						4.0	
Lane Grp Cap (vph)				673	1378						2589	
v/s Ratio Prot											c0.19	
v/s Ratio Perm				c0.22	0.19							
v/c Ratio				0.53	0.45						0.37	
Uniform Delay, d1				23.9	23.0						16.3	
Progression Factor				0.49	0.55						0.49	
Incremental Delay, d2				2.6	0.9						0.2	
Delay (s)				14.4	13.6						8.0	
Level of Service				B	B						A	
Approach Delay (s)		0.0			13.9			0.0			8.0	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM Average Control Delay	11.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	44.7%	ICU Level of Service	A

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							0.91	0.91	
Frt		1.00	0.85							1.00	1.00	
Flt Protected		1.00	1.00							0.95	0.98	
Satd. Flow (prot)		1863	1583							1610	3306	
Flt Permitted		1.00	1.00							0.95	0.98	
Satd. Flow (perm)		1863	1583							1610	3306	
Volume (vph)	0	692	319	0	0	0	0	0	0	1160	557	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	728	336	0	0	0	0	0	0	1221	586	0
Lane Group Flow (vph)	0	728	336	0	0	0	0	0	0	614	1193	0
Turn Type			Perm							Perm		
Protected Phases		4									6	
Permitted Phases			4							6		
Actuated Green, G (s)		59.0	59.0							43.0	43.0	
Effective Green, g (s)		59.0	59.0							43.0	43.0	
Actuated g/C Ratio		0.54	0.54							0.39	0.39	
Clearance Time (s)		4.0	4.0							4.0	4.0	
Lane Grp Cap (vph)		999	849							629	1292	
v/s Ratio Prot		c0.39										
v/s Ratio Perm			0.21							c0.38	0.36	
v/c Ratio		0.73	0.40							0.98	0.92	
Uniform Delay, d1		19.4	15.0							33.0	31.9	
Progression Factor		1.00	1.00							0.71	0.75	
Incremental Delay, d2		4.7	1.4							29.5	11.8	
Delay (s)		24.1	16.4							52.8	35.7	
Level of Service		C	B							D	D	
Approach Delay (s)		21.6			0.0			0.0			41.5	
Approach LOS		C			A			A			D	

Intersection Summary			
HCM Average Control Delay	34.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	79.5%	ICU Level of Service	C

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				
Lane Util. Factor		0.95						0.95				
Frt		1.00						1.00				
Flt Protected		0.98						1.00				
Satd. Flow (prot)		3467						3539				
Flt Permitted		0.98						1.00				
Satd. Flow (perm)		3467						3539				
Volume (vph)	700	984	0	0	0	0	0	257	0	0	0	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	737	1036	0	0	0	0	0	271	0	0	0	0
Lane Group Flow (vph)	0	1773	0	0	0	0	0	271	0	0	0	0
Turn Type	Perm											
Protected Phases		4						2				
Permitted Phases	4											
Actuated Green, G (s)		59.0						43.0				
Effective Green, g (s)		59.0						43.0				
Actuated g/C Ratio		0.54						0.39				
Clearance Time (s)		4.0						4.0				
Lane Grp Cap (vph)		1860						1383				
v/s Ratio Prot								c0.08				
v/s Ratio Perm		c0.51										
v/c Ratio		0.95						0.20				
Uniform Delay, d1		24.2						22.1				
Progression Factor		1.24						1.00				
Incremental Delay, d2		8.2						0.3				
Delay (s)		38.1						22.4				
Level of Service		D						C				
Approach Delay (s)		38.1			0.0			22.4			0.0	
Approach LOS		D			A			C			A	

Intersection Summary			
HCM Average Control Delay	36.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.63		
Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	64.2%	ICU Level of Service	B

c Critical Lane Group

Appendix D

Total Future Levels of Service

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	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95			1.00	1.00	1.00	1.00	
Frt	1.00	0.97		1.00	0.98			1.00	0.85	1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1770	4938		3539	3476			1788	1583	1770	1723	
Flt Permitted	0.39	1.00		0.95	1.00			0.75	1.00	0.71	1.00	
Satd. Flow (perm)	718	4938		3539	3476			1394	1583	1322	1723	
Volume (vph)	42	1510	362	1191	586	79	58	11	89	22	9	9
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	44	1589	381	1254	617	83	61	12	94	23	9	9
Lane Group Flow (vph)	44	1970	0	1254	700	0	0	73	94	23	18	0
Turn Type	pm+pt			Prot			Perm		pm+pv	Perm		
Protected Phases	7	4		3	8			2	3		6	
Permitted Phases	4						2		2	6		
Actuated Green, G (s)	42.0	39.6		39.6	76.8			8.8	48.4	8.8	8.8	
Effective Green, g (s)	42.0	39.6		39.6	76.8			8.8	48.4	8.8	8.8	
Actuated g/C Ratio	0.42	0.40		0.40	0.77			0.09	0.48	0.09	0.09	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	327	1955		1401	2670			123	829	116	152	
v/s Ratio Prot	0.00	c0.40		c0.35	0.20				0.04		0.01	
v/s Ratio Perm	0.05							c0.05	0.01	0.02		
v/c Ratio	0.13	1.01		0.90	0.26			0.59	0.11	0.20	0.12	
Uniform Delay, d1	17.9	30.2		28.3	3.4			43.9	14.1	42.3	42.0	
Progression Factor	1.00	1.00		0.69	0.27			1.25	0.69	1.00	1.00	
Incremental Delay, d2	0.2	22.2		5.8	0.2			5.7	0.0	0.8	0.5	
Delay (s)	18.1	52.4		25.3	1.1			60.8	9.7	43.2	42.4	
Level of Service	B	D		C	A			E	A	D	D	
Approach Delay (s)		51.7			16.6			32.1			42.8	
Approach LOS		D			B			C			D	

Intersection Summary

HCM Average Control Delay	34.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	95.6%	ICU Level of Service	E
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	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		0.94	0.95	1.00	1.00	0.95	
Frt	1.00	1.00		1.00	0.97		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3539	3539		1770	3429		4990	3539	1583	1770	5309	
Flt Permitted	0.95	1.00		0.62	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3539	3539		1146	3429		4990	3539	1583	1770	5309	
Volume (vph)	494	545	0	121	242	64	1357	1106	151	57	1085	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	520	574	0	127	255	67	1428	1164	159	60	1142	0
Lane Group Flow (vph)	520	574	0	127	322	0	1428	1164	159	60	1142	0
Turn Type	Prot			pm+pt			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases				8					2			
Actuated Green, G (s)	16.0	22.5		13.5	13.5		27.5	45.7	45.7	4.8	23.0	
Effective Green, g (s)	17.0	23.5		14.5	14.5		28.5	46.7	46.7	5.8	24.0	
Actuated g/C Ratio	0.17	0.24		0.14	0.14		0.28	0.47	0.47	0.06	0.24	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	602	832		216	497		1422	1653	739	103	1274	
v/s Ratio Prot	c0.15	0.16		0.05	c0.09		c0.29	0.33		0.03	c0.22	
v/s Ratio Perm				0.04					0.10			
v/c Ratio	0.86	0.69		0.59	0.65		1.00	0.70	0.22	0.58	0.90	
Uniform Delay, d1	40.4	34.9		45.6	40.3		35.8	21.2	15.8	45.9	35.8	
Progression Factor	1.28	1.34		1.00	1.00		0.47	0.18	0.07	1.00	1.00	
Incremental Delay, d2	6.0	1.1		4.0	2.9		16.2	1.0	0.3	8.1	8.5	
Delay (s)	57.8	47.9		49.6	43.2		33.2	4.8	1.4	54.1	45.3	
Level of Service	E	D		D	D		C	A	A	D	D	
Approach Delay (s)		52.6			45.1			19.3			45.7	
Approach LOS		D			D			B			D	

Intersection Summary			
HCM Average Control Delay	33.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	86.6%	ICU Level of Service	D
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	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00	0.88	0.95	0.95	1.00	1.00	0.91		1.00	0.91	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.96	1.00	0.95	0.97	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1784	2787	1681	1718	1583	1770	5062		1770	5085	1583
Flt Permitted		0.96	1.00	0.95	0.97	1.00	0.11	1.00		0.12	1.00	1.00
Satd. Flow (perm)		1784	2787	1681	1718	1583	204	5062		229	5085	1583
Volume (vph)	52	7	296	273	71	65	521	2496	80	35	1377	374
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	55	7	312	287	75	68	548	2627	84	37	1449	394
Lane Group Flow (vph)	0	62	312	176	186	68	548	2711	0	37	1449	394
Turn Type	Split		pt+ov	Split		pm+ov	pm+pt			pm+pt		Free
Protected Phases	4	4	4 5	3	3	1	5	2		1	6	
Permitted Phases						8	2			6		Free
Actuated Green, G (s)		10.2	42.2	14.3	14.3	18.3	60.5	53.5		33.5	29.5	100.0
Effective Green, g (s)		10.2	41.2	14.3	14.3	17.3	63.5	56.5		35.5	32.5	100.0
Actuated g/C Ratio		0.10	0.41	0.14	0.14	0.17	0.64	0.56		0.36	0.32	1.00
Clearance Time (s)		4.0		4.0	4.0	3.0	3.0	7.0		3.0	7.0	
Vehicle Extension (s)		3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		182	1146	240	246	274	552	2860		128	1653	1583
v/s Ratio Prot		0.03	0.11	0.10	c0.11	0.01	c0.27	0.54		0.01	0.28	
v/s Ratio Perm						0.04	c0.36			0.09		c0.25
v/c Ratio		0.34	0.27	0.73	0.76	0.25	0.99	0.95		0.29	0.88	0.25
Uniform Delay, d1		41.8	19.5	41.0	41.2	35.7	29.0	20.4		24.6	34.9	0.0
Progression Factor		1.17	0.36	1.00	1.00	1.00	1.00	1.00		0.22	0.19	1.00
Incremental Delay, d2		0.5	0.1	11.0	12.4	0.5	36.5	8.4		0.6	3.4	0.2
Delay (s)		49.3	7.0	52.0	53.6	36.2	65.3	28.8		6.0	9.3	0.2
Level of Service		D	A	D	D	D	E	C		A	A	A
Approach Delay (s)		14.0			50.2			34.9			7.3	
Approach LOS		B			D			C			A	

Intersection Summary			
HCM Average Control Delay	26.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	85.0%	ICU Level of Service	D
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑			4↑				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0			4.0				
Lane Util. Factor					0.95			0.95				
Frt					1.00			1.00				
Flt Protected					1.00			0.99				
Satd. Flow (prot)					3539			3503				
Flt Permitted					1.00			0.99				
Satd. Flow (perm)					3539			3503				
Volume (vph)	0	0	0	0	222	0	242	919	0	0	0	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	0	234	0	255	967	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	234	0	0	1222	0	0	0	0
Turn Type							Perm					
Protected Phases					8			2				
Permitted Phases							2					
Actuated Green, G (s)					36.0			56.0				
Effective Green, g (s)					36.0			56.0				
Actuated g/C Ratio					0.36			0.56				
Clearance Time (s)					4.0			4.0				
Lane Grp Cap (vph)					1274			1962				
v/s Ratio Prot					c0.07							
v/s Ratio Perm								c0.35				
v/c Ratio					0.18			0.62				
Uniform Delay, d1					21.9			14.9				
Progression Factor					1.00			1.47				
Incremental Delay, d2					0.3			0.9				
Delay (s)					22.2			22.8				
Level of Service					C			C				
Approach Delay (s)		0.0			22.2			22.8			0.0	
Approach LOS		A			C			C			A	

Intersection Summary			
HCM Average Control Delay	22.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.45		
Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	47.3%	ICU Level of Service	A

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	
Lane Util. Factor				0.91	0.91						0.91	
Frt				1.00	1.00						1.00	
Flt Protected				0.95	0.99						1.00	
Satd. Flow (prot)				1610	3353						5085	
Flt Permitted				0.95	0.99						1.00	
Satd. Flow (perm)				1610	3353						5085	
Volume (vph)	0	0	0	245	250	0	0	0	0	0	799	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	258	263	0	0	0	0	0	841	0
Lane Group Flow (vph)	0	0	0	183	338	0	0	0	0	0	841	0
Turn Type				Perm								
Protected Phases					8						6	
Permitted Phases				8								
Actuated Green, G (s)				36.0	36.0						56.0	
Effective Green, g (s)				36.0	36.0						56.0	
Actuated g/C Ratio				0.36	0.36						0.56	
Clearance Time (s)				4.0	4.0						4.0	
Lane Grp Cap (vph)				580	1207						2848	
v/s Ratio Prot											c0.17	
v/s Ratio Perm				c0.11	0.10							
v/c Ratio				0.32	0.28						0.30	
Uniform Delay, d1				23.1	22.8						11.6	
Progression Factor				1.05	0.90						0.31	
Incremental Delay, d2				1.3	0.5						0.2	
Delay (s)				25.6	21.1						3.8	
Level of Service				C	C						A	
Approach Delay (s)		0.0			22.7			0.0			3.8	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM Average Control Delay	11.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.30		
Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	32.8%	ICU Level of Service	A

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							0.91	0.91	
Frt		1.00	0.85							1.00	1.00	
Flt Protected		1.00	1.00							0.95	0.97	
Satd. Flow (prot)		1863	1583							1610	3289	
Flt Permitted		1.00	1.00							0.95	0.97	
Satd. Flow (perm)		1863	1583							1610	3289	
Volume (vph)	0	966	152	0	0	0	0	0	0	813	256	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1017	160	0	0	0	0	0	0	856	269	0
Lane Group Flow (vph)	0	1017	160	0	0	0	0	0	0	428	697	0
Turn Type			Perm							Perm		
Protected Phases		4									6	
Permitted Phases			4							6		
Actuated Green, G (s)		54.0	54.0							38.0	38.0	
Effective Green, g (s)		54.0	54.0							38.0	38.0	
Actuated g/C Ratio		0.54	0.54							0.38	0.38	
Clearance Time (s)		4.0	4.0							4.0	4.0	
Lane Grp Cap (vph)		1006	855							612	1250	
v/s Ratio Prot		c0.55										
v/s Ratio Perm			0.10							c0.27	0.21	
v/c Ratio		1.01	0.19							0.70	0.56	
Uniform Delay, d1		23.0	11.8							26.2	24.4	
Progression Factor		1.00	1.00							0.49	0.53	
Incremental Delay, d2		31.1	0.5							6.4	1.8	
Delay (s)		54.1	12.3							19.1	14.6	
Level of Service		D	B							B	B	
Approach Delay (s)		48.4			0.0			0.0			16.3	
Approach LOS		D			A			A			B	

Intersection Summary			
HCM Average Control Delay	32.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	83.9%	ICU Level of Service	D

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				
Lane Util. Factor		0.95						0.95				
Frt		1.00						1.00				
Flt Protected		0.97						1.00				
Satd. Flow (prot)		3430						3539				
Flt Permitted		0.97						1.00				
Satd. Flow (perm)		3430						3539				
Volume (vph)	1157	658	0	0	0	0	0	450	0	0	0	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1218	693	0	0	0	0	0	474	0	0	0	0
Lane Group Flow (vph)	0	1911	0	0	0	0	0	474	0	0	0	0
Turn Type	Perm											
Protected Phases		4						2				
Permitted Phases	4											
Actuated Green, G (s)		54.0						38.0				
Effective Green, g (s)		54.0						38.0				
Actuated g/C Ratio		0.54						0.38				
Clearance Time (s)		4.0						4.0				
Lane Grp Cap (vph)		1852						1345				
v/s Ratio Prot								c0.13				
v/s Ratio Perm		c0.56										
v/c Ratio		1.16df						0.35				
Uniform Delay, d1		23.0						22.2				
Progression Factor		0.99						1.00				
Incremental Delay, d2		24.7						0.7				
Delay (s)		47.5						22.9				
Level of Service		D						C				
Approach Delay (s)		47.5			0.0			22.9			0.0	
Approach LOS		D			A			C			A	

Intersection Summary			
HCM Average Control Delay	42.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.75		
Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	87.2%	ICU Level of Service	D

df Defacto Left Lane. Recode with 1 though lane as a left lane.

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	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.91		0.97	0.95			1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	1.00			1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5048		3433	3535			1776	1583	1770	1682	
Flt Permitted	0.13	1.00		0.95	1.00			0.68	1.00	0.31	1.00	
Satd. Flow (perm)	244	5048		3433	3535			1274	1583	578	1682	
Volume (vph)	7	1159	59	320	1626	13	318	9	751	82	22	40
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	7	1220	62	337	1712	14	335	9	791	86	23	42
Lane Group Flow (vph)	7	1282	0	337	1726	0	0	344	791	86	65	0
Turn Type	Perm			Prot			Perm		pm+ov	Perm		
Protected Phases		4		3	8			2	3		6	
Permitted Phases	4						2		2	6		
Actuated Green, G (s)	30.5	30.5		35.0	69.5			32.5	67.5	32.5	32.5	
Effective Green, g (s)	30.5	30.5		35.0	69.5			32.5	67.5	32.5	32.5	
Actuated g/C Ratio	0.28	0.28		0.32	0.63			0.30	0.61	0.30	0.30	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	68	1400		1092	2233			376	1029	171	497	
v/s Ratio Prot		c0.25		0.10	c0.49				0.24		0.04	
v/s Ratio Perm	0.03							c0.27	0.26	0.15		
v/c Ratio	0.10	0.92		0.31	0.77			0.91	0.77	0.50	0.13	
Uniform Delay, d1	29.6	38.5		28.4	14.6			37.4	15.5	32.1	28.4	
Progression Factor	1.00	1.00		0.52	0.39			0.96	1.14	1.00	1.00	
Incremental Delay, d2	0.7	9.6		0.6	2.4			25.9	3.5	2.3	0.1	
Delay (s)	30.2	48.1		15.3	8.2			62.0	21.2	34.4	28.5	
Level of Service	C	D		B	A			E	C	C	C	
Approach Delay (s)		48.0			9.3			33.6			31.9	
Approach LOS		D			A			C			C	

Intersection Summary

HCM Average Control Delay	26.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	88.7%	ICU Level of Service	D
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	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.95		1.00	0.95		0.94	0.95	1.00	1.00	0.91	
Frt	1.00	1.00		1.00	0.98		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	3539		1770	3476		4990	3539	1583	1770	5085	
Flt Permitted	0.95	1.00		0.26	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	3539		489	3476		4990	3539	1583	1770	5085	
Volume (vph)	436	441	0	168	521	70	766	1211	200	87	1445	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	459	464	0	177	548	74	806	1275	211	92	1521	0
Lane Group Flow (vph)	459	464	0	177	622	0	806	1275	211	92	1521	0
Turn Type	Prot			pm+pt			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases				8					2			
Actuated Green, G (s)	16.0	20.1		37.3	20.7		19.3	46.3	46.3	7.0	34.0	
Effective Green, g (s)	17.0	21.1		39.3	21.7		20.3	47.3	47.3	8.0	35.0	
Actuated g/C Ratio	0.15	0.19		0.36	0.20		0.18	0.43	0.43	0.07	0.32	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	531	679		380	686		921	1522	681	129	1618	
v/s Ratio Prot	c0.13	0.13		0.07	c0.18		0.16	c0.36		0.05	c0.30	
v/s Ratio Perm				0.09					0.13			
v/c Ratio	0.86	0.68		0.47	0.91		0.88	0.84	0.31	0.71	0.94	
Uniform Delay, d1	45.4	41.3		34.5	43.2		43.6	27.9	20.6	49.9	36.5	
Progression Factor	0.79	0.46		1.00	1.00		0.57	0.35	0.32	1.00	1.00	
Incremental Delay, d2	7.6	1.5		0.9	15.6		7.1	8.4	0.7	17.0	11.2	
Delay (s)	43.3	20.4		35.4	58.8		31.7	13.0	7.3	66.9	47.6	
Level of Service	D	C		D	E		C	B	A	E	D	
Approach Delay (s)		31.8			53.6			19.1			48.7	
Approach LOS		C			D			B			D	

Intersection Summary

HCM Average Control Delay	34.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	88.7%	ICU Level of Service	D

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	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected		0.96	1.00	0.95	0.97	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1787	3167	1681	1708	1583	1770	5511		1770	5588	1583
Flt Permitted		0.96	1.00	0.95	0.97	1.00	0.08	1.00		0.09	1.00	1.00
Satd. Flow (perm)		1787	3167	1681	1708	1583	154	5511		165	5588	1583
Volume (vph)	268	48	1140	191	32	56	203	1796	182	92	2359	93
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	282	51	1200	201	34	59	214	1891	192	97	2483	98
Lane Group Flow (vph)	0	333	1200	115	120	59	214	2083	0	97	2483	98
Turn Type	Split		pt+ov	Split		pt+ov	pm+pt			pm+pt		Free
Protected Phases	4	4	4 5	3	3	3 1	5	2		1	6	
Permitted Phases							2			6		Free
Actuated Green, G (s)		30.0	44.0	9.8	9.8	16.6	56.2	46.4		50.0	43.2	110.0
Effective Green, g (s)		30.0	43.0	9.8	9.8	15.6	57.4	48.4		51.0	45.2	110.0
Actuated g/C Ratio		0.27	0.39	0.09	0.09	0.14	0.52	0.44		0.46	0.41	1.00
Clearance Time (s)		4.0		4.0	4.0		3.0	6.0		3.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		487	1233	150	152	224	213	2425		161	2296	1583
v/s Ratio Prot		0.19	c0.38	0.07	c0.07	0.04	c0.08	0.38		0.03	c0.44	
v/s Ratio Perm							0.44			0.25		0.06
v/c Ratio		0.68	0.97	0.77	0.79	0.26	1.00	0.86		0.60	1.08	0.06
Uniform Delay, d1		35.8	32.9	49.0	49.1	42.1	52.7	27.7		22.2	32.4	0.0
Progression Factor		1.18	1.19	1.00	1.00	1.00	1.00	1.00		1.34	0.46	1.00
Incremental Delay, d2		3.9	18.4	20.6	23.2	0.6	62.9	4.2		3.0	41.1	0.0
Delay (s)		46.1	57.4	69.6	72.3	42.7	115.5	32.0		32.8	56.0	0.0
Level of Service		D	E	E	E	D	F	C		C	E	A
Approach Delay (s)		54.9			65.3			39.7			53.1	
Approach LOS		D			E			D			D	

Intersection Summary			
HCM Average Control Delay	49.5	HCM Level of Service	D
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	106.4%	ICU Level of Service	F
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				
Lane Util. Factor					0.95			0.95				
Frt					1.00			1.00				
Flt Protected					1.00			0.99				
Satd. Flow (prot)					3539			3490				
Flt Permitted					1.00			0.99				
Satd. Flow (perm)					3539			3490				
Volume (vph)	0	0	0	0	615	0	310	790	0	0	0	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	0	647	0	326	832	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	647	0	0	1158	0	0	0	0
Turn Type							Perm					
Protected Phases					8			2				
Permitted Phases							2					
Actuated Green, G (s)					46.0			56.0				
Effective Green, g (s)					46.0			56.0				
Actuated g/C Ratio					0.42			0.51				
Clearance Time (s)					4.0			4.0				
Lane Grp Cap (vph)					1480			1777				
v/s Ratio Prot					c0.18							
v/s Ratio Perm								c0.33				
v/c Ratio					0.44			0.65				
Uniform Delay, d1					22.8			19.8				
Progression Factor					1.00			0.49				
Incremental Delay, d2					0.9			1.4				
Delay (s)					23.7			11.2				
Level of Service					C			B				
Approach Delay (s)		0.0			23.7			11.2			0.0	
Approach LOS		A			C			B			A	

Intersection Summary			
HCM Average Control Delay	15.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	57.0%	ICU Level of Service	A

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	
Lane Util. Factor				0.91	0.91						0.91	
Frt				1.00	1.00						1.00	
Flt Protected				0.95	0.97						1.00	
Satd. Flow (prot)				1610	3296						5085	
Flt Permitted				0.95	0.97						1.00	
Satd. Flow (perm)				1610	3296						5085	
Volume (vph)	0	0	0	678	254	0	0	0	0	0	968	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	714	267	0	0	0	0	0	1019	0
Lane Group Flow (vph)	0	0	0	357	624	0	0	0	0	0	1019	0
Turn Type				Perm								
Protected Phases					8						6	
Permitted Phases				6								
Actuated Green, G (s)				46.0	46.0						56.0	
Effective Green, g (s)				46.0	46.0						56.0	
Actuated g/C Ratio				0.42	0.42						0.51	
Clearance Time (s)				4.0	4.0						4.0	
Lane Grp Cap (vph)				673	1378						2589	
v/s Ratio Prot											c0.20	
v/s Ratio Perm				c0.22	0.19							
v/c Ratio				0.53	0.45						0.39	
Uniform Delay, d1				23.9	23.0						16.6	
Progression Factor				0.51	0.56						0.54	
Incremental Delay, d2				2.6	0.9						0.0	
Delay (s)				14.9	13.8						9.1	
Level of Service				B	B						A	
Approach Delay (s)		0.0			14.2			0.0			9.1	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM Average Control Delay	11.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	46.1%	ICU Level of Service	A

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							0.91	0.91	
Frt		1.00	0.85							1.00	1.00	
Flt Protected		1.00	1.00							0.95	0.97	
Satd. Flow (prot)		1863	1583							1610	3303	
Flt Permitted		1.00	1.00							0.95	0.97	
Satd. Flow (perm)		1863	1583							1610	3303	
Volume (vph)	0	706	319	0	0	0	0	0	0	1232	557	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	743	336	0	0	0	0	0	0	1297	586	0
Lane Group Flow (vph)	0	743	336	0	0	0	0	0	0	649	1234	0
Turn Type			Perm							Perm		
Protected Phases		4									6	
Permitted Phases			4							6		
Actuated Green, G (s)		59.0	59.0							43.0	43.0	
Effective Green, g (s)		59.0	59.0							43.0	43.0	
Actuated g/C Ratio		0.54	0.54							0.39	0.39	
Clearance Time (s)		4.0	4.0							4.0	4.0	
Lane Grp Cap (vph)		999	849							629	1291	
v/s Ratio Prot		c0.40										
v/s Ratio Perm			0.21							c0.40	0.37	
v/c Ratio		0.74	0.40							1.03	0.96	
Uniform Delay, d1		19.7	15.0							33.5	32.6	
Progression Factor		1.00	1.00							0.74	0.77	
Incremental Delay, d2		5.0	1.4							43.2	15.8	
Delay (s)		24.7	16.4							68.0	40.9	
Level of Service		C	B							E	D	
Approach Delay (s)		22.1			0.0			0.0			50.3	
Approach LOS		C			A			A			D	

Intersection Summary			
HCM Average Control Delay	40.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	81.7%	ICU Level of Service	D

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				
Lane Util. Factor		0.95						0.95				
Frt		1.00						1.00				
Flt Protected		0.98						1.00				
Satd. Flow (prot)		3469						3539				
Flt Permitted		0.98						1.00				
Satd. Flow (perm)		3469						3539				
Volume (vph)	714	1058	0	0	0	0	0	257	0	0	0	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	752	1114	0	0	0	0	0	271	0	0	0	0
Lane Group Flow (vph)	0	1866	0	0	0	0	0	271	0	0	0	0
Turn Type	Perm											
Protected Phases		4						2				
Permitted Phases	4											
Actuated Green, G (s)		59.0						43.0				
Effective Green, g (s)		59.0						43.0				
Actuated g/C Ratio		0.54						0.39				
Clearance Time (s)		4.0						4.0				
Lane Grp Cap (vph)		1861						1383				
v/s Ratio Prot								c0.08				
v/s Ratio Perm		c0.54										
v/c Ratio		1.00						0.20				
Uniform Delay, d1		25.5						22.1				
Progression Factor		1.25						1.00				
Incremental Delay, d2		15.8						0.3				
Delay (s)		47.6						22.4				
Level of Service		D						C				
Approach Delay (s)		47.6			0.0			22.4			0.0	
Approach LOS		D			A			C			A	

Intersection Summary			
HCM Average Control Delay	44.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.66		
Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	66.8%	ICU Level of Service	B

c Critical Lane Group

Intersection: 1: N Beauregard St & Mark Center Drive

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	TR	L	L	TR	LT	R	L	TR
Maximum Queue (ft)	43	298	277	456	185	524	16	113	53	31	31
Average Queue (ft)	27	240	252	409	151	220	3	91	16	26	10
95th Queue (ft)	40	317	310	469	228	478	13	120	51	34	30
Link Distance (ft)		748	748	748		464	464	673	673	223	223
Upstream Blk Time (%)						0.02					
Queuing Penalty (veh)						17					
Storage Bay Dist (ft)	250				200						
Storage Blk Time (%)		0.05			0.00	0.09					
Queuing Penalty (veh)		2			2	51					

Intersection: 2: N Beauregard St & Seminary Rd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB
Directions Served	L	L	T	T	L	T	TR	L	L	L	T	T
Maximum Queue (ft)	107	230	224	224	170	126	127	195	205	330	330	280
Average Queue (ft)	92	216	221	163	121	103	104	181	183	281	220	185
95th Queue (ft)	112	249	226	247	183	135	141	201	243	379	385	306
Link Distance (ft)		116	116	116		528	528			214	214	214
Upstream Blk Time (%)	0.00	0.58	0.73	0.33				0.00	0.01	0.25	0.13	0.06
Queuing Penalty (veh)	0	184	232	105				0	0	214	111	48
Storage Bay Dist (ft)	250				250			250	250			
Storage Blk Time (%)	0.00	0.58						0.00	0.01	0.25		0.39
Queuing Penalty (veh)	0	144						0	6	222		59

Intersection: 2: N Beauregard St & Seminary Rd

Movement	NB	SB	SB	SB	SB
Directions Served	R	L	T	T	T
Maximum Queue (ft)	48	52	71	189	170
Average Queue (ft)	21	34	49	174	170
95th Queue (ft)	51	65	92	186	170
Link Distance (ft)		80	80	80	80
Upstream Blk Time (%)			0.11	0.77	0.77
Queuing Penalty (veh)			31	222	221
Storage Bay Dist (ft)	10				
Storage Blk Time (%)	0.05				
Queuing Penalty (veh)	26				

Intersection: 3: Mark Center Drive & Seminary Rd

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	LT	R	R	L	LT	R	L	T	T	TR	L	T
Maximum Queue (ft)	51	50	31	147	145	55	326	518	614	314	31	147
Average Queue (ft)	32	31	23	96	87	44	266	331	267	220	12	110
95th Queue (ft)	62	62	43	158	143	62	352	668	596	364	37	144
Link Distance (ft)	688	688	688	252	252	252		489	489	489		358
Upstream Blk Time (%)								0.04	0.01			
Queuing Penalty (veh)								44	8			
Storage Bay Dist (ft)							300				300	
Storage Blk Time (%)							0.08	0.04				
Queuing Penalty (veh)							64	20				

Intersection: 3: Mark Center Drive & Seminary Rd

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	243	466	461
Average Queue (ft)	155	292	161
95th Queue (ft)	247	532	491
Link Distance (ft)	358	358	358
Upstream Blk Time (%)		0.15	0.10
Queuing Penalty (veh)		67	46
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: I-395 SB Off Ramp &

Movement	WB	WB	NB	NB
Directions Served	T	T	LT	T
Maximum Queue (ft)	135	109	188	171
Average Queue (ft)	71	51	145	110
95th Queue (ft)	146	118	197	176
Link Distance (ft)	131	131	267	267
Upstream Blk Time (%)	0.02			
Queuing Penalty (veh)	2			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: I-395 SB Off Ramp &

Movement	WB	WB	WB	SB	SB	SB
Directions Served	L	LT	T	T	T	T
Maximum Queue (ft)	52	72	92	46	50	69
Average Queue (ft)	35	45	29	21	29	25
95th Queue (ft)	49	74	90	51	60	64
Link Distance (ft)	253	253	253	141	141	141
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 6: I-395 NB On Ramp &

Movement	EB	EB	SB	SB	SB
Directions Served	T	R	L	LT	T
Maximum Queue (ft)	568	28	150	153	109
Average Queue (ft)	392	27	114	126	74
95th Queue (ft)	598	29	145	154	138
Link Distance (ft)	554	554	263	263	263
Upstream Blk Time (%)	0.05				
Queuing Penalty (veh)	0				
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 7: I-395 NB On Ramp &

Movement	EB	EB	NB	NB
Directions Served	LT	T	T	T
Maximum Queue (ft)	276	304	187	145
Average Queue (ft)	248	232	120	120
95th Queue (ft)	317	354	177	147
Link Distance (ft)	238	238	122	122
Upstream Blk Time (%)	0.20	0.10	0.04	0.07
Queuing Penalty (veh)	175	86	9	15
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 1: N Beauregard St & Mark Center Drive

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	TR	L	L	T	TR	LT	R	L	TR
Maximum Queue (ft)	20	288	307	335	116	123	81	79	267	378	51	70
Average Queue (ft)	9	215	197	256	55	49	68	62	173	292	34	30
95th Queue (ft)	19	294	313	336	111	123	95	85	267	453	48	69
Link Distance (ft)		748	748	748		464	464	464	673	673	223	223
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	250				200							
Storage Blk Time (%)		0.03										
Queuing Penalty (veh)		0										

Intersection: 2: N Beauregard St & Seminary Rd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB
Directions Served	L	L	T	T	L	T	TR	L	L	L	T	T
Maximum Queue (ft)	109	221	224	170	152	209	277	148	204	330	330	319
Average Queue (ft)	97	172	200	98	93	154	167	95	137	221	247	239
95th Queue (ft)	122	218	276	174	147	225	283	145	211	385	366	341
Link Distance (ft)		116	116	116		528	528			214	214	214
Upstream Blk Time (%)	0.01	0.17	0.24	0.07					0.00	0.09	0.14	0.15
Queuing Penalty (veh)	0	49	69	21					0	63	104	107
Storage Bay Dist (ft)	250				250			250	250			
Storage Blk Time (%)	0.01	0.17							0.00	0.09		0.56
Queuing Penalty (veh)	2	37							1	44		112

Intersection: 2: N Beauregard St & Seminary Rd

Movement	NB	SB	SB	SB	SB
Directions Served	R	L	T	T	T
Maximum Queue (ft)	36	55	72	170	170
Average Queue (ft)	28	47	66	170	169
95th Queue (ft)	52	61	79	171	171
Link Distance (ft)		80	80	80	80
Upstream Blk Time (%)			0.15	0.74	0.72
Queuing Penalty (veh)			58	284	277
Storage Bay Dist (ft)	10				
Storage Blk Time (%)	0.04				
Queuing Penalty (veh)	25				

Intersection: 3: Mark Center Drive & Seminary Rd

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	LT	R	R	L	LT	R	L	T	T	TR	L	T
Maximum Queue (ft)	243	359	359	110	109	31	144	326	328	326	72	227
Average Queue (ft)	193	282	230	101	77	30	116	262	267	280	48	169
95th Queue (ft)	249	355	346	117	115	33	143	359	333	331	74	245
Link Distance (ft)	688	688	688	252	252	252		489	489	489		358
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)							300				300	
Storage Blk Time (%)								0.03				
Queuing Penalty (veh)								7				

Intersection: 3: Mark Center Drive & Seminary Rd

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	350	472	467
Average Queue (ft)	290	424	370
95th Queue (ft)	392	507	675
Link Distance (ft)	358	358	358
Upstream Blk Time (%)	0.01	0.09	0.24
Queuing Penalty (veh)	4	57	155
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: I-395 SB Off Ramp &

Movement	WB	WB	NB	NB
Directions Served	T	T	LT	T
Maximum Queue (ft)	203	109	266	148
Average Queue (ft)	119	73	173	100
95th Queue (ft)	190	116	259	152
Link Distance (ft)	131	131	267	267
Upstream Blk Time (%)	0.02		0.00	
Queuing Penalty (veh)	6		2	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: I-395 SB Off Ramp &

Movement	WB	WB	WB	SB	SB	SB
Directions Served	L	LT	T	T	T	T
Maximum Queue (ft)	86	103	51	69	88	111
Average Queue (ft)	55	61	33	61	71	77
95th Queue (ft)	85	96	51	76	96	118
Link Distance (ft)	253	253	253	141	141	141
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 6: I-395 NB On Ramp &

Movement	EB	EB	SB	SB	SB
Directions Served	T	R	L	LT	T
Maximum Queue (ft)	362	108	250	296	270
Average Queue (ft)	259	70	214	262	224
95th Queue (ft)	373	117	286	312	289
Link Distance (ft)	554	554	263	263	263
Upstream Blk Time (%)			0.00	0.09	0.07
Queuing Penalty (veh)			1	51	38
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 7: I-395 NB On Ramp &

Movement	EB	EB	NB	NB
Directions Served	LT	T	T	T
Maximum Queue (ft)	275	306	110	110
Average Queue (ft)	244	236	66	59
95th Queue (ft)	280	311	113	125
Link Distance (ft)	238	238	122	122
Upstream Blk Time (%)	0.13	0.07	0.00	0.00
Queuing Penalty (veh)	125	68	0	1
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

REVISED: December 18, 2003

APPLICATION for SPECIAL USE PERMIT # 2003-0037

[ ] Change of Ownership or [ ] Minor Amendment

[must use black ink or type]

PROPERTY LOCATION: I-395 and Seminary Road

TAX MAP REFERENCE: 19.04-02-14; 20.03-02-01; 19.04-02-07 ZONE: CDD-4

APPLICANT Name: THE MARK WINKLER COMPANY, agent

Address: 4900 Seminary Road, Suite 900, Alexandria, Virginia 22311

PROPERTY OWNER Name: MARK CENTER PROPERTIES LIMITED PARTNERSHIP, et al

Address: 4900 Seminary Road, Suite 900, Alexandria, Virginia 22311

SITE USE: Request for Transportation Management Plan. This Plan accompanies the Preliminary Development Plan submitted for Plaza I, Mark Center.

[ ] THE UNDERSIGNED hereby applies for a Special Use Permit for **Change in Ownership**, in accordance with the provisions of Article XI, Division A, Section 11-503 (5)(f) of the 1992 Zoning Ordinance of City of Alexandria, Virginia. THE UNDERSIGNED, having read and received a copy of the special use permit, hereby agrees to comply with all conditions of the current special use permit, including all other applicable City codes and ordinances.

[ ] THE UNDERSIGNED hereby applies for a Special Use Permit for **Minor Amendment**, in accordance with the provisions of Article XI, Division A, Section 11-509 and 11-511 of the 1992 Zoning Ordinance of City of Alexandria, Virginia.

THE UNDERSIGNED, having obtained permission from the property owner, hereby requests this special use permit. The undersigned also attests that all of the information herein required to be furnished by the applicant are true, correct and accurate to the best of their knowledge and belief.

J. Howard Middleton, Jr., Esq.
Print Name of Applicant or Agent

Signature

3110 Fairview Park Dr., Suite 1400
Mailing/Street Address

703-641-4225 703-641-4340
Telephone # *Fax #*

Falls Church, VA 22042
City and State *Zip Code*

December 18, 2003
Date

==========***DO NOT WRITE BELOW THIS LINE - OFFICE USE ONLY***==========

Application Received: _____ Date & Fee Paid _____ $ _____

Legal Advertisement: _____

ADMINISTRATIVE ACTION: _____

Date

Director, Planning & Zoning

FRXUB-026745601-JRMIDDLE
December 18, 2003 12:07 PM

SUP # 2003-0037

The following information must be furnished to the Department of Planning and Zoning to determine if the current use conducted on the premises complies with the special use permit provisions and all other applicable codes and ordinances.

1. Please describe prior special use permit approval for the subject use.

Most recent Special Use Permit # 99-0067

Date approved: September / 18 / 1999
Month day year

Name of applicant on most recent special use permit Mark Winkler Company

Use Transportation Management Plan

2. Describe below the nature of the **existing** operation in detail so that the Department of Planning and Zoning can understand the nature of the change in operation; include information regarding type of operation, number of patrons served, number of employees, parking availability, etc. (Attach additional sheets if necessary)

A new Development Special Use Permit application for Preliminary Development Plan approval is submitted along with this application. The new Preliminary Development Plan provides for a revision to the approved development for Parcel IA at Mark Center as well as the inclusion of development for Parcel IB. The new Preliminary Development Plan will include an addition of 374,616 square feet of floor area. The purpose of this application is to update the transportation management plan previously approved in Special Use Permit #99-0067. This application includes an analysis of the addition of Plaza IB, to create a new plaza known as Plaza I.

The traffic impact study and transportation management plan proposal is included in the document entitled Mark Center Plaza IA and IB Traffic Impact Study and Transportation Management Plan, prepared by Wells & Associates LLC and submitted with this application.

3. Describe any **proposed** changes to the business from what was represented to the Planning Commission and City Council during the special use permit approval process, including any proposed changes in the nature of the activity, the number and type of patrons, the number of employees, the hours, how parking is to be provided for employees and patrons, any noise emitted by the use, etc. (Attach additional sheets if necessary)

N/A

4. Is the use currently open for business? N/A Yes _____ No

If the use is closed, provide the date closed. _____/_____/_____
month day year

5. Describe any proposed changes to the conditions of the special use permit:

See Transportation Management Plan, prepared by Wells & Associates, LLC.

Accompanying this application.

6. Are the hours of operation proposed to change: _____ Yes _____ No
If yes, list the current hours and proposed hours:

Current Hours:	Proposed Hours:
N/A	

7. Will the number of employees remain the same? N/A Yes _____ No
If no, list the current number of employees and the proposed number.

Current Number of Employees:	Proposed Number of Employees:

8. Will there be any renovations or new equipment for the business? _____ Yes _____ No
If yes, describe the type of renovations and/or list any new equipment proposed

N/A

9. Are you proposing any change in the sales or service of alcoholic beverages? ____ Yes ____ No

10. Is off-street parking provided for your employees? _____ Yes _____ No
If yes, how many spaces, and where are they located?

See Development Special Use Permit application

11. Is off-street parking provided for your customers? N/A Yes _____ No

12. Is there a proposed increase in the number of seats or patrons served? _____ Yes _____ No
If yes, describe the current number of seats or patrons served and the proposed number of seats and patrons served. For restaurants, list the number of seats by type (i.e. bar stools, seats at tables, etc.)

Current:	Proposed:
N/A	

13. Are physical changes to the structure or interior space requested? N/A Yes _____ No
If yes, attach drawings showing existing and proposed layouts. In both cases, include the floor area devoted to uses, i.e. storage area, customer service area, and/or office spaces.

14. Is there a proposed increase in the building area devoted to the business? ____ Yes ____ No
If yes, describe the existing amount of building area and the proposed amount of building area.

Current Hours:	Proposed Hours:
N/A	

15. The applicant is the (check one) _____ Property owner _____ Lessee
X other, please describe: agent for Property owner

16. The applicant is the (check one) N/A Current business owner ____ Prospective business owner, _____ Other, please describe: _____

17. Each application shall contain a clear and concise statement identifying the applicant, including the name and address of each person owning an interest in the applicant and the extent of such ownership interest. If the applicant, or one of such persons holding an ownership interest in the applicant is a corporation, each person owning an interest in excess of ten percent (10%) in the corporation and the extent of interest shall be identified by name and address. For the purpose of this section, the term "ownership interest" shall include any legal or equitable interest held in the subject real estate at the time of the application. If a nonprofit corporation, the name of the registered agent must be provided.

Please provide ownership information here:

See Attachment 1

ATTACHMENT 1

List of Applicant/Owners with ownership information

Applicant

- The Mark Winkler Company
  - Owners of an interest greater than 10%
    - Margaret W. Hecht
    - Corolyn W. Thomas
    - Kathleen W. Wennesland

Owner of undeveloped land within Plaza I

- Mark Center Properties Limited Partnership
  - General Partner
    - Mark Center Properties, Inc.
  - Owners of a limited partnership interest greater than 10%
    - The Winkler Family Trust (99%)

Owner of developed property within Plaza I

4825 Mark Center Drive

- Parcel 901 Associates Limited Partnership
  - General Partner
    - Parcel 901, Inc.
  - Owners of limited partnership interest greater than 10%
    - Plaza I-A Associates Limited Partnership (51.263%)

4850 Mark Center Drive

- Institute for Defense Analyses

December 18, 2003

Ms. Eileen Fogarty
Director, Department of Planning and Zoning
City of Alexandria
City Hall
301 King Street, Room 2100
Alexandria, VA 22314

Re: The Mark Winkler Company; Mark Center Plaza IA and IB;
Preliminary Development Amendment (DSUP 2002-0038)
And Transportation Management Plan Amendment

Dear Ms. Fogarty:

The Mark Winkler Company has filed applications for an amendment to the Preliminary Development Plan for Mark Center Plaza IA and IB and an amendment to the Transportation Management Plan.

The purpose of this letter is to inform you that, on behalf of The Institute of Defense Analyses, the owner of 4850 Mark Center Drive located in Mark Center Plaza IA, I consent to the filing and processing of these applications.

Yours truly,

Ruth L. Greenstein

Dr. Ruth Greenstein
Vice President of Finance and Administration

11, 12
1-24-04

<jwmadden@starpower.net>

01/20/2004 03:00 PM
Please respond to jwmadden

To: <alexvamayor@aol.com>, <delpepper@aol.com>, <council@joycewoodson.net>, <councilmangaines@aol.com>, <rob@krupicka.com>, <macdonaldcouncil@msn.com>, <paulcsmedberg@aol.com>, <rose.boyd@ci.alexandria.va.us>, <jackie.henderson@ci.alexandria.va.us>
cc:
Subject: City of Alexandria Website Contact Us - EMail for Mayor, Vice-Mayor and Council Members (alexvamayor@aol.com, delpepper@aol.com, council@joycewoodson.net, councilmangaines@aol.com, rob@krupicka.com, macdonaldcouncil@msn.com, paulcsmedberg@aol.com, rose.boyd@ci.alexandria.va.us, jackie.henderson@ci.alexandria.va.us)

Time: [Tue Jan 20, 2004 15:00:07] IP Address: [208.59.89.56]

Response requested: []

First Name: James

Last Name: Madden

Street Address: 6207 Holmes Parkway

City: Alexandria

State: Virginia

Zip: 22311-1616

Phone: 703-379-1592

Email Address: jwmadden@starpower.net

Comments: I have lived within the City of Alexandria for over 31 years - all in the west end of the city. The last 27 years has been at 6207 Holmes Run Parkway. I have seen our residential area and particularly the commercial areas around it develop and grow over the years. Mostly for the better. The Winkler brothers were certainly a part of that development. Much of their spirit and vision continue. Skyline has been the another area of dense growth. While development has its benefit, unfortunately there is a detrimental by-product. That is, of course, increased traffic. The key to a great development is its ability to successfully handle the traffic it generates. Currently, my exit and entrance to my neighborhood is Seminary

Road which is already heavily traveled and can be a nightmare during rush hours. To add thousands of vehicles to the existing traffic is not a comforting thought.

I, as a resident of Alexandria, have no objection to the Winkler plan for constructing new office buildings behind the Hilton Hotel. Indeed, I understand that the City Council has already approved that project. I do, however, have serious reservations on their plan to accommodate the additional traffic to be generated by six to seven thousand employees at those new buildings, all who will be using Seminary Road or Beauregard Street. Here are my thoughts and concerns about this additional vehicular traffic.

I do not know the names of the new Winkler buildings so I will refer to them as the "Winkler business area" in the following remarks.

1. The traffic plan as presented by Winkler representatives appears to be flawod. The plan to have 3 left turn lanes off Seminary Road (going West) onto Beauregard Street (going South); then after one block (the next traffic light) having the 2 left lane on Beauregard designated as a left-turn lanes with the other lanes proceeding straight on Beauregard only inviles unwanted lane switching by folks who either want to go straight but are in the left hand lane or who are in the left hand land and want to go straight. There is already considerable lane switching on Seminary Road between those wanting to be in the left turn lanes and those wanting to continue straight. This switching delays the flow of traffic and puts people in harm's way. The proposed solution for incoming traffic into the Winkler business area will the Seminary switching and add the same delay on Beauregard with the additional potential of backing the delay into the Seminary/Beauregard intersection. This is n! either wise or desirable.

2. The Winkler traffic plan appears to address only the additional traffic between I395 and the Winkler business area. While this linkage will probably create most of the additional traffic, little thought seems to be given to the other avenues of approach, i.e., Seminary Road from the West and Beauregard from the North and tho South. Seminary Road is a major concern of the Seminary West Civic Association and the Dowden Terrace Civic Association. There is already a very heavy flow of traffic during the day and particularly during rush hour. The Skyline traffic that travels Seminary to get to I395 must be considered. The

western flow of traffic on Seminary that turns left into the Seminary West neighborhood is already at risk. The additional traffic will aggravate an already bad situation. I have already had one car "totaled" when rear-ended after stopping on Seminary for a left turn onto Fillmore.

3. New Fairfax residents working in the new office buildings will likely discover the Dowden Terrace - Seminary West neighborhood residential streets and decide them to be preferable routes over the clogged Seminary Road both in the morning and in the afternoon. Additional traffic (and drivers frequently in a great hurry) creates a serious hazard for our school children and also for the numerous joggers, walkers, bicyclist, and dog walkers that use our neighborhood as a safe haven to walk and exercise. We do not want to generate additional neighborhood traffic. It is a proven axiom in traffic engineering that vehicular traffic is like electricity; it will find the path of least resistance. That path should not go through our residential neighborhood. (I recall a previous city council in the 80's that erected a barricade at the city-county line in our neighborhood and made some streets one-way as a response to heavy through traffic. I'm certainly not advocating that, but I do! mention it as a solution to increased traffic in an earlier time.)

4. When a backup exists on I395 South onto Seminary Road, the likelihood of additional traffic exiting early off I395 into the Southern Towers parking lot, then through the lot and either onto Seminary or across Seminary into the Winkler business area. I have already seen that happen without the addition of four or five thousand vehicle to the mix. This is not a scenario that safe-minded people should create.

5. The "exiting" solution presented by Winkler is the building of one right-turn lane exiting the Winkler business area onto the Seminary East exchange. This solution heavily favors traffic going south on I395. One right turn lane would appear to be very insufficient. In addition it creates the option for the driver in a hurry to get in the right turn lane then proceed to cross lanes to traffic either onto Seminary East or into the exchange for going onto I395 North.

6. Response by emergency vehicles to our neighborhood during rush hours should also be considered in the final traffic plan.

I understand that Winkler does not yet have an

occupant for the new buildings. That being the case there must be time available for a careful and thorough analysis of their traffic plan or the generation of a new one. I urge the Council to take that path. There are more options than just the building of a third left turn lane for handling thousands of additional vehicles.

Thank you for your time and for considering this neighborhood problem.

James W. Madden
6207 Holmes Run Parkway
Alexandria, VA 22311-1616

11,12
1-24-04

<cmschw@comcast.net
>

01/15/2004 09:06 AM
Please respond to
cmschw

To: <alexvamayor@aol.com>, <delpepper@aol.com>, <council@joycewoodson.net>, <councilmangaines@aol.com>, <rob@krupicka.com>, <macdonaldcouncil@msn.com>, <paulcsmedberg@aol.com>, <rose.boyd@ci.alexandria.va.us>, <jackie.henderson@ci.alexandria.va.us>
cc:
Subject: City of Alexandria Website Contact Us - EMail for Mayor, Vice-Mayor and Council Members (alexvamayor@aol.com, delpepper@aol.com, council@joycewoodson.net, councilmangaines@aol.com, rob@krupicka.com, macdonaldcouncil@msn.com, paulcsmedberg@aol.com, rose.boyd@ci.alexandria.va.us, jackie.henderson@ci.alexandria.va.us)

Time: [Thu Jan 15, 2004 09:06:46] IP Address: [68.86.18.237]

Response requested: []

First Name: Charles

Last Name: Schwidde

Street Address: 4200 Ormond Avenue

City: Alexandria

State: VA

Zip: 22304

Phone: 703-370-9645

Email Address: cmschw@comcast.net

Comments: Dear Council Members,

My wife and I are 25 year-plus residents of Alexandria near Seminary Rd. We endorse the Seminary Hill Association letter of Jan. 14th to the Council.

We think that Councilman MacDonald's view for an expanded study is the correct way to proceed. Seminary Rd.'s traffic has already increased substantially in the last decade (see presentations by Rich Baier of City
showing that Seminary Rd. traffic has increased by at least 10,000 cars a day in the past 10 years).

The proposal as it stands will lead to confusion and traffic accidents, including potential fatalities. The fairest proposal is for a dedicated turn lane to the new site from a new I-395 Exit. While this may be expensive, who among you wants to be ultimately responsible for traffic accidents and fatalities on Seminary Rd.? Furthermore, let's not clog up Seminary Rd. more than is necessary!

Please slow this development down until we know we have a traffic solution that is safe, fair, efficient, and easily understood by motorists!

Thank you,

Charles Schwidde

11, 12
1-24-04

"Bostain, Lynn"
<LBostain@virginia.org
>

01/16/2004 03:23 PM

To: <Jackie.henderson@ci.alexandria.va.us>
cc:
Subject: Seminary West Civic Association letter for all Councilpersons and Mayor Euille

Jackie,
Could you please see that each City Council member receives this letter as well as Mayor Euille? Many thanks.
Lynn Bostain
P.S. My personal e-mail address is lbostain@erols.com

Lynn Bostain, CTC
Meetings Marketing Manager
Virginia Tourism Corporation
P.O. Box 11847
Alexandria, VA 22312
Phone: 202/872-0557 or 800/811-4296
Fax: 703/845-6380
lbostain@virginia.org
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www.vatc.org

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City Council letter, Jan 15 (Winkler).doc

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MEMORANDUM

TO: City Council
Cc: City Clerk
FROM: Lynn Bostain, President, Seminary West Civic Association
DATE: January 16, 2004
SUBJ: Winkler Traffic Proposal

The Seminary West Civic Association October 2003 meeting included a development plan presented by the Mark Winkler Company which included new traffic information that had not come before the citizens until that time, creating a dynamic that had not been in play in earlier. In addition, there seemed to be inconsistencies and varying numbers about the numbers of vehicles that the new development would bring. To explore those issues, I requested a separate meeting with a "core group" from the affected neighbor-hoods and the Winkler Company, which took place on December 18. That meeting lasted 3 hours and raised even more questions about the traffic situation and the best means to ensure that the proposed development would have a minimal impact on our community.

A group from Seminary West Civic Association and Dowden Terrace attended the Planning and Zoning meeting at City Hall on Tuesday, Jan. 6, which, as you know, resulted in a 7-0 decision in favor of the Winkler Company plan. This vote was rendereddespite the fact that citizens requested an independent traffic study because of traffic problems that had not been addressed in the Winkler Company-sponsored study.The Winkler Co. correctly states that neighboring communities endorsed a 1997-98 plan to construct office buildings on their property. That endorsement, however, was based on reasonable and viable traffic mitigation efforts that looked at options to adding left-turn lanes to Seminary and Beauregard. Seminary West Civic Association's concerns are not with Winkler building construction, but with traffic logistics that were considered dangerous in 1997-98 and appear to be even more dangerous in 2004.

Prior to the Dec. 18 and Jan. 6 meetings, it was the understanding of both the Seminary West and Dowden Terrace Civic Associations that the Winkler Co. intended to pursue the idea of either a flyover or direct access from I-395 directly into their property, thus avoiding the danger of adding more traffic to the already heavily-traveled Seminary/Beauregard Road juncture by adding a 3rd left turn off Seminary Road and a 2nd left turn off Beauregard into Mark Center Drive. Documents from 1997-1998 record this understanding and note that former Transportation Director Tom O'Kanesaid that to add a 3rd left turn lane off Seminary Road onto Beauregard St. would be "perilous" and that former Councilman David Speck requested a more viable solution than the 3rd left turn lane on Seminary Road. Citizens were taken by surprise when the Winkler Company presented its plan in October 2004, ignoring 1997-1998's traffic suggestions and showing the added left turn lanes on Seminary Road and Beauregard Street as givens.Residents of Seminary West are still hoping for some sort of direct access to the Winkler property either from a ramp off I-395 or via a flyover as originally proposed.

In recent phone calls, CouncilmenAndrew Macdonald and Ludwig Gaines expressed interest not only in an independent traffic study, which Seminary West Civic Association endorses, but Councilman Gaines suggested a multi-*regional* traffic study. In light of already serious traffic congestion in the West End of Alexandria and proposed new building at Skyline and the Winkler complex, as well as the inevitability of future expansion in the entire area, Seminary West Civic Association advocates that the City examine very carefully, through an independently-contracted study, the present and anticipated traffic patterns in the West End of the City.

11,12
1-24-04

<acave9@comcast.net>

01/15/2004 08:11 PM
Please respond to acave9

To: <alexvamayor@aol.com>, <delpepper@aol.com>, <council@joycewoodson.net>, <councilmangaines@aol.com>, <rob@krupicka.com>, <macdonaldcouncil@msn.com>, <paulcsmedberg@aol.com>, <rose.boyd@ci.alexandria.va.us>, <jackie.henderson@ci.alexandria.va.us>, <sharon.wells@ci.alexandria.va.us>, <page.moon@ci.alexandria.va.us>, <page@focusdatasolutions.com>

cc:

Subject: City of Alexandria Website Contact Us - EMail for Mayor, Vice-Mayor and Council Members (alexvamayor@aol.com, delpepper@aol.com, council@joycewoodson.net, councilmangaines@aol.com, rob@krupicka.com, macdonaldcouncil@msn.com, paulcsmedberg@aol.com, rose.boyd@ci.alexandria.va.us, jackie.henderson@ci.alexandria.va.us, sharon.wells@ci.alexandria.va.us, page.moon@ci.alexandria.va.us, page@focusdatasolutions.com)

Time: [Thu Jan 15, 2004 20:11:51] IP Address: [68.86.29.95]

Response requested: []

First Name: Alice

Last Name: Cave

Street Address: 3736 Gunston Road

City: Alexandria

State: VA

Zip: 22302

Phone: 7033791521

Email Address: acave9@comcast.net

Comments: Mayor, Vice Mayor, and Members of the Council: My husband and I are lucky enough to live and work within the City, our office is located in the Mark Center complex, 1500 N Beauregard St. So, we were appalled to read in the Post of the development plans to add even more buildings and 6000 parking places to the location behind 4900 Seminary Road. Our commute takes us

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south on 395 from Shirlington to Seminary Road West, and this exit from 395 is already very congested during rush hour. Adding this many more drivers (and let's face it, expecting a large percentage of those people to commute on the metro and use a shuttle is not that realistic) will bring traffic there to a standstill. Some specifics:

What genius came up with the idea to have a 3-lane left turn onto N Beauregard from Seminary? N Beauregard has only 2 lanes, where will that third lane go? During the morning rush at this intersection, the lanes headed straight are much more heavily travelled. Take one of those lanes away, as shown in the diagram, will back that traffic up a long way, probably back to Alexandria Hospital or worse!

One of the problems facing the intersection now is those people who want to turn left to get into the 4900 building now, at the light before N Beauregard. If these people are coming from 395, it is already a big jam of people trying to quickly cut across two lanes of traffic. Add 6000 more drivers and you have a nightmare backing up onto 395.

This intersection already needs to be re-engineered. Adding all this traffic will bring it to a complete halt on a regular basis. I agree with the comment of Councilman MacDonald, who said "we haven't done our homework on this." Please take this back to the drawing board, and for once, halt the development until the road issues have been fixed!

Very Sincerely,
Alice Cave and Rick Fletcher

11, 12
1-24-04

<IntsSilins@aol.com>

01/16/2004 12:05 PM
Please respond to
IntsSilins

To: <alexvamayor@aol.com>, <delpepper@aol.com>, <council@joycewoodson.net>, <councilmangaines@aol.com>, <rob@krupicka.com>, <macdonaldcouncil@msn.com>, <paulcsmedberg@aol.com>, <rose.boyd@ci.alexandria.va.us>, <jackie.henderson@ci.alexandria.va.us>
cc:
Subject: City of Alexandria Website Contact Us - EMail for Mayor, Vice-Mayor and Council Members (alexvamayor@aol.com, delpepper@aol.com, council@joycewoodson.net, councilmangaines@aol.com, rob@krupicka.com, macdonaldcouncil@msn.com, paulcsmedberg@aol.com, rose.boyd@ci.alexandria.va.us, jackie.henderson@ci.alexandria.va.us)

Time: [Fri Jan 16, 2004 12:05:30] IP Address: [172.155.169.159]

Response requested: []

First Name: Ints and Elizabeth

Last Name: Silins

Street Address: 5683 Rayburn Avenue

City: Alexandria

State: VA

Zip: 22311

Phone: 703 998-8971

Email Address: IntsSilins@aol.com

Comments: Dear City Council Members:

When the traffic management plan for the Mark Center expansion comes before you on January 24, please hold off approval and order an independent traffic study to be done. The present proposal, involving additional left-turn lanes to handle an additional 6000 cars per day, seems certain to generate gridlock, causing pollution and inconvenience and dangerously impeding the movement of emergency vehicles during rush hour. A better solution could be direct access from I-395 to the new complex. This would eliminate the need for many cars to make a traffic-clogging detour via Seminary and

Beauregard to their jobs in the new buildings.

So far the Mark Center development has proceeded commendably, but this latest proposal could produce a bottleneck that would seriously degrade the area.

Thank you for your attention to this issue.

Sincerely, Ints and Elizabeth Silins

PHONE-GRAM® for: CC

11 & 12
~~1-24-04~~

From Samuel Dodson Company

City 5511 Dawes Ave. Alex. 22311 Area Code Phone

☑ Telephoned ☐ Please return the call ☐ Returned your call ☐ Will call again ☐ Came in ☐ See me

Message He is against the traffic management plan on the 1-24 docket. Docket item #11 + 12.

Date 1-20 Time 9:00 Taken by KY

Action Wanted

Action Taken