TRAFFIC IMPACT ANALYSIS - CAPPER/CARROLLSBURG DWELLINGS PLANNED UNIT DEVELOPMENT, WASHINGTON, DC

(Case No.03 -____)



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ZONING COMMISSION
District of Columbia
Case 03-12
Exhibit 7

ZONING COMMISSION
District of Columbia
CASE NO.03-12
EXHIBIT NO.7A1

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EXECUTIVE SUMMARY

The Capper-Carrollsburg Venture, LLC, plans to rezone and re-develop a 25.0± acre area, within the Southeast section of Washington, D.C. The area is bounded roughly by M Street, New Jersey Avenue, Second Street, Virginia Avenue and 7th Street. The development site is zoned Residential (R-5-B) and Commercial (C-3-C), and is developed with 707 public housing units. Current plans call for the rezoning of the site to include Commercial Residential (CR) zoning. The site will also be developed with 1,645 residential units, three (3) office buildings totaling 702,000 square feet and 51,000 square feet of community-serving retail, in accordance with the City's Planned Unit Development (PUD) guidelines.

The traffic study evaluated a roadway network consisting of thirteen (13) intersections, in accordance with the District Department of Transportation (DDOT) Transportation Policy and Planning Administration. The assessment of existing traffic conditions was based on weekday peak period traffic turning movement counts conducted at the study area intersections; and the analysis of the peak hour volumes, utilizing the Highway Capacity Manual (HCM) procedures.

It is noted that the HCM methodology is not applicable to unsignalized intersections which have three-lane approaches, such as those along M Street. These intersections were therefore analyzed using the Critical Lane Volume (CLV) methodology to provide planning information and perspective regarding their operational efficiency and capacity. Based on application of the two capacity analysis techniques, the study found that the study area roadway network currently operates within DDOT's acceptable Level-of-Service standards, during both the morning and afternoon peak hours.

The proposed development is scheduled to be built-out in Year 2007. The assessment of the future (Year 2007) traffic conditions considered the following factors:

a) Approved and pending (background) developments planned for the areas in the vicinity of the subject development. Fourteen (14) background developments were considered.

b) Potential increase in through traffic along the study area roadways, based on historical growth trends.

c) The projected trip generation and traffic assignment for the proposed development. This considered the proximity of the site to the WMATA Navy Yard Metrorail Station, as well as to major existing and planned employment land uses.

Two (2) of the background developments considered, i.e., the U.S. Department of Transportation (DOT) Headquarters and the Southeast Federal Center, would be accessed via entrances to be located at the M Street/New Jersey Avenue and M Street/4th Street intersections. As such, geometric and signalization improvements are planned for the M Street/New Jersey Avenue intersection. These improvements were included in the analysis of the future (Year 2007) traffic conditions, without and with the proposed Arthur Capper/Carrollsburg Dwellings development.

Analysis of the future traffic conditions show that the study area roadway network would operate acceptably, without the proposed PUD, provided that the access improvements planned for the U.S. DOT Headquarters development are implemented. The proposed

development would generate an average of 807 additional peak hour vehicular trips, unto the study area road network. These trips will be well distributed, reducing the impacts on individual intersections. The study area road network would continue to operate acceptably upon build-out of the proposed development, and considering the M Street/New Jersey Avenue intersection improvements noted above.

The study has determined that the proposed parking provisions would be more than adequate. Review of the City's Municipal Regulations, relative to the proposed land uses and zoning districts, indicates that 1,105 off-street parking spaces would be required. Current plans call for the provision of 2,000 off-street parking spaces on the development site. These spaces would be distributed to adequately satisfy the specific parking space requirements of the land use types. In addition, the proposed off-street parking would be supplemented by 480± on-street parking spaces. Based on the above, the study concludes that sufficient parking would be provided on the proposed development site to serve the needs of the prospective users.

As noted above, the proposed Arthur Capper/Carrollsburg Dwellings development would not have an appreciable adverse impact on the study area road network. However, this study has considered the following measures which would serve to mitigate adverse traffic conditions on the study area roadway network:

1) **Transportation Management Plan**

   A Transportation Management Plan (TMP) would be implemented at the proposed development to further reduce its peak hour trip generation and related impacts. Efforts would be made to integrate the TMP with plans developed for the U.S. Department of Transportation Headquarters, Southeast Federal Center and other planned developments.

2) **Area Planning Studies and Initiatives**

   Several area planning studies and initiatives have recommended and are considering transportation improvements which would improve traffic conditions within the study area. Key planning efforts include the "Anacostia Waterfront Initiative" (NCPC, 2002), "South Capitol Street Urban Design Study" (NCPC, 2003), "South Capitol Street Gateway and Improvement Study" (DDOT, 2003), as well as the WMATA Regional Bus Study (2002) and WMATA/DDOT Transit Development Study (2002). These studies have collectively recommended roadway infrastructure and transit improvements which would reduce through volumes along M Street and increase the transit modal split of the area developments, including the Arthur Capper/Carrollsburg Dwellings. The improvements would therefore enhance traffic flow and intersection operational conditions along M Street, within the study area.

Based on the above, the study concludes that the proposed Arthur Capper/Carrollsburg Dwellings Planned Unit Development could occur without any appreciable adverse traffic impacts. The proposed development would satisfy the City's requirements for adequate public facilities, and would not be "objectionable" to the existing and prospective users of the proposed development site and vicinal areas, from the perspective of potential traffic and parking impacts.

1.0 INTRODUCTION

1.1 Project Background

The Capper-Carrollsburg Venture, LLC (hereinafter "the Applicant") plans to re-zone and redevelop properties within a 25.0± acre area within the Southeast section of Washington, D.C. The development area (hereinafter referred to as "the site" or "the property") is bounded generally by New Jersey Avenue and 2nd Street to the west, Virginia Avenue to the north, Seventh Street to the east, and M Street to the south. The site is zoned Residential (R-5-B), except for two (2) parcels which are zoned Commercial (C-3-C), and are situated along the western periphery of the subject site. The area is improved with approximately 707 public housing units, which comprise the Arthur Capper Dwellings (96 units), the Arthur Capper Senior Apartments (297 units) and the Carrollsburg Dwellings (314 units). Exhibit 1 shows the site location and configuration.

The Applicant plans to rezone the subject property to include Commercial Residential (CR) zoning, and redevelop the properties with a mix of land uses, in accordance with the proposed zoning category and the City's Planned Unit Development (PUD) guidelines. The proposed land uses mix is as follows:

Development Type	Density
1. Residential	1,645 units
2. General Office	702,000 Square Feet
3. Retail	51,000 Square Feet

The development plan also proposes the closure of existing alleyways within three (3) squares. These are further discussed in Section 5 of the study. (It is envisioned that I Street, S.E., would be connected between 2nd Street and New Jersey Avenue, S.E., in the long term.) The proposed development will be served by a total of 2,480 ± parking spaces, consisting of 2,000 ± off-street spaces and approximately 480 ± on-street spaces.

A number of factors make the proposed development attractive from the perspective of access and internal circulation. These are as follows:

(a) The development site is easily accessible via M and South Capitol Streets, as well as other major roadways, which provide access to Downtown, Washington, D.C., and to the broader metropolitan region;

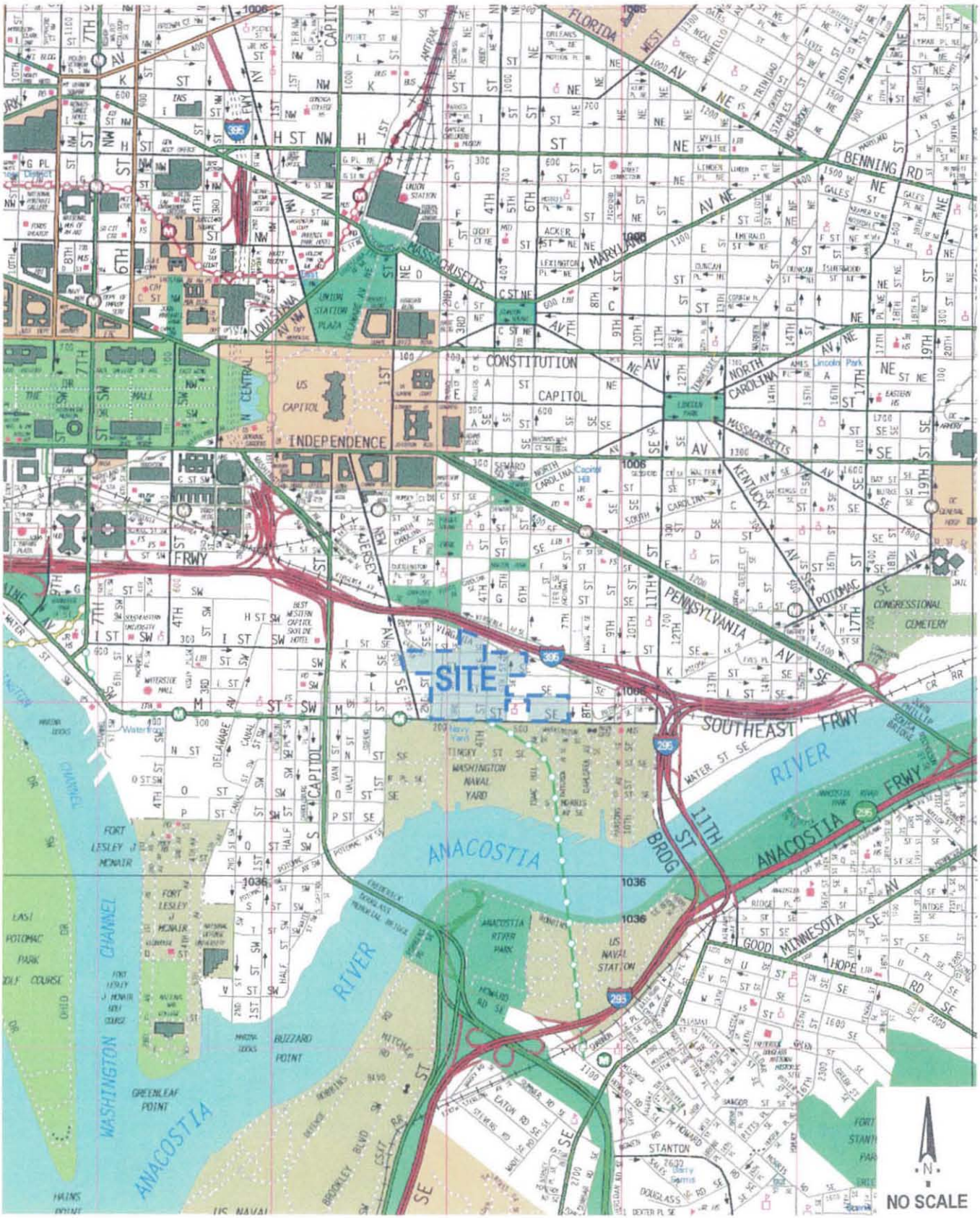
(b) The proposed site is situated in proximity to the Navy Yard Metrorail Station, on the Washington Metropolitan Area Transit Authority (WMATA) Green Line;

(c) The site is in proximity to significant existing and planned employment centers, including Capitol Hill, Navy Yard and Southeast Federal Center;

(d) The site is located in proximity to a number of public schools and other community-serving facilities; and

(e) The proposed development will include local-serving retail, and a new community/day care center is being planned for an adjacent area to the east (along 5th Street, S.E.).

The above factors would significantly reduce the trip generation and related impacts of the proposed development, particularly during the morning and afternoon peak periods. These factors are further considered in the relevant sections of this report.



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Exhibit 1

Site Location Map
Arthur Capper / Carrollsburg Dwellings
Planned Unit Development

1.2 Study Purpose and Scope

This study was prepared as supporting documentation to the Applicant's Planned Unit Development application. The purpose and key elements of the study are to evaluate and document the following:

(a) Existing roadway and traffic conditions within the immediate area of the subject site;

(b) Future "background" traffic conditions, based on a generalized examination of planned developments within the sub-area, and potential annual growth in through traffic along the key study area roadways;

(c) The traffic impact of the re-zoning and development proposal, considering existing and planned transportation facilities, site trip generation, access and on-site circulation;

(d) A generalized assessment of the impacts of the proposed alleyway changes, in order to satisfy the City's requirements that such improvements would not adversely impact the public interest; and

(e) Any capacity, safety, or operational constraints to the proposed re-zoning and development, as well as potential measures to mitigate such constraints, where appropriate.

The methodology used in this analysis is in accordance with the current general guidelines followed by the District of Columbia Department of Transportation (DDOT) Transportation Policy and Planning Administration for the Large Tract Review process. The study area and other key parameters considered were also discussed with the responsible staff. Appendix A presents correspondence outlining the scope of the study.

1.3 Report Organization and Summary

This report is organized into six (6) sections. The current Section presents the background and context for the study. Section 2 evaluates existing roadway and traffic conditions. Section 3 addresses projected growth in traffic due to the impact of approved developments within the general study area, as well as potential growth in through traffic along the key study area roadways. Section 4 analyzes the traffic impact of the Applicant's re-zoning and development proposal, and assesses related site access, circulation and parking provisions. Section 5 addresses road closures within the subject development site. Section 6 discusses potential/planned mitigation strategies for any capacity, operational and safety constraints that may result from the proposed development. Section 7 summarizes the study findings and makes recommendations, where appropriate, to mitigate any potential transportation impacts identified.

The study has concluded that the existing study area road network and proposed roadway changes can adequately accommodate the Applicant's development proposal. The study area intersections currently operate at quite acceptable levels of service. The projected future traffic conditions will include significant background developments and proffered roadway improvements. The proposed development would result in an appreciable increase in trip generation for the subject site, due primarily to the proposed land use mix. However, the ingress and egress movements of the incremental site trips would be well distributed to and from the study area. Based on the above considerations, the future study area road network would operate at acceptable levels of service, upon full build-out of the subject development. The proposed development would therefore satisfy the City's adequate public facilities requirements.

2.0 EXISTING ROADWAY AND TRAFFIC CONDITIONS

2.1 Land Use and Zoning

From the planning context, the local "impact area" may be defined as that bordered by the Anacostia River to the south, I-295 (SW Freeway) to the north and east, and S. Capitol Street to the west. The Federal "enclave" of the SEFC and the Navy Yard Complex, situated south of M Street, constitutes approximately half of this area. The squares comprising the proposed development site are zoned Residential (R-5-B) and Commercial (C-3-C), and are occupied with public housing units. The area situated further to the north is zoned residential, and is developed with residential uses. The area situated immediately to the west is zoned Commercial (C-3-C), and is improved primarily with a mix of office, retail and light industrial land uses. The Navy Yard Metrorail Station is situated to the southwest, with a portal on each side of M Street.

2.2 Study Area Road Network

Based on our discussions with the DDOT Transportation Policy and Planning Administration staff, a roadway network consisting of thirteen (13) intersections was identified for evaluation in our study. These intersections are as follows:

1) New Jersey Ave. @ I St., S.E. (stop sign controlled);
2) New Jersey Ave. @ K St., S.E. (stop sign controlled);
3) New Jersey Ave. @ M St., S.E. (stop sign controlled);
4) Third St. @ M St., S.E. (signalized);
5) Fourth St. @ M St., S.E. (stop sign controlled);
6) Fifth St. @ M St., S.E. (stop sign controlled);
7) Seventh St. @ M St., S.E. (stop sign controlled);
8) Eighth St. @ M St., S.E. (signalized);
9) Virginia Ave. @ 8th St., S.E. (signalized);
10) Virginia Ave. @ 7th St., S.E. (signalized);
11) Virginia Ave. @ 5th St./6th St., S.E. (signalized);
12) Virginia Ave. @ 4th St., S.E. (signalized); and
13) Virginia Ave. @ 3rd St., S.E. (signalized).

The physical and functional characteristics of the key study area roadways are described below:

- **M Street, S.E.**: This is a six-lane divided minor arterial on the City's Highway System. The facility runs east-west along the southern perimeter of the development site; and connects the area to the City's Central Employment and Business District via South Capitol Street, as well as Maine Avenue and 7th Street, S.W., further to the west. M Street therefore serves considerable commuter traffic. This roadway will provide direct access to the proposed development site, via several side streets. Parking is allowed on both sides, with peak period directional flow restrictions. Within the area of the proposed development, M Street serves Average Daily Traffic (ADT) volumes in the range of 12,200 vehicles. The posted speed is 30 MPH.
- **New Jersey Avenue, S.E.**: This is a collector facility, which runs north-south along the western perimeter of the proposed development site. New Jersey Avenue provides a single lane of travel in each direction, with unrestricted parking allowed along both sides of the roadway. The roadway serves ADT volumes in the range of 2,000 vehicles, and has a posted speed limit of 25 MPH.

- **Virginia Avenue, S.E.**: This is an east-west collector roadway on the City's Highway System. The roadway is closed to through traffic west of 2nd Street, S.E. Between 2nd and 4th Streets, S.E., there is two-way traffic flow, with a single lane provided in each direction. West of 4th Street, S.E., Virginia Avenue changes to one-way eastbound, with two (2) travel lanes provided. Parking is allowed with varying restrictions, between 2nd and 5th Streets, S.E. The ADT volumes served by this roadway are in the range of 5,000 vehicles. The posted speed limit is 25 MPH.

The other study area roadways are all classified as local or collector streets on the City's Highway System. All streets serve two-way traffic, except 5th Street north of K Street, which is one-way northbound. The posted speed limit along these roadways is 25 MPH. Exhibit 2 shows the lane configuration and traffic control devices provided within the study area road network.

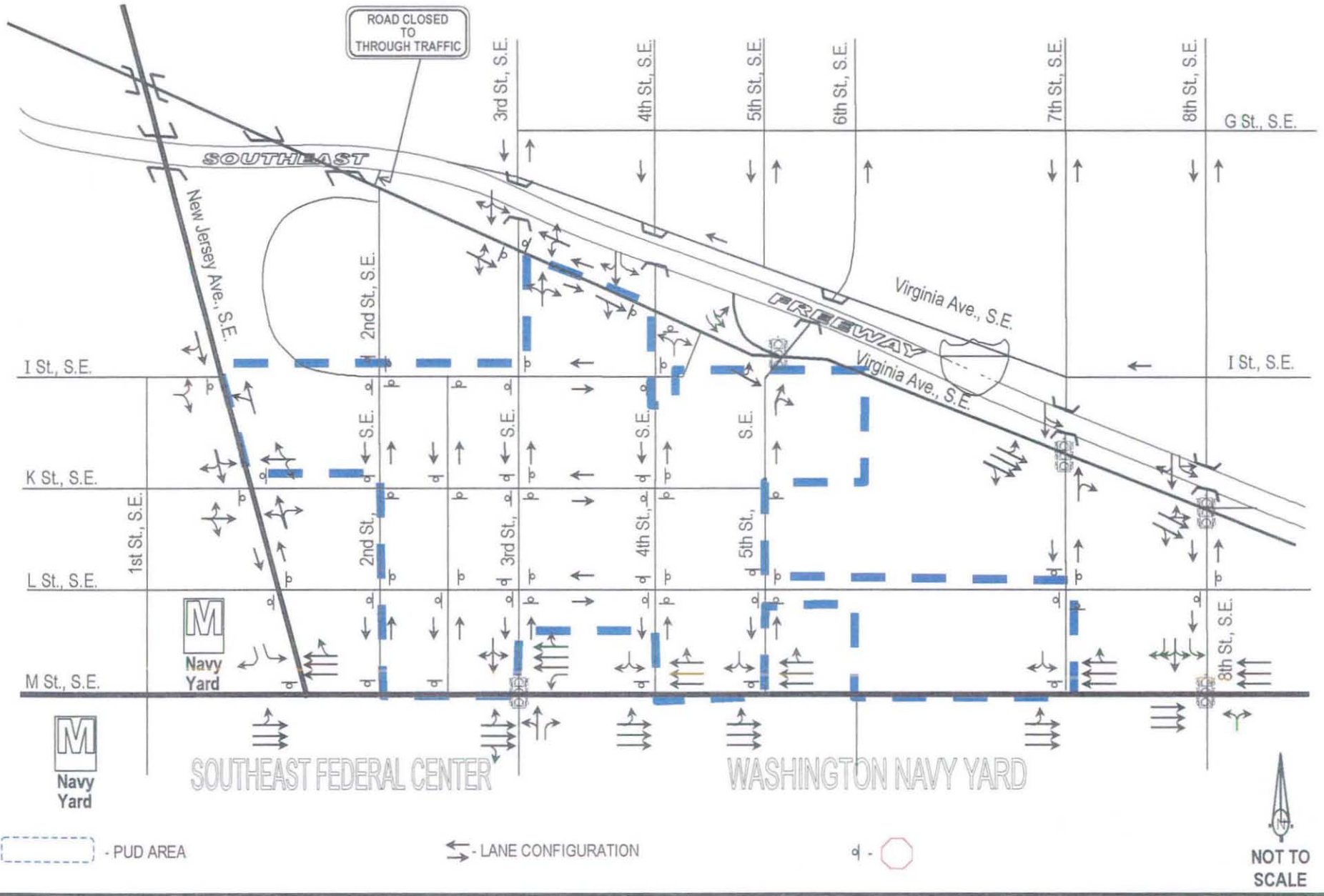
2.3 Existing Traffic Situation

Field observations were made of existing weekday traffic flow conditions, within the general study area, during the morning and afternoon peak periods. In addition, peak period turning movement counts were undertaken at the study area intersections. Exhibit 3 shows the morning and afternoon peak hour volumes. The count summaries are presented in Appendix B.

The City's guidelines recommend the application of the Highway Capacity Manual (HCM) procedures in analyzing intersection peak hour turning movement volumes. However, regarding unsignalized intersections, the HCM methodology can only be applied to those with single or two-lane roadway approaches. Since M Street consists of three (3) lanes in each direction, the unsignalized intersections along this roadway were not analyzed, using the HCM procedure. However, for planning and information purposes, the Critical Lane Volume (CLV) technique was applied. This technique is a simplified approach that is used nationally, as well as by adjacent jurisdictions, to assess the operational efficiency of unsignalized and signalized intersections.

The analysis results show that the study area intersections currently operate at acceptable levels of service during both the morning and afternoon peak hours. The computed levels of service are summarized in Table 1 on Page 8. The capacity analysis worksheets are included as Appendix C.

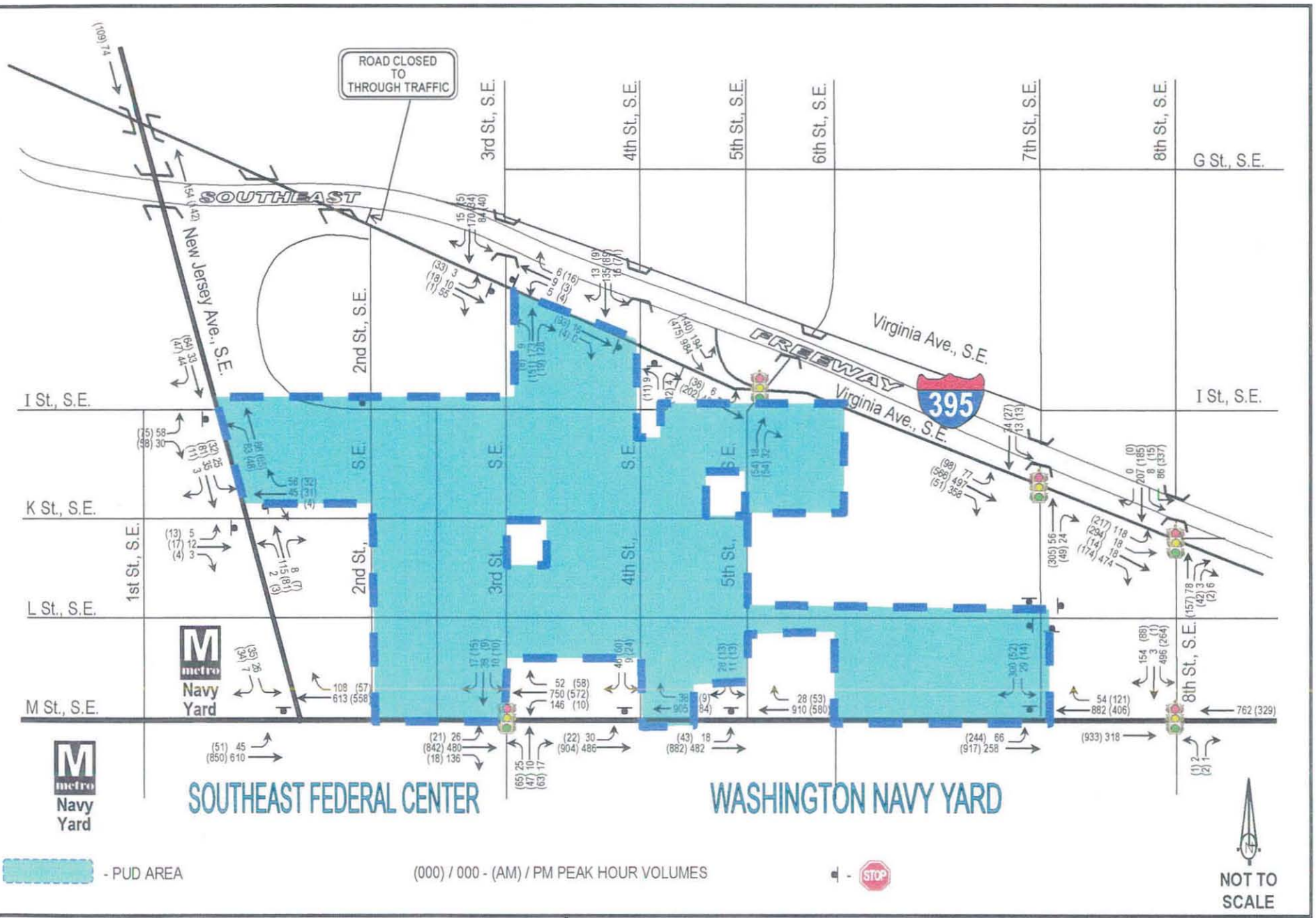
Level of Service is a qualitative measure that describes operational conditions within a traffic stream or at an intersection, and reflects their perception by drivers and other roadway users. Principal considerations are factors such as speed and travel time, delay, freedom of maneuver, traffic interruptions, comfort, convenience and safety. Current engineering practice defines six (6) Levels of Service (A-F) with "A" representing best operating conditions, and "F" representing worst conditions. Level of Service "D" is generally considered by the District of Columbia as the minimum acceptable standard for planning and design purposes. Appendix C-0 shows the Levels of Service and associated delay ranges for signalized and unsignalized intersections.



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Exhibit 2

Existing Roadway Lane Configurations & Traffic Control Devices
Arthur Capper / Carrollsburg Dwellings - Planned Unit Development



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Exhibit 3

Existing Peak Hour Traffic Turning Movement Volumes
Arthur Capper / Carrollsburg Dwellings - Planned Unit Development

TABLE 1

SUMMARY OF CAPACITY ANALYSIS RESULTS – EXISTING TRAFFIC SITUATION

Intersections	AM Peak Hour		PM Peak Hour	
	Level of Service	Average Delay (Secs.)	Level of Service	Average Delay (Secs.)
1) New Jersey Ave. @ I St., S.E. **	B	11.5	B	11.0
2) New Jersey Ave. @ K St., S.E. **	B	11.1	B	11.0
3) New Jersey Ave. @ M St., S.E. **	*N/A*	*N/A*	*N/A*	*N/A*
-- Based on CLV Analysis	A	*N/A*	A	*N/A*
4) 3rd St. @ M St., S.E. *	B	17.3	B	15.5
5) 4th St. @ M St., S.E. **	*N/A*	*N/A*	*N/A*	*N/A*
-- Based on CLV Analysis	A	*N/A*	A	*N/A*
6) 5th St. @ M St., S.E. **	*N/A*	*N/A*	*N/A*	*N/A*
-- Based on CLV Analysis	A	*N/A*	A	*N/A*
7) 7th St. @ M St., S.E. **	*N/A*	*N/A*	*N/A*	*N/A*
-- Based on CLV Analysis	A	*N/A*	A	*N/A*
8) 8th St. @ M St., S.E. *	B	15.9	B	15.0
9) Virginia Ave. @ 8th St., S.E. *	B	15.6	C	23.2
10) Virginia Ave. @ 7th St., S.E. *	B	15.4	B	15.5
11) Virginia Ave. @ 5th/6th St., S.E.*	B	19.2	C	24.8
12) Virginia Ave. @ 4th St., S.E. **	A	8.2	A	8.3
13) Virginia Ave. @ 3rd St., S.E. **	C	15.4	B	12.3

N/A = Not Applicable

* Signalized intersection.

** Unsignalized intersection. HCM results are provided for unsignalized intersections with single or two-lane approaches only. CLV Level-of-Service results are provided for those with three-lane approaches.

Source: O. R. George & Associates.

2.4 Traffic Safety Situation

In order to assess the traffic safety situation within the study area, accident data was obtained from the DDOT Traffic Services Administration, for the key study area intersections. This data covered the most recent three-year period, i.e., 1999 - 2001. Copies of the accident data summaries are included as Appendix D. Review of this data indicates that there are currently no significant safety deficiencies at the study area intersections, warranting further analysis and evaluation.

3.0 BACKGROUND TRAFFIC SITUATION

3.1 Projected Year 2007 Background Traffic Situation

Current plans call for the build-out of the Arthur Capper/Carrollsburg Planned Unit Development by the year 2007. Therefore, for the purposes of this analysis, the year 2007 was considered the "design year". Based on the City's guidelines and procedures, the year 2007 background traffic conditions would consist of the following elements:

(a) Potential increase in through traffic based on historical growth trends;

(b) Traffic generation from planned/background developments within the local impact area, which are scheduled to be built-out by the completion of the subject development; and

(c) Planned/programmed improvement projects which would impact the configuration of the study area roadway network.

The DDOT's Traffic Volume Maps indicate that through traffic along M Street, has increased at an annual growth rate in the range of two percent (2.0%), during the period 1996 – 2002. This is consistent with the DDOT's growth assumptions for roadways serving significant through traffic volumes. Based on this consideration, and in view of the significant background developments planned for the immediate study area, an annual growth factor of two percent (2.0%) was therefore applied to the existing traffic volumes, unto the year 2007. The 2007 base year traffic situation, reflecting this growth is included as Appendix E.

The background developments considered in this study were based on the following:

i) Economic Development Map of the District of Columbia Office of the Deputy Mayor for Planning and Economic Development;

ii) Development activity information provided by the Office of Planning; and

iii) The developments considered by the "U.S. Department of Transportation Headquarters Traffic Impact Analysis" (Gorove Slade & Associates, 2003) and the "4th Street SW Transportation Study" (DDOT, 2003).

Based on the above, it was determined that fourteen (14) planned developments would have some impact on the local area road network. These developments are listed in Table 2 on the page following.

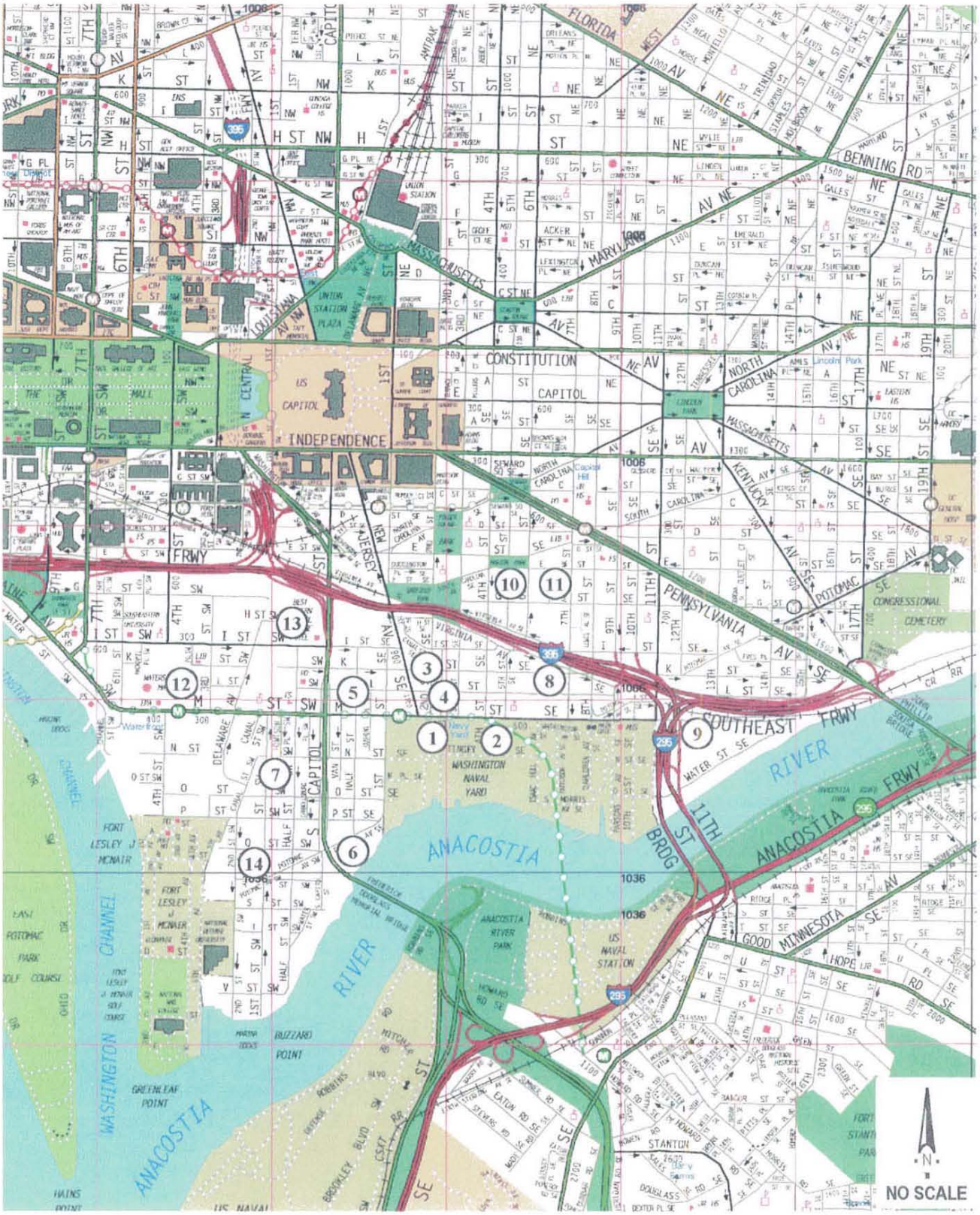
TABLE 2

LIST OF BACKGROUND DEVELOPMENTS CONSIDERED

Development	Location	Land Use	Density
1) US Department of Transportation Hqtrs.	South of M St. & East of 1st St., S.E.	Office Retail	5,500 Employees 13,500 SF
2) Southeast Federal Center	South of M St./3rd St. S.E. Int.	Office Apartments Retail	713,000 SF 1,800 Units 160,000 SF
3) Capitol Hill Towers	New Jersey Ave. @ L St., S.E.	Apartments Hotel	342 Units 200 Rooms
4) Federal Gateway	2nd St. @ M St., S.E.	Office Retail	297,000 SF 20,000 SF
5) 20 M Street	North of M St., East of S. Capitol St., S.E.	Office	190,000 SF
6) Florida Rock I & II	Potomac Ave., S.E. & S.W.	Office Apartments Retail Hotel	589,660 SF 200 Units 55,000 SF 600 Rooms
7) Syphax Village	O St. @ Carrollsburg Pl., S.E.	Townhouses	41 Units
8) Marine Barracks	7th St. @ L St., S.E.	Apartments	200 Units
9) Maritime Plaza Phases II & III	12th & 13th Sts. @ M St., S.E.	Office Retail Hotel	450,000 SF 50,000 SF 200 Rooms
10) Lenox School	5th St. @ G St., S.E.	Townhouses	13 Units
11) Polk Court	G St. @ F St. Terr. S.E.	Apartments	24 Units
12) Waterside Mall	401 M St., S.W.	Office Apartments Retail Supermarket	1,693,500 SF 200 Units 75,000 SF 30,000 SF
13) Millennium Arts Center	1st @ I Street, S.W.	Recreational Comm. Ctr.	150,000 SF
14) Capitol Point Riverside	2nd St. @ Potomac Ave. SE	Office Apartments Retail	600,000 SF 500 Units 50,000 SF

Source: Agencies & Studies cited on Page 9, and O.R. George & Associates.

The locations of the background developments noted above are shown in Exhibit 4. Table 3 presents the projected trips for these development proposals, based on trip rates recommended by the Institute of Transportation Engineers (ITE) Trip Generation Manual (1997), as well as estimates developed for various developments in DDOT's "4th Street SW Transportation Study." The projected traffic assignments for these background developments are presented in Appendix F. The projected combined trip assignment is shown in Exhibit 5 on page 13.



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Exhibit 4

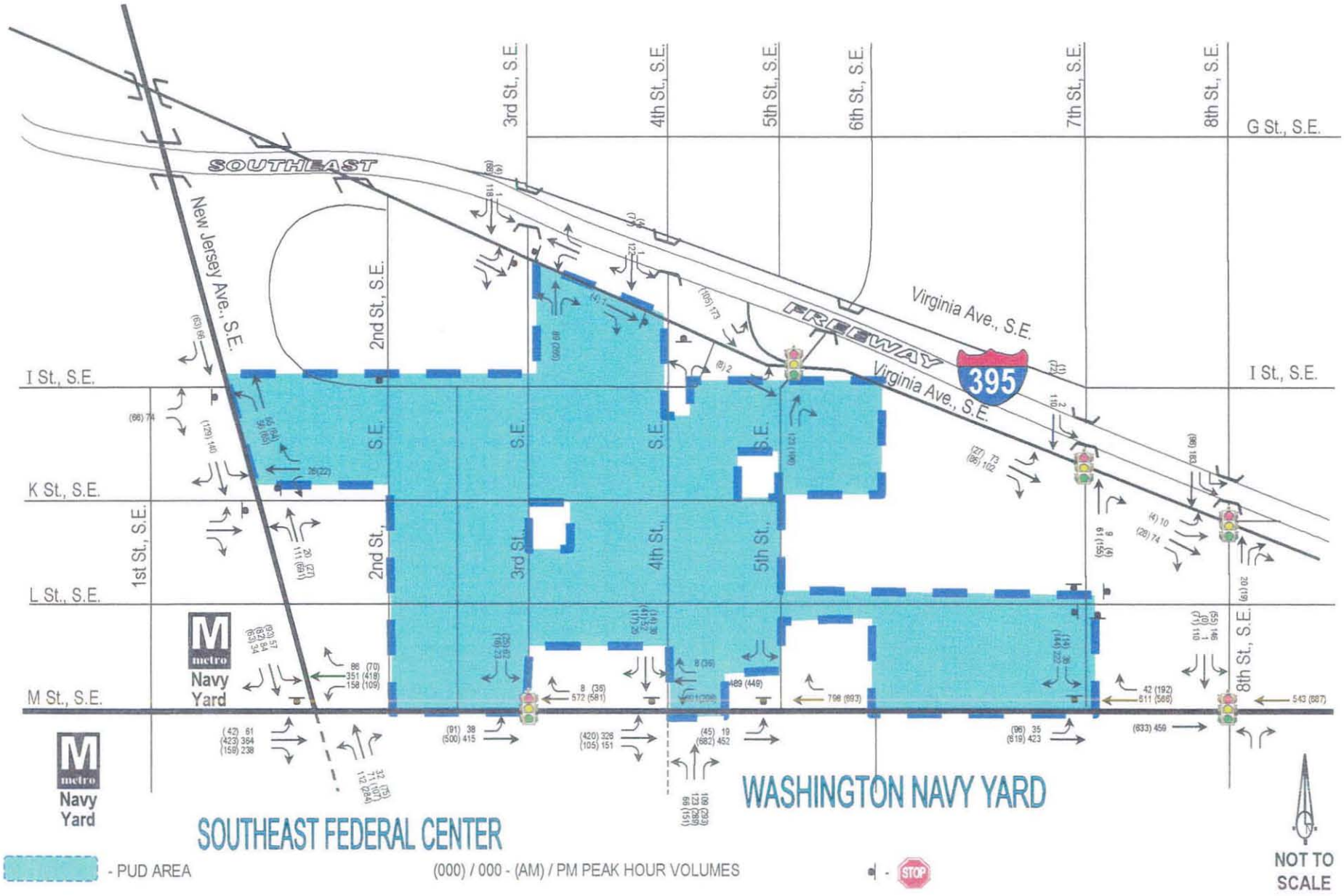
APPROXIMATE LOCATIONS OF PLANNED BACKGROUND DEVELOPMENTS CONSIDERED
Arthur Capper / Carrollsburg Dwellings PUD

TABLE 3

PROJECTED TRIP GENERATION FOR OTHER BACKGROUND DEVELOPMENTS CONSIDERED

Development	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
1) US Department of Transportation						
-- Trips/5,500 Employees	462	35	497	47	422	469
-- Trips/13,500 SF Retail Space	9	6	15	24	26	50
2) Southeast Federal Center						
-- Trips/713,000 SF Office	369	50	419	70	343	413
-- Trips/1,800 Apartments	72	377	449	333	164	497
-- Trips/160,000 SF Retail	71	45	116	226	245	471
3) Capitol Hill Towers						
-- Trips/342 Apartments	12	65	77	61	30	91
-- Trips/200 Room Hotel	35	25	60	31	33	64
4) Federal Gateway						
-- Trips/297,000 SF Office	152	21	173	27	133	160
-- Trips/20,000 SF Retail	5	3	8	14	15	29
5) 20 M Street, S.E.						
-- Trips/190,000 SF Office	107	15	122	19	95	114
6) Florida Rock I & II						
-- Trips/589,660 SF Office	499	68	567	93	455	548
-- Trips/200 Apartments	14	76	90	72	36	108
-- Trips/55,000 SF Retail	50	32	82	51	55	106
-- Trips/600 Room Hotel	45	235	280	198	98	296
7) Syphax Village						
-- Trips/41 Townhouses	7	20	27	22	12	34
8) Marine Barracks						
-- Trips/200 Apartments	16	86	102	83	41	124
9) Maritime Plaza Phases II & III						
-- Trips/450,000 SF Office	618	84	702	114	557	671
-- Trips/50,000 SF Retail	32	20	52	90	97	187
-- Trips/200 Room Hotel	78	56	134	70	72	142
10) Lenox School						
-- Trips/13 Townhouses	1	5	6	5	2	7
11) Polk Court						
-- Trips/24 Apartments	2	10	12	10	5	15
12) Waterside Mall						
-- Trips/1,693,500 SF Office	711	97	808	158	770	928
-- Trips/200 Apartments	5	28	33	28	14	42
-- Trips/75,000 SF Retail	44	28	72	50	55	105
-- Trips/30,000 SF Supermarket	25	16	41	97	93	190
13) Millennium Arts Center						
-- Trips/150,000 SF Recreational Community Center	76	39	115	52	100	152
14) Capitol Point Riverside						
-- Trips/600,000 SF Office	824	112	936	152	742	894
-- Trips/500 Apartments	41	214	255	208	102	310
-- Trips/50,000 SF Retail	31	21	52	90	97	187
TOTALS	**4,413**	**1,889**	**6,302**	**2,495**	**4,909**	**7,404**

Source: ITE Trip Generation Manual (1997), and O. R. George & Associates.



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Exhibit 5

Combined Traffic Assignment - Background Developments
Arthur Capper / Carrollsburg Dwellings Planned Unit Development

As indicated above, the planned U.S. Department of Transportation (DOT) Headquarters and the Southeast Federal Center developments would have the greatest impact on traffic conditions on the study area roadway network. This would be due to the proximity of those developments, just across M Street from the subject PUD, and their proposed land uses and densities. Both projects are under the management of the General Services Administration (GSA). The GSA is currently considering several alternative proposals for the redevelopment of the Southeast Federal Center; and the build-out/design year for this project is uncertain. However, plans for the development of the U.S. DOT Headquarters are currently under review by the Zoning Commission. The projected design year for the U.S. DOT Headquarters is 2005.

The U.S. DOT Headquarters traffic study, which was referred to earlier, has identified several access and traffic control improvements as part of, and in support of this project. These improvements would also serve the access needs of the prospective Southeast Federal Center development. The improvements are as follows:

a) Closure of the existing site entrance, which forms the south leg of the M Street/3rd Street intersection;

b) Provision of a new entranceway off M Street at the New Jersey Avenue intersection; and the reconfiguration and signalization of the modified intersection; and

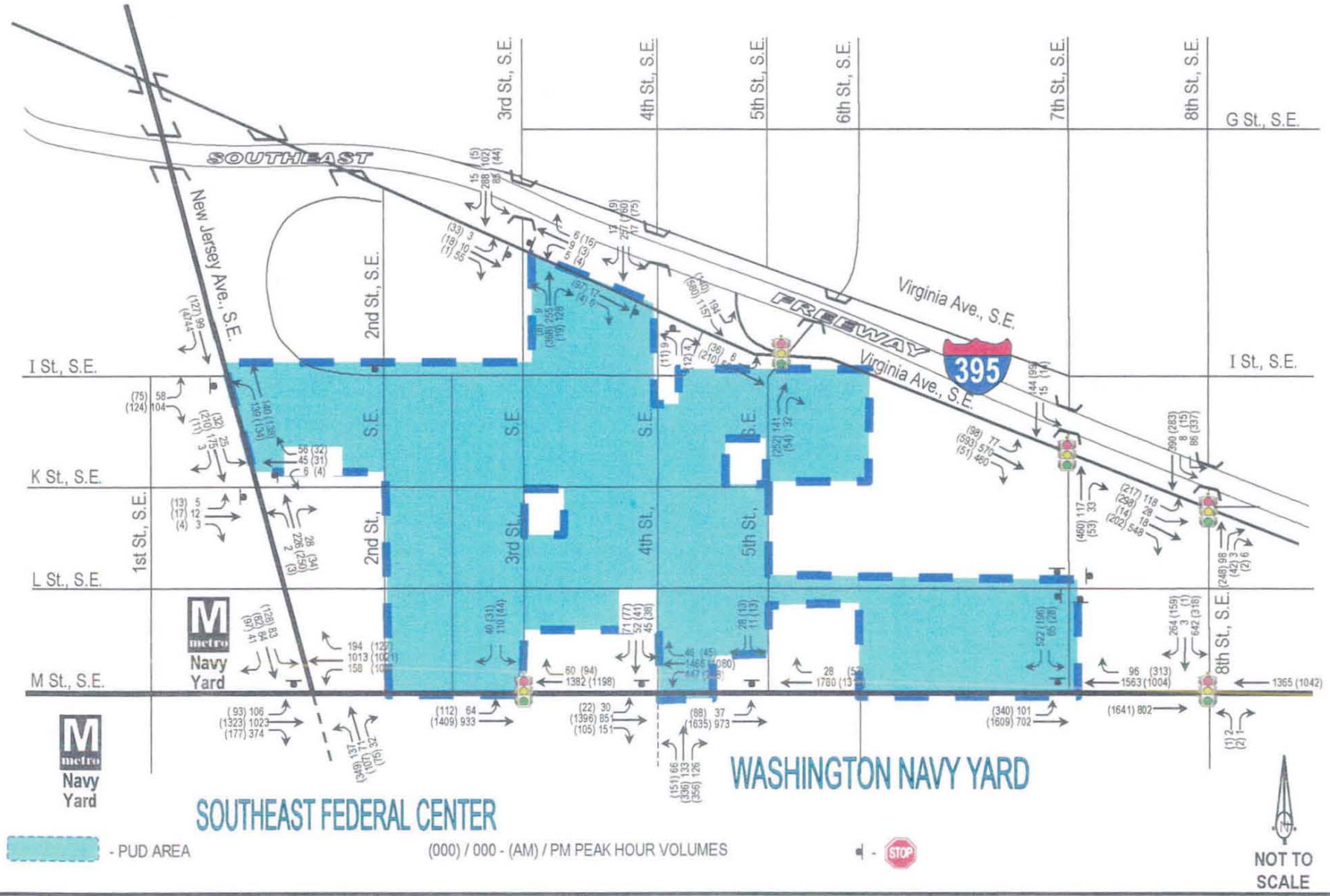
c) Provision of a new entranceway off M Street at the 4th Street intersection, as well as related roadway lane configuration and traffic control changes.

The roadway changes noted above are reflected in the analysis noted in Section 3.2 following.

3.2 Traffic Analysis – Year 2007 Background Traffic Situation

The projected year 2007 background traffic situation was derived by combining the year 2007 "base" traffic situation (Appendix E) with the combined trip assignment for the background developments considered (Exhibit 5). The projected year 2007 total background traffic situation is presented in Exhibit 6. These volumes were analyzed using the HCM and Critical Lane Volume capacity analysis procedures, as was done for the existing traffic situation.

Table 4 following summarizes the capacity analysis results for the projected year 2007 background traffic situation. The results show that the study area road network would continue to operate within the City's acceptable planning standards, with the implementation of the signalization and geometric improvements planned for the M Street/New Jersey Avenue intersection, in support of the planned U.S. DOT Headquarters development. Appendix G presents the capacity analysis worksheets.



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Exhibit 6

Projected Year 2007 Background Traffic Situation

Arthur Capper / Carrollsburg Dwellings - Planned Unit Development

TABLE 4

SUMMARY OF CAPACITY ANALYSIS RESULTS – PROJECTED YEAR 2007 BACKGROUND TRAFFIC SIUTATION

Intersections	AM Peak Hour		PM Peak Hour	
	Level of Service	Average Delay (Secs.)	Level of Service	Average Delay (Secs.)
1) New Jersey Ave. @ I St., S.E. **	B	14.8	C	16.0
2) New Jersey Ave. @ K St., S.E. **	C	15.5	C	15.1
3) New Jersey Ave. @ M St., S.E. **	*N/A*	*N/A*	*N/A*	*N/A*
-- Based on CLV Analysis	C	*N/A*	D	*N/A*
-- Based on HCM Analysis with Signalization***	C	28.9	C	23.8
4) 3rd St. @ M St., S.E. *	A	9.0	B	10.3
5) 4th St. @ M St., S.E. **	*N/A*	*N/A*	*N/A*	*N/A*
-- Based on CLV Analysis	C	*N/A*	D	*N/A*
-- Based on HCM Analysis with Signalization	C	27.3	C	31.5
6) 5th St. @ M St., S.E. **	*N/A*	*N/A*	*N/A*	*N/A*
-- Based on CLV Analysis	A	*N/A*	A	*N/A*
7) 7th St. @ M St., S.E. **	*N/A*	*N/A*	*N/A*	*N/A*
-- Based on CLV Analysis	C	*N/A*	D	*N/A*
8) 8th St. @ M St., S.E. *	B	19.4	B	19.0
9) Virginia Ave. @ 8th St., S.E. *	B	17.3	C	23.4
10) Virginia Ave. @ 7th St., S.E. *	B	16.4	B	18.4
11) Virginia Ave. @ 5th/6th St., S.E.*	C	24.1	C	28.3
12) Virginia Ave. @ 4th St., S.E. **	A	9.7	A	8.8
13) Virginia Ave. @ 3rd St., S.E. **	C	20.2	C	19.7

N/A = Not Applicable.

* Signalized intersection.

** Unsignalized intersection. HCM results are provided for unsignalized intersections with single or two-lane approaches only. CLV results are provided for those with three-lane approaches.

*** Signalization to be provided as part of the U.S. DOT Headquarters project.

Source: O. R. George & Associates.

4.0 FUTURE TRAFFIC SITUATION

4.1 Proposed Development Plan

As noted earlier in Section 1.1 of this study, current plans call for the rezoning and redevelopment of the subject site, in accordance with the City's Planned Unit Development (PUD) guidelines. The site is currently zoned R-5-B/C-3-C; and is currently improved with 707 public housing units. These consist of the Arthur Capper Dwellings (96 units), the Arthur Capper Senior Apartments (297 units) and the Carrollsburg Dwellings (314 units). Immediate access to the site is provided primarily off M Street, via a number of intersecting side streets.

The Applicant plans to rezone the subject property to include Commercial Residential (CR) zoning within four (4) squares. The plans also call for the following:

a) Redevelopment of the site with the following land uses and densities:

• Apartments	976 Units
• Single-Family	309 Units
• Senior Housing	360 Units
Total (Residential)	1,645 Units
• Office	702,000 SF
• Retail	51,000 SF

b) Provision of approximately 2,000 off-street parking spaces within surface and structured facilities. These will be supplemented by 480± on-street spaces.

c) Closure of the Canal Street right-of-ways (between 2nd Street and New Jersey Avenue), as well as alleyways within three (3) squares.

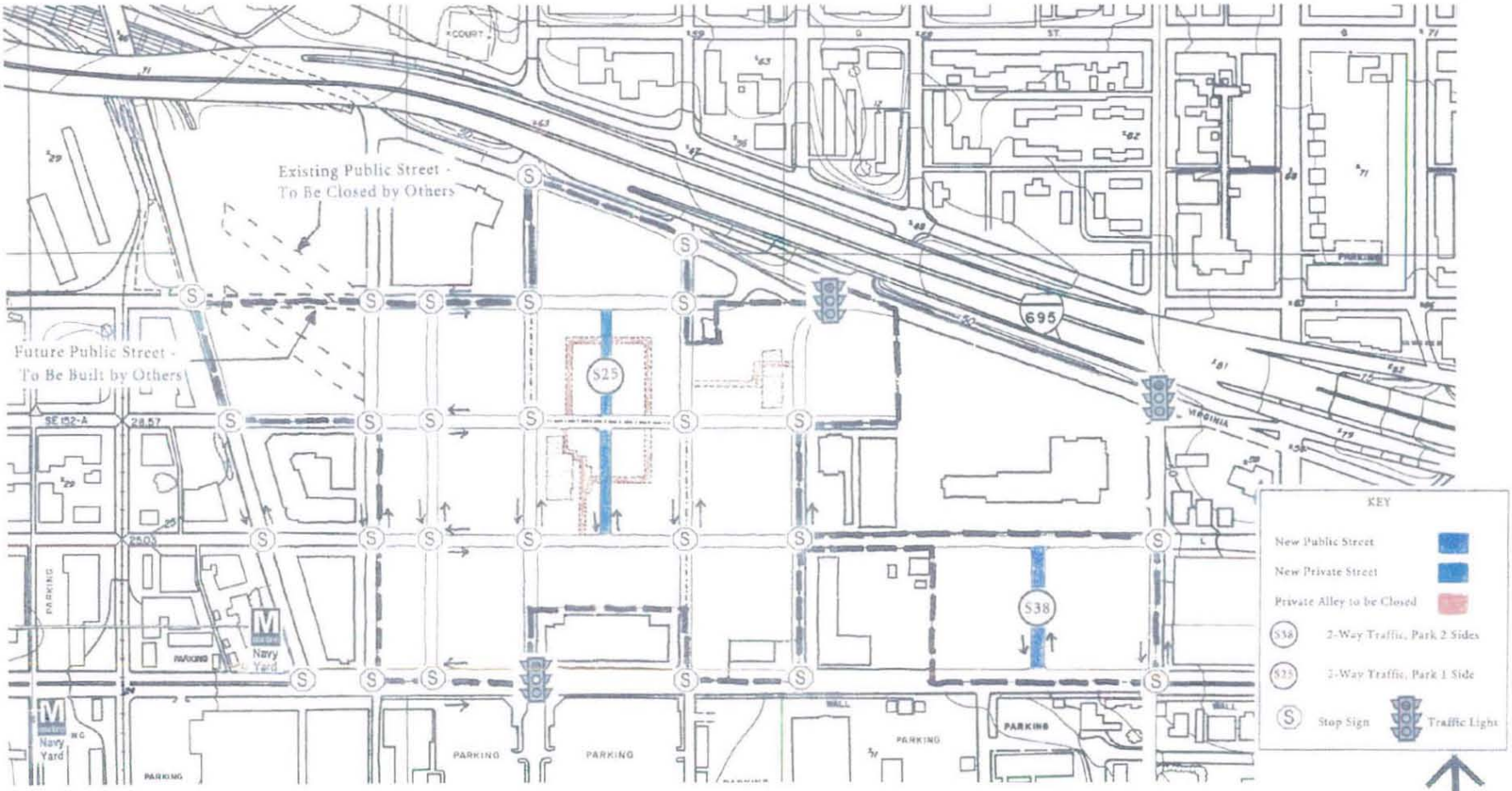
d) Provision of three (3) new north-south roadways. Two (2) of these roadways would be under private ownership, but would also serve public access and circulation.

The above-noted internal roadway changes are shown in Exhibit 7.

4.2 Trip Generation

Estimates of weekday vehicle trip generation for the proposed development will reflect the location of the site, relative to the adjacent Navy Yard Metrorail Station, as well as to Metrobus service along M Street and Virginia Avenue. Consideration will also be made of the site's proximity to the major existing and planned employment centers noted in earlier sections of this study. The projected trip generation will also reflect the mixed-use character of the future development, notably the commercial and residential components, as well as the proximity of the development to a number of public schools and other neighborhood facilities.

The D.C. Division of Transportation typically requires that the trip rates recommended by the Institute of Transportation Engineers be utilized in conducting traffic impact assessments. One element of this assessment pertains to the determination of the level of incremental trips that can be expected from the future site, when compared with the potential vehicle trip generation for the existing residential units. The trip estimates for the existing and proposed land uses were based on trip rates recommended by the Institute of Transportation Engineers (ITE) Trip Generation Manual (6th Ed., 1997). The trip rates were adjusted to reflect the proximity of the subject site to the Navy Yard Metrorail Station, as well as to existing and proposed residential and commercial developments within the immediate site area. Table 5 presents the projected trip rates and productions.



Source: Torti Gallas & Partners – CHK, Inc.

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Exhibit 7
Proposed Internal Roadway Changes
Arthur Capper / Carrollsburg Dwellings Planned Unit Development

TABLE 5

PROJECTED PEAK HOUR TRIP GENERATION – PROPOSED ARTHUR CAPPER/CARROLLSBURG DWELLINGS

	AM Peak Hour			PM Peak Hour		
Trip Rates	**In**	**Out**	**Total**	**In**	**Out**	**Total**
▪ Trips Per Apartment Unit	0.08	0.43	0.51	0.42	0.22	0.62
-- With 45% Assumed Transit Usage *	0.04	0.24	0.28	0.23	0.12	0.35
▪ Trips Per Single-Family Residential Unit	0.19	0.56	0.75	0.64	0.37	1.01
-- With 45% Assumed Transit Usage *	0.10	0.31	0.41	0.35	0.20	0.55
▪ Trips Per Senior Housing Unit	0.04	0.03	0.07	0.06	0.04	0.10
▪ Trips Per 1,000 SF Gen. Office	1.37	0.19	0.78	0.13	0.62	0.75
-- With 50% Assumed Transit Usage*	0.69	0.09	0.94	0.15	0.74	0.89
▪ Trips Per 1,000 SF Retail Space	0.63	0.40	1.03	1.80	1.94	3.74
-- With 90% Walk Trips	0.06	0.04	0.10	0.18	0.19	0.37
Trip Generation						
▪ Trips/976 Apartment Units	39	234	273	224	117	341
▪ Trips/309 Single-Family Units	31	96	127	108	62	170
▪ Trips/360 Senior Housing Units	14	11	25	22	14	36
▪ Trips/702,000 SF General Office	484	63	548	91	435	526
▪ Trips/51,000 SF Retail Space	3	2	5	9	10	19
A. Total (Proposed Development)	571	406	977	454	638	1,092
B. Existing Area Trips	28	170	198	162	85	247
Net Trips (A - B)	**+543**	**+236**	**+779**	**+292**	**+553**	**+845**

* Based on WMATA 1989 Development Ridership Survey Report (Figure 36, p. 103 and Figure 31, p. 94, for residential and office uses, respectively).

Source: ITE Trip Generation Manual (1997), WMATA and O. R. George & Associates.

4.3 Trip Distribution and Traffic Assignment

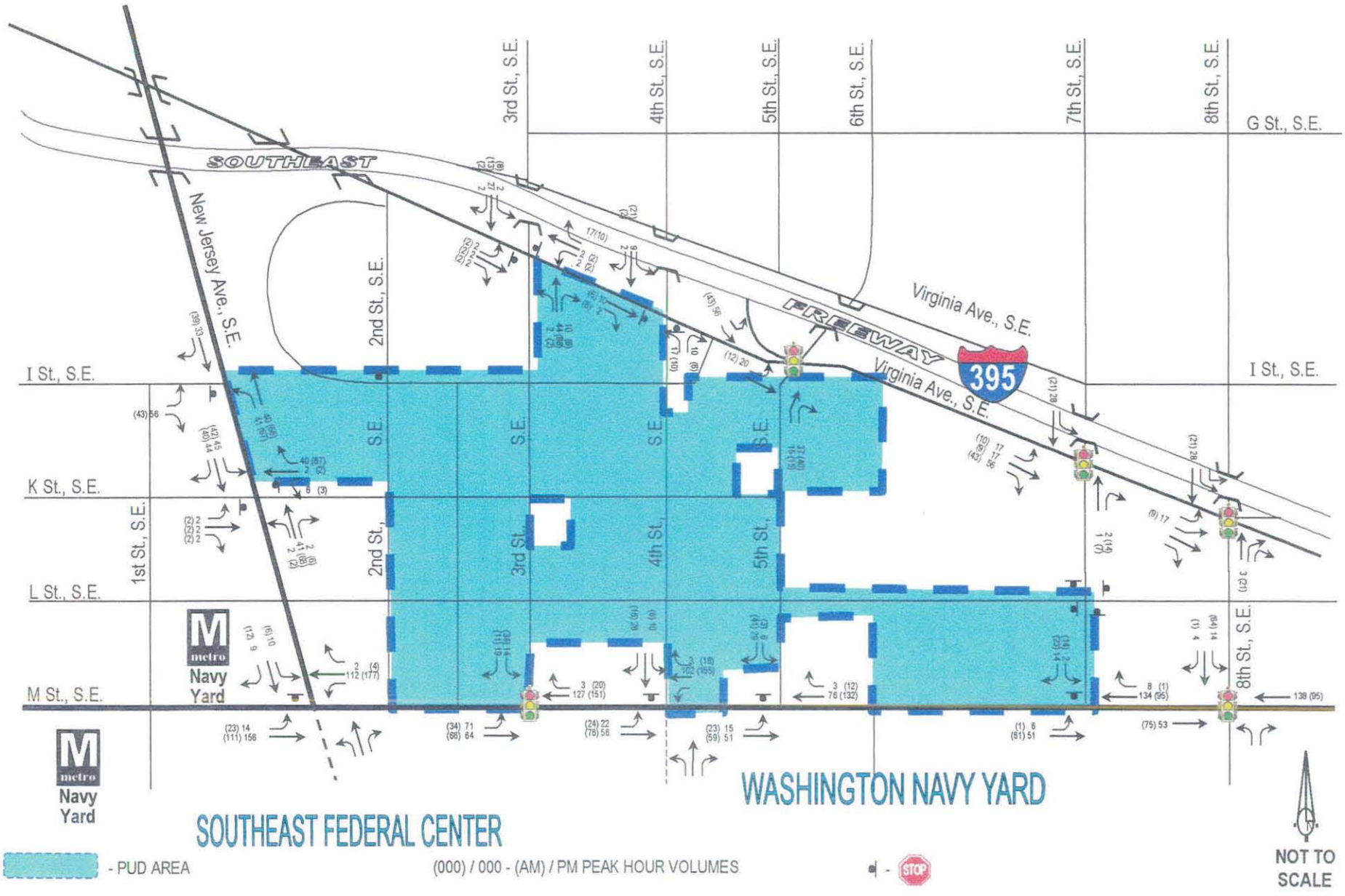
As noted earlier, the proposed development would consist of residential, commercial and community center land uses. The peak hour trip generation and distribution patterns for the residential component are related primarily to the location of the site relative to regional employment opportunities and associated travel patterns. Accordingly, the projected trip generation for the residential component of the proposed development would be heavily oriented towards areas such as the Washington, DC central employment core to the north, and the suburban Maryland and Virginia areas to the south and west, respectively. The proposed retail use would be community serving, with very minimal travel from the sub-region.

Based on the above, a significant proportion of the site trips will originate from within the local study area, via vehicular and non-motorized modes, as well as from existing traffic streams along the M Street, South Capitol Street and Southeast Freeway corridors. Trip distribution patterns for the proposed residential and commercial land uses were developed, considering the factors presented above, as well as the observed traffic patterns and the location of the site in relationship to the regional roadway network. The distribution patterns assumed and traffic assignments for the proposed land uses are included as Appendix H. The projected total site traffic assignment is illustrated in Exhibit 8.

4.4 Capacity Analysis – Year 2007 Total Traffic Situation

The year 2007 total traffic situation was derived by combining the traffic assignment for the proposed development (Exhibit 8) with the year 2007 total background traffic situation (Exhibit 6). The year 2007 total traffic situation is illustrated in Exhibit 9 (on page 22). These volumes were analyzed using the Highway Capacity Manual (HCM) and Critical Lane Volume procedures, as was done for the existing and background traffic conditions. The level-of-service results are presented in Table 6 on page 23.

The capacity analysis results indicate that, upon build-out of the proposed development, the study area intersections will operate acceptably with the signalization and geometric improvements to be implemented at the M Street/New Jersey Avenue intersection as part of the planned U.S. DOT Headquarters development. The capacity analysis worksheets for this situation are presented in Appendix I.



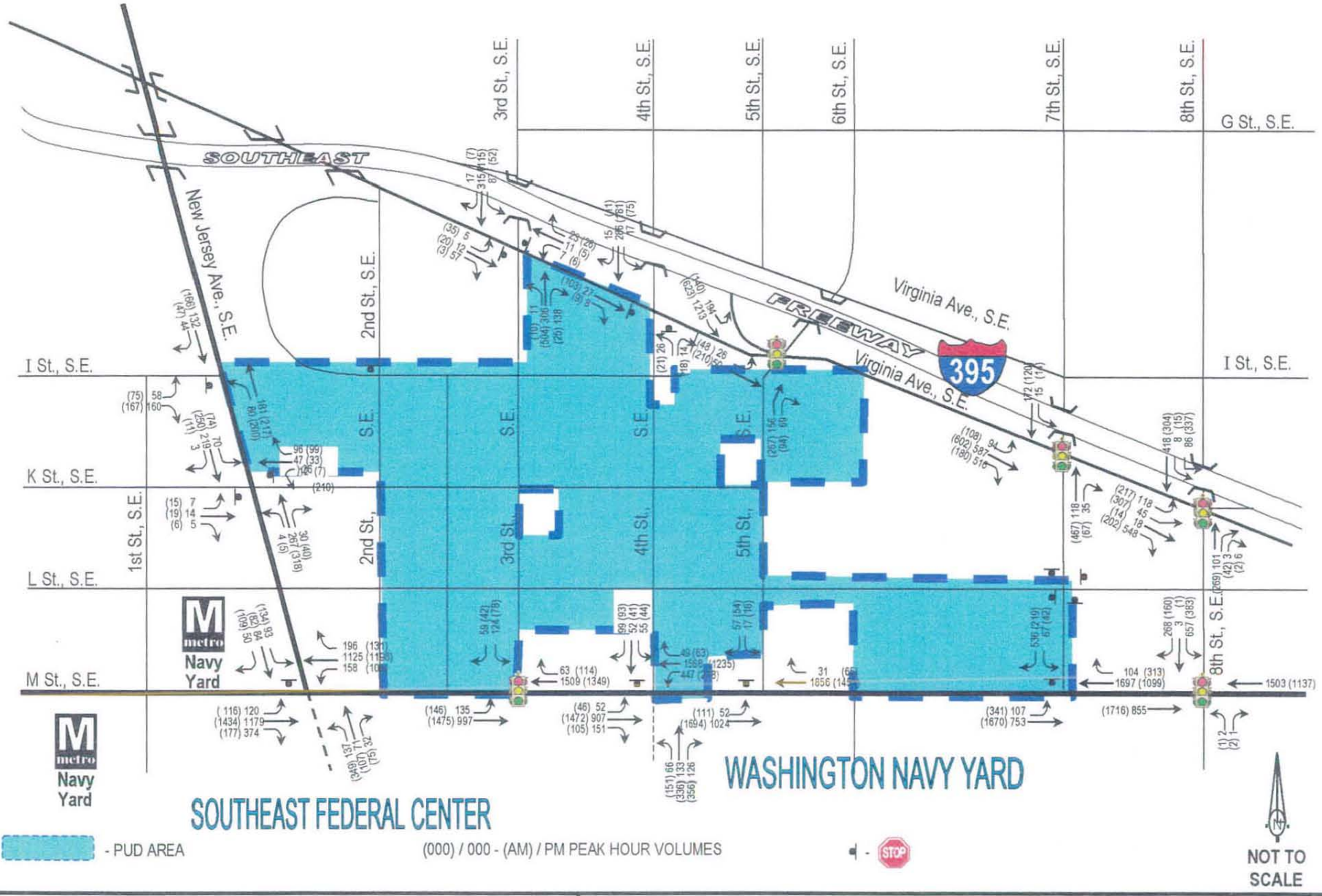
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Exhibit 8

Site Traffic Assignment

Arthur Capper / Carrollsburg Dwellings Planned Unit Development



O. R. GEORGE & ASSOCIATES, INC.

Traffic Engineers – Transportation Planners

Exhibit 9

Projected Year 2007 Total Traffic Situation

Arthur Capper / Carrollsburg Dwellings - Planned Unit Development

TABLE 6

SUMMARY OF CAPACITY ANALYSIS RESULTS – PROJECTED 2007 TOTAL TRAFFIC SITUATION (INCLUDING THE SUBJECT DEVELOPMENT)

Intersections	AM Peak Hour		PM Peak Hour	
	Level of Service	Average Delay (Secs.)	Level of Service	Average Delay (Secs.)
1) New Jersey Ave. @ I St., S.E. **	B	15.0	D	26.7
2) New Jersey Ave. @ K St., S.E. **	C	24.5	C	22.8
3) New Jersey Ave. @ M St., S.E. **	*N/A*	*N/A*	*N/A*	*N/A*
-- Based on CLV Analysis	C	*N/A*	E	*N/A*
-- Based on HCM Analysis with Signalization***	D	36.5	C	12.4
4) 3rd St. @ M St., S.E. *	B	18.6	B	12.4
5) 4th St. @ M St., S.E. **	*N/A*	*N/A*	*N/A*	*N/A*
-- Based on CLV Analysis	C	*N/A*	D	*N/A*
-- Based on HCM Analysis with Signalization	C	33.2	D	44.6
6) 5th St. @ M St., S.E. **	*N/A*	*N/A*	*N/A*	*N/A*
-- Based on CLV Analysis	A	*N/A*	A	*N/A*
7) 7th St. @ M St., S.E. **	*N/A*	*N/A*	*N/A*	*N/A*
-- Based on CLV Analysis	C	*N/A*	D	*N/A*
8) 8th St. @ M St., S.E. *	C	20.3	B	19.9
9) Virginia Ave. @ 8th St., S.E. *	B	17.7	D	42.0
10) Virginia Ave. @ 7th St., S.E. *	B	17.0	B	19.1
11) Virginia Ave. @ 5th/6th St., S.E.*	C	27.5	C	32.3
12) Virginia Ave. @ 4th St., S.E. **	B	10.2	A	9.0
13) Virginia Ave. @ 3rd St., S.E. **	C	20.8	D	26.0

N/A = Not Applicable

* Signalized intersection.

** Unsignalized intersection. HCM results are provided for unsignalized intersections with single or two-lane approaches only. CLV results are provided for those with three-lane approaches.

*** Signalization to be provided as part of the U.S. DOT Headquarters project.

Source: O. R. George & Associates.

4.5 Parking Analysis

As noted earlier, the proposed development site would comprise R-5-B, C-3-C and C-R zoned areas. The City's parking requirements, based on the proposed local uses and zoning categories are developed in the table following:

REQUIRED VS PROPOSED OFF-STREET PARKING

Land Use/ Zoning	Required Ratio	Required Parking	Proposed Off-Street Parking
• Apartments			
- C-3-C (200 Units)	0.25	81	
- CR (594 Units)	0.33	181	
- R-5-B (105 Units)	0.50	53	
- Subtotal		315	804
• Single-Family			
- R-5-B (309 Units)	1.0	309	516
• Senior Housing			
- R-5-B (360 Units)	0.17	61	76
• Office			
- C-3-C (221,000 GSF)	0.55	122	142
- CR (481,000 GSF)	0.55	266	408
• Retail			
- C-3-C (21,000 GSF)	1.07	22	22
- CR (30,000 GSF)	1.07	32	32
TOTAL		**1,127**	**2,000**

Source: DCMR Title 11-Zoning, and O. R. George & Associates.

The above table also shows the off-street parking proposed for the subject development, to facilitate comparison. The data clearly indicates that the proposed off-street parking exceeds the required parking by a factor of 1.8. It is also noted that the proposed development would be provided with approximately 480 on-street parking spaces, resulting in a total of 2,480 parking spaces. This parking supply would therefore be more than adequate, in terms of the projected needs of the future land uses.

5.0 ROAD CLOSURE CONSIDERATIONS

As noted earlier (in Section 4.1), the subject application proposes the closure of alleyways within three (3) squares. These were illustrated in Exhibit 7, on page 18. This exhibit also shows the future development proposal for the three (3) squares. Section 504 of District of Columbia Law 12-86 "Omnibus Reform Amendment Action of 1998" stipulates that the City *"may close all or part of any street or alley which is determined.....to be unnecessary for street and alley purposes"*. In the context of this regulation, the following should be noted:

a) The land uses currently abutting the alleyway segments proposed for closure would be demolished to facilitate the planned redevelopment; and

b) The proposed (future) roadway network would continue to provide adequate access to the study area and vicinal neighborhoods.

Based on the above, the proposed alley closures would not have any adverse impacts on the study area and vicinity. Based upon the PUD development proposal, it is evident that the existing alleyways will no longer be needed for access purposes. Furthermore, the proposed changes would not be detrimental to the adjacent properties; and would conform to the City's stipulations regarding streets and alleyways.

6.0 MITIGATION CONSIDERATIONS

6.1 Area Planning Studies and Initiatives

Several planning studies and initiatives, some of which are on-going, address existing transportation conditions within the immediate vicinity of the Arthur Capper/Carrollsburg development site. These efforts also highlight the need for transportation improvements in support of various planning, urban design and master plan development proposals. The key planning studies are noted below.

- **Anacostia Waterfront Initiative (AWI)**

  This is a multi-year comprehensive plan, which was commissioned by the District of Columbia Office of Planning. The geographic area of the AWI is the section of the Anacostia River corridor situated between the Potomac River and the Maryland State Line. The AWI also covers the area between the Anacostia River (to the south) and the Southeast/Southwest Freeway (I-395) (to the north), including the Arthur Capper/Carrollsburg PUD site. Specific transportation recommendations of the plan include:

  - Promotion of public transit throughout the AWI study area.
  - Provision of a new tunnel connecting I-295 with I-395, to significantly reduce through vehicular demand on the 11th and 12th Street Bridges, and the Frederick Douglass Bridge/South Capitol Street corridor. (This would result in reduced through volumes along M Street within the PUD study area.)
  - Modification of the 11th and 12th Street Bridges to increase transit and pedestrian usage.

- **South Capitol Street Urban Design Study (2003)**

  This study was undertaken by the National Capital Planning Commission and the District of Columbia Department of Planning. The primary objective was the development of alternative urban design and revitalization schemes that would accentuate the South Capitol Street corridor as a prominent axis of, and gateway to the Nation's Capital. Key transportation recommendations include:

  - Construction of a tunnel, connecting I-295 and I-395, to remove through traffic from South Capitol Street and the Frederick Douglass Bridge.
  - Construction of a new Frederick Douglass Bridge that would primarily serve local traffic, provide better connections to Potomac Avenue and other local streets, as well as accommodate increased levels of transit, higher pedestrian and bicycle usage.
  - Accommodation of local traffic on South Capitol Street, through the combination of boulevard, side street connection and public transit improvements.

- **South Capitol Street Gateway and Improvement Study (2003)**

  This study is currently being prepared for the District of Columbia Department of Transportation (DDOT), in response to a mandate of the United States Congress. The primary purpose of this study is to develop alternative transportation and land use proposals for transforming the South Capitol Street corridor into a local, transit and pedestrian oriented gateway to the Nation's Capital. The study corridor extends between Independence Avenue (to the north) and Suitland Parkway (to the south), and also includes New Jersey Avenue (between Independence Avenue and M Street, S.E.). The study consultants have completed a draft assessment of existing conditions and are currently developing improvement concepts, which would include significant transportation infrastructure changes. This study is scheduled to be completed in April 2003.

In addition to the above, the WMATA Regional Bus Study (2002) and the WMATA/DDOT Transit Development Study (2002) have recommended the enhancement of transit services along M Street, S.E./S.W. These include the provision of pre-emptive bus signalization and bus lanes, additional bus routes and trolley/light rail transit service.

6.2 Transportation Management Plan Considerations

As noted earlier, the Arthur Capper/Carrollsburg PUD will include 702,000 SF of office space and 1,645 residential units. The foregoing traffic analyses have shown that two (2) intersections along M Street would operate at capacity, upon build-out of the subject PUD as well as substantial land use developments planned within the immediate area. Based on these considerations, and in keeping with City policies regarding proposed large tract developments, this study includes below a Transportation Management Plan (TMP) for the proposed development.

6.2.1 Transportation Management Plan (TMP)

The primary objective of this TMP is the implementation of a mix of strategies and measures, which would reduce the single-occupant vehicle trips generated by the subject PUD, during weekday peak periods. This in turn would reduce traffic congestion, vehicle miles of travel, fuel emissions and other related factors, which could adversely impact the quality of life within the subject site and vicinal areas.

The principal source utilized for the development of the TMP is the Federal Transportation Management Program Handbook (1998), which was prepared by the General Services Administration and the National Capital Planning Commission for Federal employment centers. The plan also considers the location of the proposed PUD to the Navy Yard Metrorail Station, and to Metrobus services along M Street and Virginia Avenue. Consideration is also made of the significant commercial and residential developments, including the 5,500-employee U. S. Department of Transportation Headquarters, and the Southeast Federal Center. The proximity of the above developments to the Arthur Capper/Carrollsburg development provides substantial opportunities for the coordination and sharing of TMP strategies and measures.

Based on the above considerations, as well as other accepted planning principles and practices, the proposed TMP would include the following strategies and measures:

- **Resident and Employee Transportation Coordinator(s)**: This person(s) would be given designated responsibility for administering the TMP. Specific duties will include liaison with the prospective tenants and the City planning agencies; dissemination of transit, ridesharing and related information; parking management as well as the monitoring, evaluation and enhancement of the TMP strategies.

- **Carpools and Vanpools**: The transportation coordinator(s) would implement measures, which encourage these forms of ridesharing. These measures would include activities, which match residents and employees seeking to rideshare to/from work, in lieu of driving alone.

- **Staggered Work Hours**: The prospective office tenants would be encouraged to implement a variable work program, which includes flextime, a compressed work week and staggered work hours. These measures would serve to reduce the morning and afternoon peak period vehicular trip generation of the proposed office uses.

- **Parking Management**: The TMP will include the assignment of a limited number of preferentially located parking spaces to residents and employees participating in ridesharing activities managed by the transportation coordinator(s).

- **Coordination with Other TMP's**: In keeping with the policies and stipulations of the City planning agencies, and the Federal Handbook referred to earlier, it is envisaged that a TMP would be implemented at each of the substantial commercial/residential developments planned for the U.S. DOT Headquarters, Southeast Federal Center and other adjacent developments. The transportation coordinator(s) would also be responsible for investigating the possibility of coordinating and sharing program strategies, such as shuttle bus services, sale of Metro tickets, etc.

Based on the WMATA 1989 Ridership Report, transit reduction factors of 45% and 50% were considered for the proposed residential and office uses, respectively. It is estimated that an effective implementation of the TMP measures noted above, could increase the modal split to 50% (residential) and 55% (office). These modal splits would reduce the projected trip generation and related impacts of the proposed development.

6.3 Traffic Calming Measures

Section 3 of this study notes that significant land use developments are planned in the immediate vicinity of the subject site. Notable developments are the U.S. Department of Transportation Headquarters, Southeast Federal Center, and the Federal Gateway. These developments may result in some "cut-through" usage of the internal study area roadways. This study therefore recommends that traffic calming measures be considered for the proposed development. At the minimum, all-way stop control should be provided at the key internal intersections. Candidate locations for the implementation of this measure are as follows:

a) Second Street @ L Street;

b) Second Street @ K Street;

c) Third Street @ I Street;

d) Fourth Street @ I Street; and

e) Fifth Street @ K Street.

The key findings and conclusion of this study are presented in Section 7 following.

7.0 SUMMARY OF FINDINGS AND CONCLUSION

7.1 Summary of Findings

This study has examined the potential impacts of the proposed Capper/Carrollsburg Planned Unit Development. The study was performed in accordance with the general guidelines of the District of Columbia Department of Transportation (DDOT) Transportation Policy and Planning Administration, regarding the evaluation of the transportation impacts of development proposals, under the "Large Tract Review" process. The principal findings of the study are as follows:

a) The defined study area roadway network currently operates at acceptable levels of service, during both the morning and afternoon peak periods.

b) The design year (2007) background traffic conditions considered potential growth in through traffic along the key study area roadways. Based on the City's Economic Development Map, as well as information provided by the Office of Planning and DDOT's "4th Street SW Transportation Study," a number of significant planned/approved background developments were included in the year 2007 traffic forecasts.

c) The proposed development would generate an average of 807 peak hour vehicle trips unto the study area road network. These trips would be well distributed resulting in minimal impacts on the study area intersections.

d) The study area roadway network would continue to operate at acceptable Levels-of-Service, except for the M Street/New Jersey Avenue intersection which would operate at capacity during the afternoon peak hour only. This location would be the primary access point for the planned U.S. DOT Headquarters and Southeast Federal Center developments. Geometric and signalization improvements are therefore planned for that intersection, and the study has shown that these would adequately satisfy the City's roadway adequacy requirements.

e) The proposed development would provide a total of 2,480± off- and on-street parking spaces. This supply would significantly exceed the number of spaces required by the City's municipal regulations; and would be distributed to adequately serve the projected demands for the various land uses proposed.

f) The Applicant proposes a Transportation Management Plan for implementation at the proposed development. This would be geared toward maximizing the use of transit and other alternative modes by the prospective users, to reduce the potential site vehicular trip generation and related impacts.

7.2 Conclusion

Based on the foregoing data, discussions and analysis, this study has determined that the Arthur Capper/Carrollsburg Planned Unit Development can be accommodated without any appreciable adverse traffic impacts on the local area. The study area roadway network currently operates within the City's acceptable planning standards, during the morning and afternoon peak hours; and would continue to do so upon build-out of the proposed development, with the geometric and signalization improvements to be provided at the M Street/New Jersey Avenue intersection, as part of the planned U.S. DOT Headquarters development. The proposal would therefore satisfy the City's requirements for adequate

public facilities, and would not be "objectionable" either from the perspective of potential traffic and parking impacts, or the health, safety and general welfare of the adjacent communities. In addition, the development would include implementation of a Transportation Management Plan as well as the provision of internal "traffic calming" improvements. These would reduce the projected trip generation impacts of the proposed development as well as other planned developments, and would also enhance vehicular and pedestrian access, circulation and safety within the area.

<<<<<<< >>>>>>>

APPENDIX

A

CORRESPONDENCE WITH DDOT POLICY AND PLANNING ADMINISTRATION STAFF

O. R. GEORGE & ASSOCIATES, INC.

Traffic Engineers – Transportation Planners

10210 Greenbelt Road, Suite 310 • Lanham MD 20706
Tel: (301) 794-7700 • Fax: (301) 794-4400
E-mail: orgassoc@aol.com

January 15, 2003

Mr. Abdoulaye Bah, Sr. Transportation Engineer
Transportation Policy and Planning Administration
District of Columbia Department of Transportation
2000 14th Street, N.W., 7th Floor
Washington D.C. 20009

Re: Capper/Carrollsburg Dwellings Planned Unit Development Application

Dear Mr. Bah:

Further to our recent telephone conversation, we hereby confirm that we have been retained by the Applicant, MID-CITY URBAN, LLC, to prepare a traffic impact study in support of the referenced application. The purpose of this letter is to confirm the project background discussed, and the study parameters agreed upon.

As background, please note that the subject application is for the redevelopment of an improved residential area bounded generally by New Jersey Avenue and 2nd Street (to the west), Virginia Avenue (to the north), 7th Street (to the east) and M Street (to the south), within the Southeast area of Washington, D.C. The proposed development site is situated immediately east of the Navy Yard Metrorail Station. The subject property is zoned Residential (R-5-B) and Commercial (C-3-C). The Applicant's plans call for the rezoning of the site under the R-5-B, C-3-C and Commercial Residential (C-R) Districts. The Applicant proposes to redevelop the site with a mixed-use community, comprising 1,645 dwelling units, 740,000 SF general office, and 20,000 – 40,000 SF retail space. It is projected that a significant number of the prospective residential trips would be via transit, utilizing the adjacent Metrorail Station and the Metrobus routes along M Street and Virginia Avenue. It is also projected that a significant number of trips attracted to the proposed commercial uses will originate from within the proposed development.

Based on the above considerations, we propose to focus our study on the roadway network defined by the following thirteen (13) intersections:

1) New Jersey Ave. @ I St., S.E.
2) New Jersey Ave. @ K St., S.E.
3) New Jersey Ave. @ M St., S.E.
4) Third St. @ M St., S.E.
5) Fourth St. @ M St., S.E.
6) Fifth St. @ M St., S.E
7) Seventh St. @ M St., S.E.
8) Eighth St. @ M St., S.E.
9) Virginia Ave. @ 8th St., S.E.
10) Virginia Ave. @ 7th St., S.E.
11) Virginia Ave. @ 5th St./6th St., S.E.
12) Virginia Ave. @ 4th St., S.E.
13) Virginia Ave. @ 3rd St., S.E.

Consideration of traffic growth trends and background developments will be used in projecting future traffic conditions, in accordance with your Department's usual requirements.

Please let me know if you have any comments in response to the above, or information that could be useful to our study. Thanks for your usual cooperation and assistance in this matter.

Sincerely,
O. R. GEORGE & ASSOCIATES, INC.

C. Elias

Cullen E. Elias
Vice President

CEE/hw

Cc: Harry D. Sewell, Mid-City Urban LLC
Whayne S. Quinn, Holland & Knight, LLP

APPENDIX

B

TRAFFIC TURNING MOVEMENT COUNT SUMMARIES
EXISTING TRAFFIC SITUATION

O.R. George & Associates, Inc.
10210 Greenbelt Road, Suite 310
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Tel: (301) 794-7700 Fax: (301) 794-4400

Counted by:ORGA-OS
Board :D4-2238
City/County:Washington DC
Weather :Cold/Clear/Dry

File Name : M@NJ
Site Code : 28062238
Start Date : 12/18/2002
Page No : 1

Groups Printed- Passenger Vehicles - Trucks - Buses

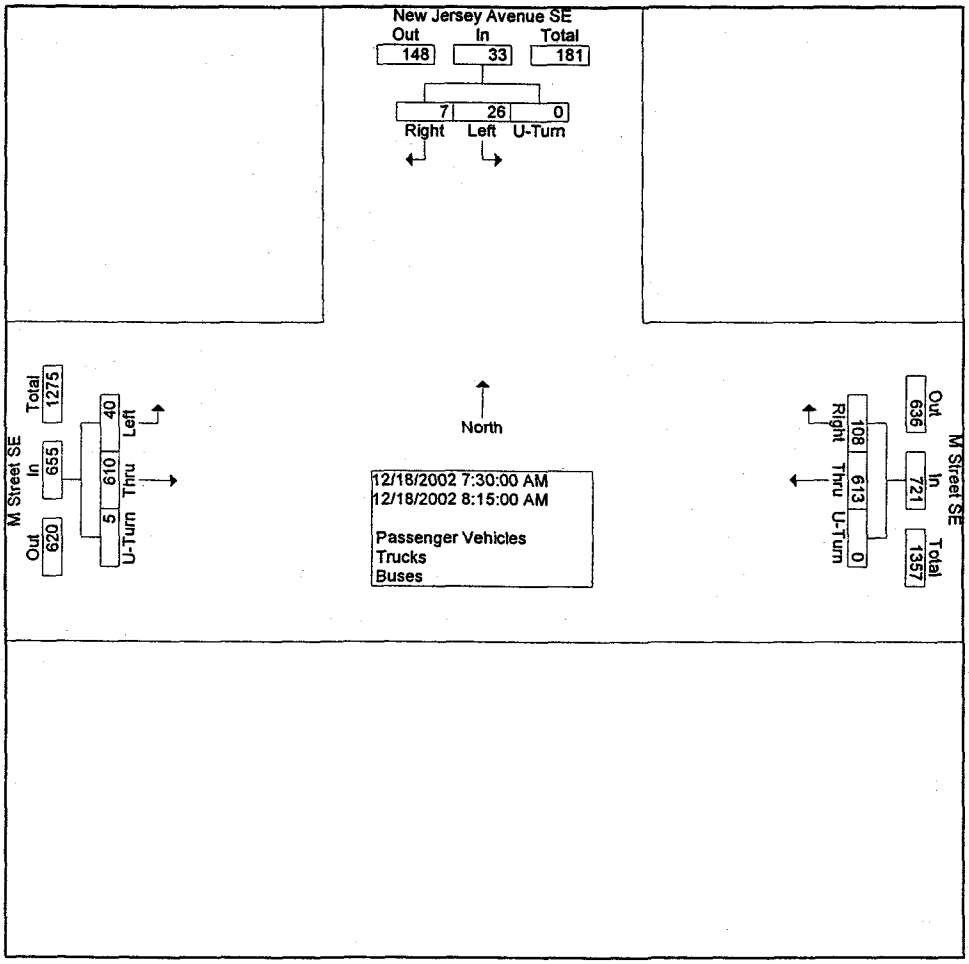
	New Jersey Avenue SE From North				M Street SE From East				M Street SE From West				
End Time	Left	Right	U-Turn	App. Total	Thru	Right	U-Turn	App. Total	Left	Thru	U-Turn	App. Total	Int. Total
07:15 AM	4	8	0	12	123	14	2	139	11	157	1	169	320
07:30 AM	5	4	0	9	148	33	0	181	7	175	1	183	373
07:45 AM	6	2	0	8	160	22	0	182	6	137	1	144	334
08:00 AM	7	1	0	8	146	25	0	171	12	144	1	157	336
Total	22	15	0	37	577	94	2	673	36	613	4	653	1363
08:15 AM	8	0	0	8	159	28	0	187	15	154	2	171	366
08:30 AM	6	1	0	7	165	21	0	186	11	125	0	136	329
08:45 AM	4	9	0	13	156	15	1	172	8	100	0	108	293
09:00 AM	5	8	0	13	132	30	0	162	13	103	0	116	291
Total	23	18	0	41	612	94	1	707	47	482	2	531	1279
04:15 PM	9	7	0	16	197	16	0	213	6	223	0	229	458
04:30 PM	12	11	1	24	144	7	0	151	3	254	1	258	433
04:45 PM	10	6	0	16	164	12	0	176	10	272	1	283	475
05:00 PM	9	14	0	23	147	17	0	164	16	287	1	304	491
Total	40	38	1	79	652	52	0	704	35	1036	3	1074	1857
05:15 PM	3	5	0	8	129	15	0	144	11	290	0	301	453
05:30 PM	13	9	0	22	118	13	0	131	12	282	0	294	447
05:45 PM	10	8	0	18	122	5	0	127	4	248	0	252	397
06:00 PM	6	14	1	21	112	5	0	117	6	233	0	239	377
Total	32	36	1	69	481	38	0	519	33	1053	0	1086	1674
Grand Total	117	107	2	226	2322	278	3	2603	151	3184	9	3344	6173
Apprch %	51.8	47.3	0.9		89.2	10.7	0.1		4.5	95.2	0.3		
Total %	1.9	1.7	0.0	3.7	37.6	4.5	0.0	42.2	2.4	51.6	0.1	54.2	

O.R. George & Associates, Inc.
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Counted by:ORGA-OS
Board :D4-2238
City/County:Washington DC
Weather :Cold/Clear/Dry

File Name : M@NJ
Site Code : 28062238
Start Date : 12/18/2002

	New Jersey Avenue SE From North				M Street SE From East				M Street SE From West				
End Time	Left	Right	U-Turn	App. Total	Thru	Right	U-Turn	App. Total	Left	Thru	U-Turn	App. Total	Int. Total
Peak Hour From 07:15 AM to 12:45 PM - Peak 1 of 1													
Intersection	07:30 AM												
Volume	26	7	0	33	613	108	0	721	40	610	5	655	1409
Percent	78.8	21.2	0.0		85.0	15.0	0.0		6.1	93.1	0.8		
07:30 Volume	5	4	0	9	148	33	0	181	7	175	1	183	373
Peak Factor													0.944
High Int.	07:30 AM				08:15 AM				07:30 AM				
Volume	5	4	0	9	159	28	0	187	7	175	1	183	
Peak Factor				0.917				0.964				0.895	



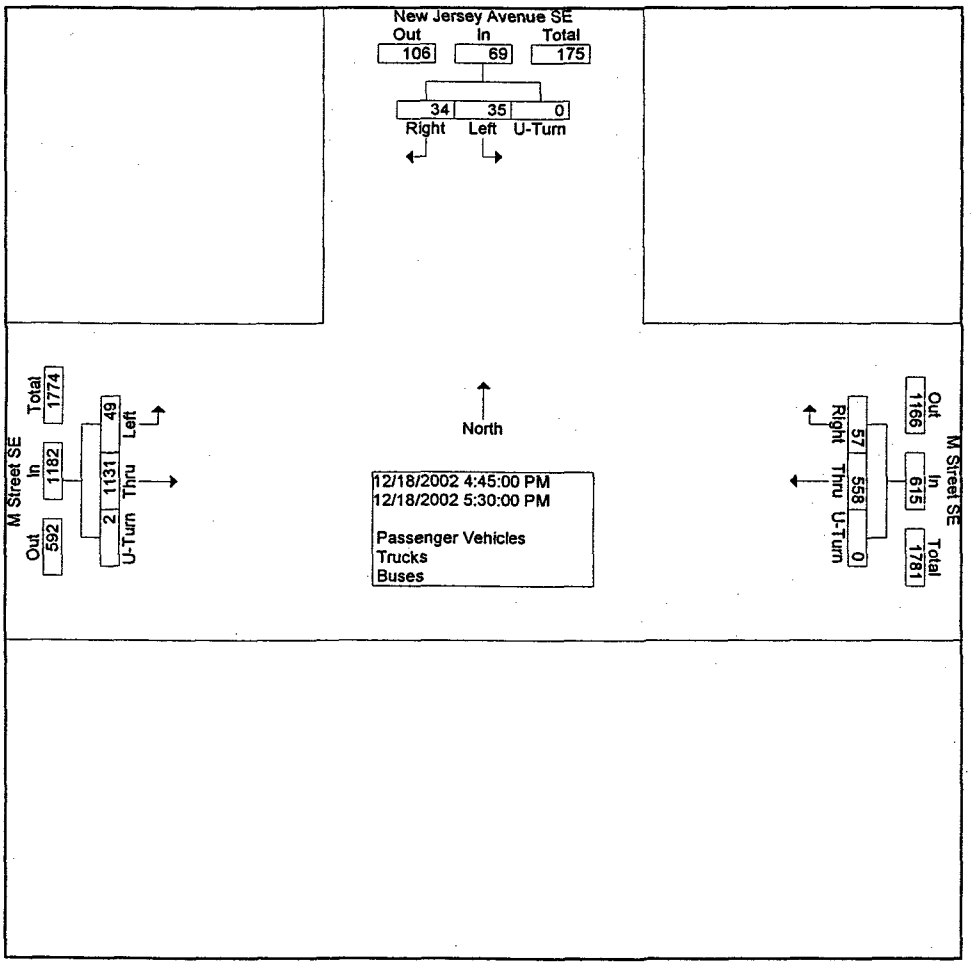
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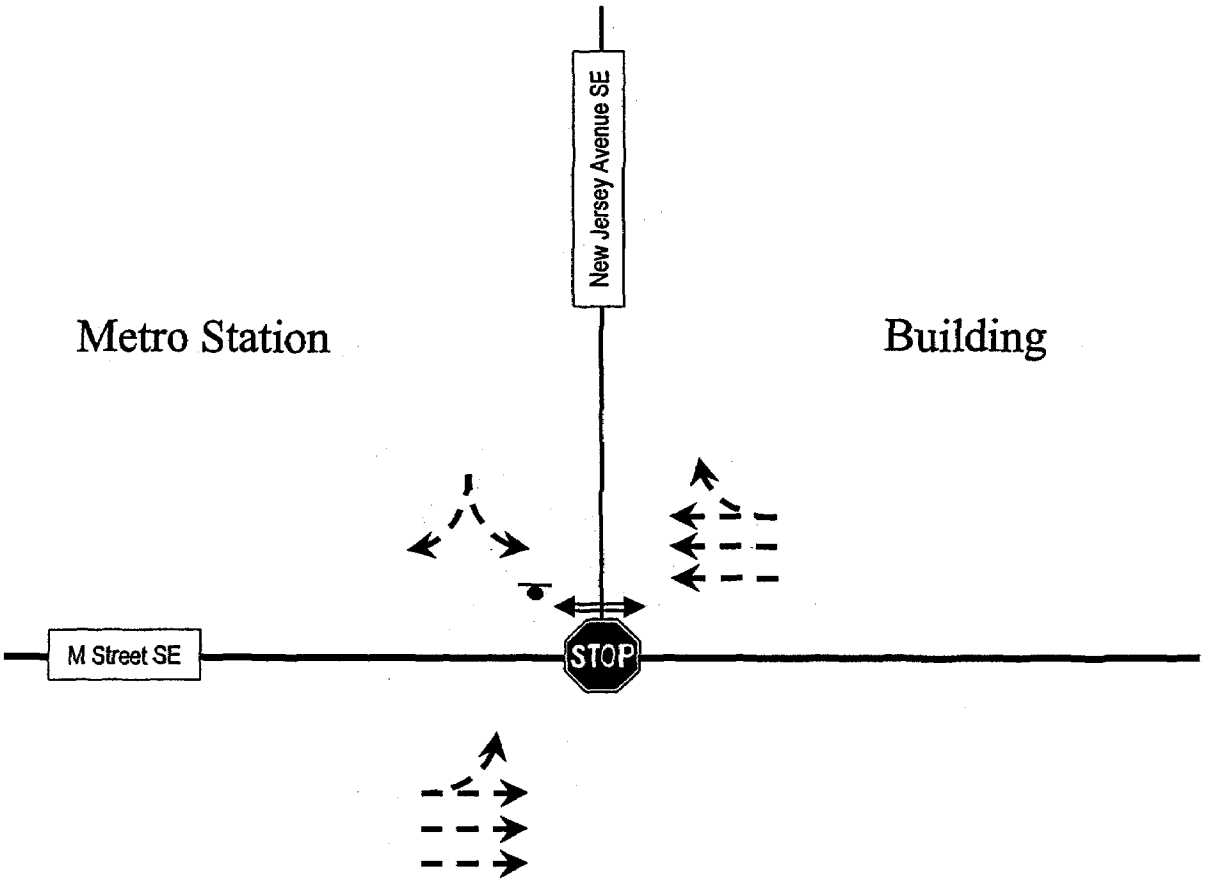
Counted by:ORGA-OS
Board :D4-2238
City/County:Washington DC
Weather :Cold/Clear/Dry

File Name : M@NJ
Site Code : 28062238
Start Date : 12/18/2002

	New Jersey Avenue SE From North				M Street SE From East				M Street SE From West				
End Time	Left	Right	U-Turn	App. Total	Thru	Right	U-Turn	App. Total	Left	Thru	U-Turn	App. Total	Int. Total
Peak Hour From 01:00 PM to 06:00 PM - Peak 1 of 1													
Intersection 04:45 PM													
Volume	35	34	0	69	558	57	0	615	49	1131	2	1182	1866
Percent	50.7	49.3	0.0		90.7	9.3	0.0		4.1	95.7	0.2		
05:00 Volume	9	14	0	23	147	17	0	164	16	287	1	304	491
Peak Factor													0.950
High Int.	05:00 PM				04:45 PM				05:00 PM				
Volume	9	14	0	23	164	12	0	176	16	287	1	304	
Peak Factor				0.750				0.874				0.972	



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LEGEND

- ACTUAL ROADWAY MARKING/LANE DELINEATION
- OBSERVED ROADWAY LANE USAGE
- STOP SIGN LOCATION
- PEDESTRIAN CROSSWALK

N

SCHEMATIC NOT TO SCALE

O. R. GEORGE & ASSOCIATES, INC. Transportation Engineers & Traffic Planners	Contract No.: Arthur Capper Project LANE CONFIGURATION New Jersey Avenue SE @ M Street SE WASHINGTON DC

O.R. George & Associates, Inc.
10210 Greenbelt Road, Suite 310
Lanham, MD 20706
Tel: (301) 794-7700 Fax: (301) 794-4400

Counted by:ORGA-AA
Board :D4-1909
City/County:Washington DC
Weather :Cold/Clear/Dry

File Name : 5th@M
Site Code : 30181909
Start Date : 12/19/2002
Page No : 1

Groups Printed- Passenger Vehicles - Trucks - Buses

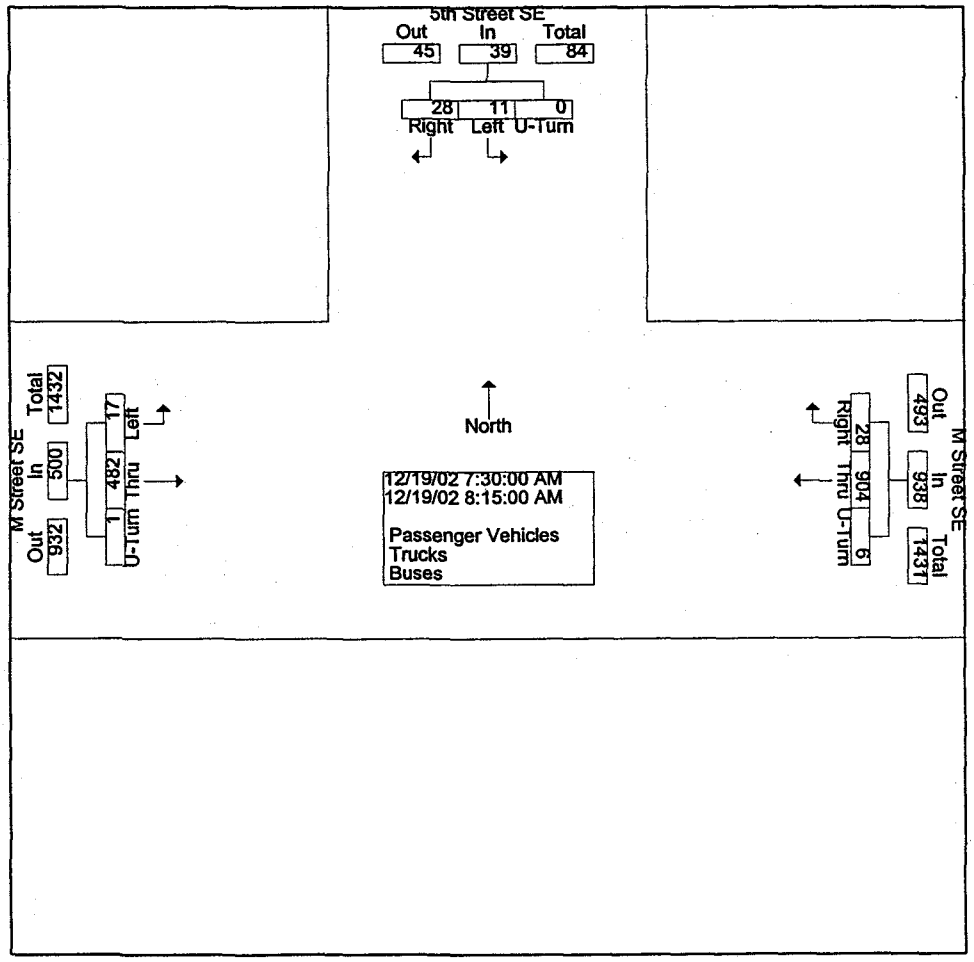
	5th Street SE From North				M Street SE From East				M Street SE From West				
End Time	Left	Right	U-Turn	App. Total	Thru	Right	U-Turn	App. Total	Left	Thru	U-Turn	App. Total	Int. Total
07:15 AM	5	12	0	17	165	3	1	169	4	151	0	155	341
07:30 AM	1	8	0	9	223	6	2	231	5	118	1	124	364
07:45 AM	3	8	0	11	252	6	2	260	1	118	0	119	390
08:00 AM	3	7	0	10	230	6	2	238	2	120	0	122	370
Total	12	35	0	47	870	21	7	898	12	507	1	520	1465
08:15 AM	4	5	0	9	199	10	0	209	9	126	0	135	353
08:30 AM	4	4	0	8	188	9	0	197	6	130	0	136	341
08:45 AM	3	9	0	12	216	12	3	231	6	124	0	130	373
09:00 AM	1	2	0	3	196	9	1	206	4	118	4	126	335
Total	12	20	0	32	799	40	4	843	25	498	4	527	1402
04:15 PM	2	2	0	4	191	15	5	211	11	278	1	290	505
04:30 PM	7	2	0	9	139	14	1	154	16	251	1	268	431
04:45 PM	2	5	0	7	102	11	1	114	4	243	0	247	368
05:00 PM	2	4	0	6	141	13	0	154	10	270	0	280	440
Total	13	13	0	26	573	53	7	633	41	1042	2	1085	1744
05:15 PM	3	4	0	7	133	16	0	149	11	247	0	258	414
05:30 PM	0	0	0	0	132	9	0	141	9	239	1	249	390
05:45 PM	0	3	0	3	97	7	0	104	5	237	0	242	349
06:00 PM	3	1	0	4	101	2	1	104	10	236	0	246	354
Total	6	8	0	14	463	34	1	498	35	959	1	995	1507
Grand Total	43	76	0	119	2705	148	19	2872	113	3006	8	3127	6118
Apprch %	36.1	63.9	0.0		94.2	5.2	0.7		3.6	96.1	0.3		
Total %	0.7	1.2	0.0	1.9	44.2	2.4	0.3	46.9	1.8	49.1	0.1	51.1	

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Board :D4-1909
City/County:Washington DC
Weather :Cold/Clear/Dry

File Name : 5th@M
Site Code : 30181909
Start Date : 12/19/2002

	5th Street SE From North				M Street SE From East				M Street SE From West				
End Time	Left	Right	U-Turn	App. Total	Thru	Right	U-Turn	App. Total	Left	Thru	U-Turn	App. Total	Int. Total
Peak Hour From 07:15 AM to 09:00 AM - Peak 1 of 1													
Intersection	07:30 AM												
Volume	11	28	0	39	904	28	6	938	17	482	1	500	1477
Percent	28.2	71.8	0.0		96.4	3.0	0.6		3.4	96.4	0.2		
07:45 Volume	3	8	0	11	252	6	2	260	1	118	0	119	390
Peak Factor													0.947
High Int.	07:45 AM				07:45 AM				08:15 AM				
Volume	3	8	0	11	252	6	2	260	9	126	0	135	
Peak Factor				0.886				0.902				0.926	



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Counted by:ORGA-OS
Board :D4-2238
City/County:Washington DC
Weather :Cold/Clear/Dry

File Name : 7th@M
Site Code : 31062238
Start Date : 12/19/2002
Page No : 1

Groups Printed- Passenger Vehicles - Trucks - Buses

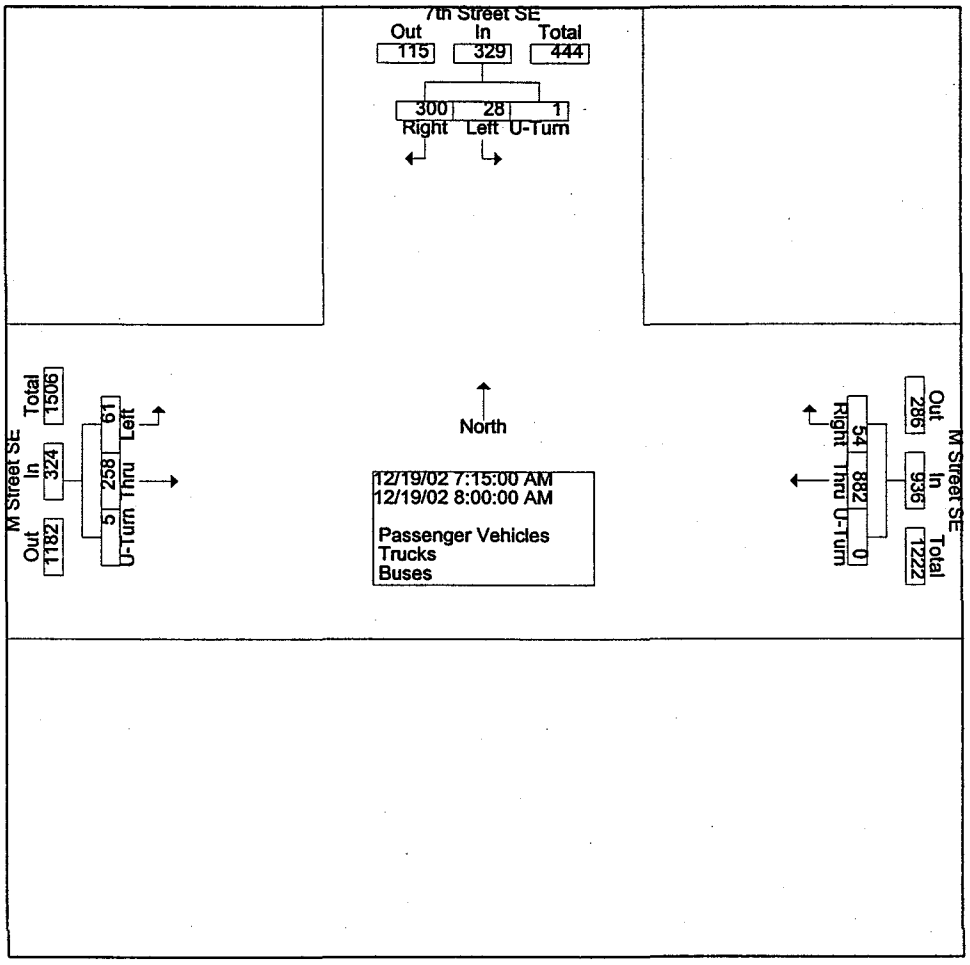
	7th Street SE From North				M Street SE From East				M Street SE From West				
End Time	Left	Right	U-Turn	App. Total	Thru	Right	U-Turn	App. Total	Left	Thru	U-Turn	App. Total	Int. Total
07:15 AM	4	76	0	80	194	12	0	206	15	72	0	87	373
07:30 AM	7	76	0	83	227	12	0	239	11	55	2	68	390
07:45 AM	11	74	0	85	257	12	0	269	11	67	1	79	433
08:00 AM	6	74	1	81	204	18	0	222	24	64	2	90	393
Total	28	300	1	329	882	54	0	936	61	258	5	324	1589
08:15 AM	12	47	0	59	180	21	0	201	17	74	4	95	355
08:30 AM	2	35	0	37	178	22	0	200	27	75	6	108	345
08:45 AM	6	43	0	49	213	14	1	228	21	78	8	107	384
09:00 AM	5	27	0	32	173	24	0	197	26	73	4	103	332
Total	25	152	0	177	744	81	1	826	91	300	22	413	1416
04:15 PM	1	14	0	15	141	31	0	172	63	287	3	353	540
04:30 PM	6	9	0	15	97	31	0	128	55	251	2	308	451
04:45 PM	5	20	0	25	86	24	1	111	54	219	3	276	412
05:00 PM	2	9	0	11	81	35	0	116	61	286	3	350	477
Total	14	52	0	66	405	121	1	527	233	1043	11	1287	1880
05:15 PM	3	14	0	17	97	16	0	113	71	261	2	334	464
05:30 PM	2	11	0	13	90	16	0	106	55	227	1	283	402
05:45 PM	1	7	0	8	74	15	0	89	64	231	0	295	392
06:00 PM	3	10	0	13	72	5	0	77	58	220	0	278	368
Total	9	42	0	51	333	52	0	385	248	939	3	1190	1626
Grand Total	76	546	1	623	2364	308	2	2674	633	2540	41	3214	6511
Apprch %	12.2	87.6	0.2		88.4	11.5	0.1		19.7	79.0	1.3		
Total %	1.2	8.4	0.0	9.6	36.3	4.7	0.0	41.1	9.7	39.0	0.6	49.4	

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Counted by:ORGA-OS
Board :D4-2238
City/County:Washington DC
Weather :Cold/Clear/Dry

File Name : 7th@M
Site Code : 31062238
Start Date : 12/19/2002

	7th Street SE From North				M Street SE From East				M Street SE From West				
End Time	Left	Right	U-Turn	App. Total	Thru	Right	U-Turn	App. Total	Left	Thru	U-Turn	App. Total	Int. Total
Peak Hour From 07:15 AM to 09:00 AM - Peak 1 of 1													
Intersection	07:15 AM												
Volume	28	300	1	329	882	54	0	936	61	258	5	324	1589
Percent	8.5	91.2	0.3		94.2	5.8	0.0		18.8	79.6	1.5		
07:45 Volume	11	74	0	85	257	12	0	269	11	67	1	79	433
Peak Factor													0.917
High Int.	07:45 AM				07:45 AM				08:00 AM				
Volume	11	74	0	85	257	12	0	269	24	64	2	90	
Peak Factor				0.968				0.870				0.900	



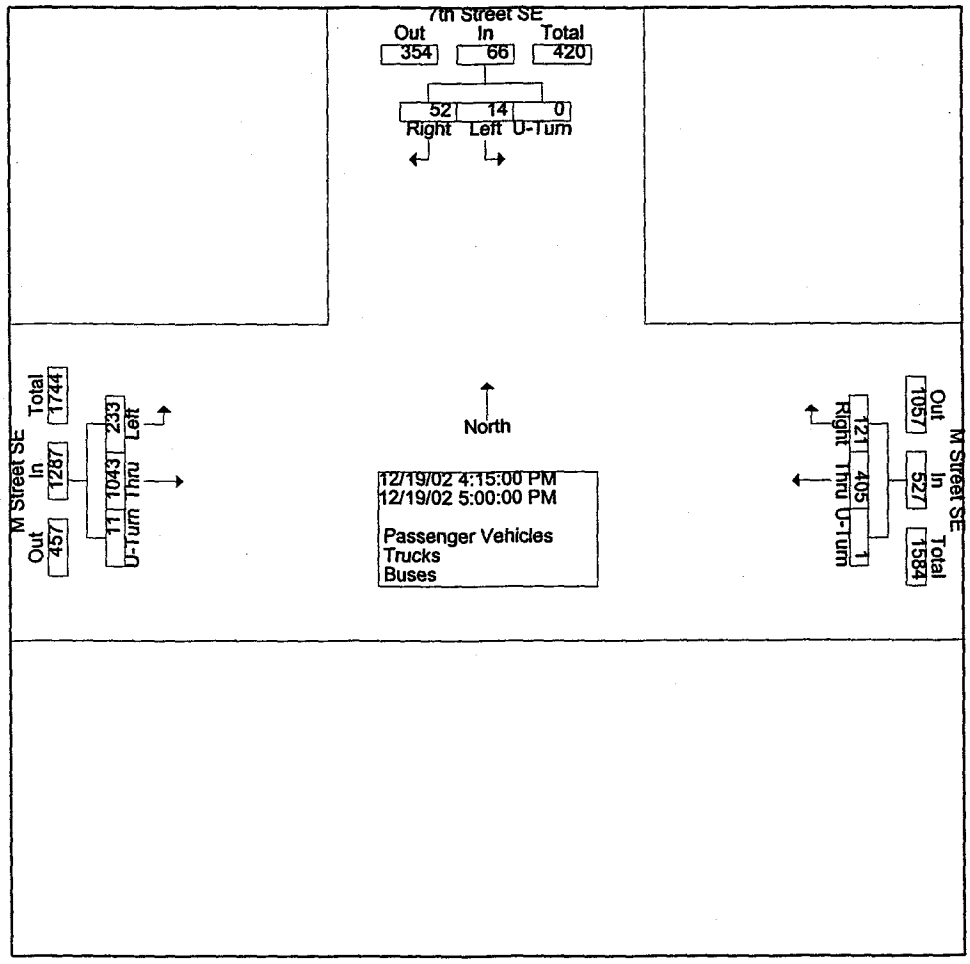
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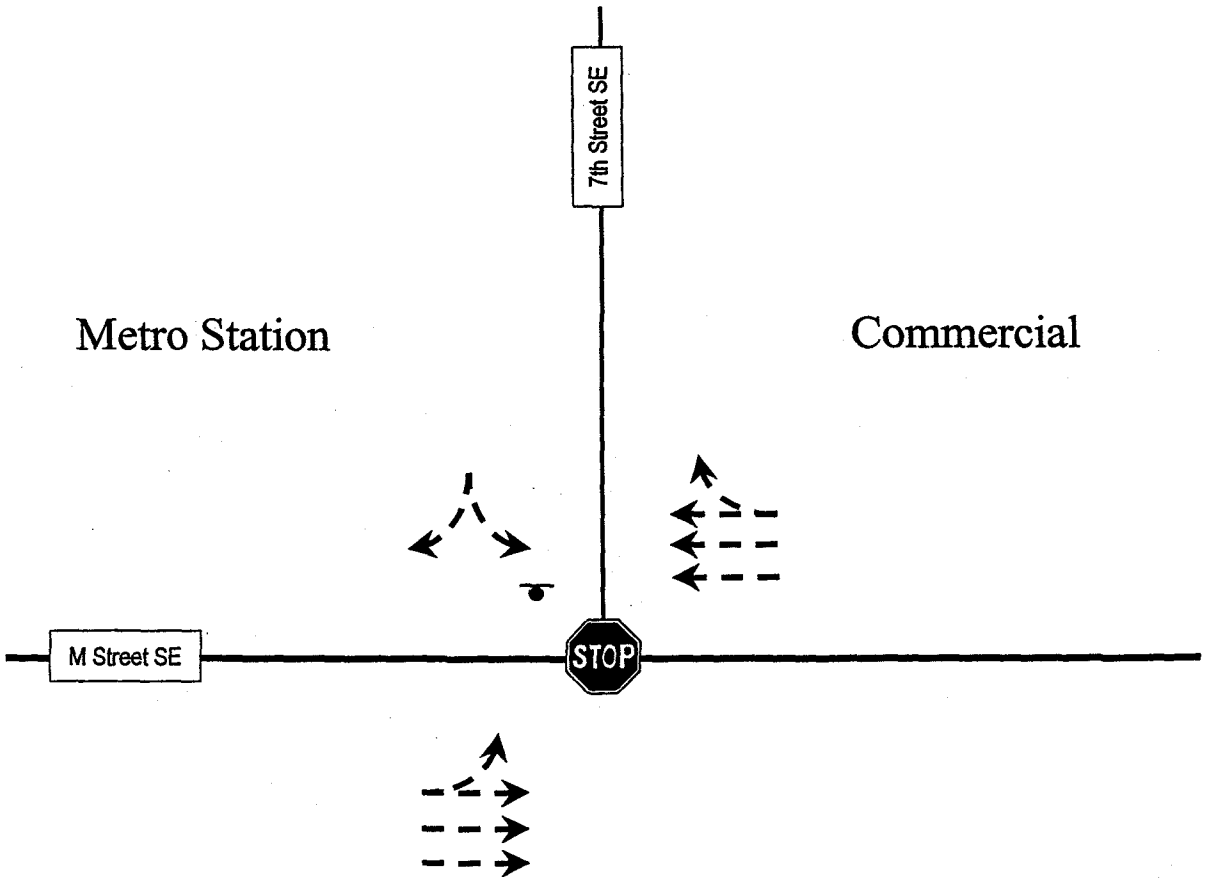
Counted by:ORGA-OS
Board :D4-2238
City/County:Washington DC
Weather :Cold/Clear/Dry

File Name : 7th@M
Site Code : 31062238
Start Date : 12/19/2002

	7th Street SE From North				M Street SE From East				M Street SE From West				
End Time	Left	Right	U-Turn	App. Total	Thru	Right	U-Turn	App. Total	Left	Thru	U-Turn	App. Total	Int. Total
Peak Hour From 04:15 PM to 06:00 PM - Peak 1 of 1													
Intersection 04:15 PM													
Volume	14	52	0	66	405	121	1	527	233	1043	11	1287	1880
Percent	21.2	78.8	0.0		76.9	23.0	0.2		18.1	81.0	0.9		
04:15 Volume	1	14	0	15	141	31	0	172	63	287	3	353	540
Peak Factor													0.870
High Int.	04:45 PM				04:15 PM				04:15 PM				
Volume	5	20	0	25	141	31	0	172	63	287	3	353	
Peak Factor				0.660				0.766				0.911	



B-11



LEGEND

- ACTUAL ROADWAY MARKING/LANE DELINEATION
- OBSERVED ROADWAY LANE USAGE
- STOP SIGN LOCATION

N

SCHEMATIC
NOT TO SCALE

O. R. GEORGE & ASSOCIATES, INC. Transportation Engineers & Traffic Planners	Contract No.: Arthur Capper Project LANE CONFIGURATION 7th Street SE @ M Street SE WASHINGTON DC

O.R. George & Associates, Inc.
10210 Greenbelt Road, Suite 310
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Counted by:ORGA-AA
Board :D4-2240
City/County:Washington DC
Weather :Cold/Clear/Dry

File Name : 8th@M
Site Code : 29242240
Start Date : 12/18/2002
Page No : 1

Groups Printed- Passenger Vehicles - Trucks - Buses

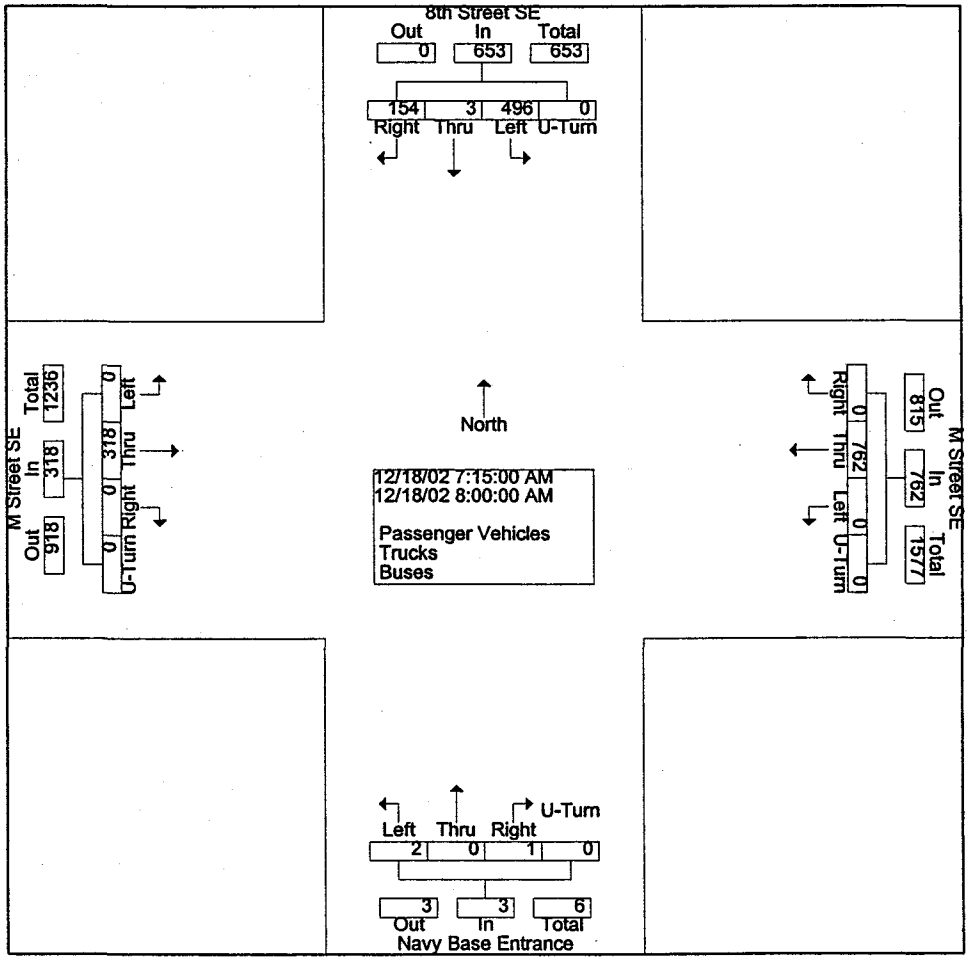
	8th Street SE From North					Navy Base Entrance From South					M Street SE From East					M Street SE From West					
End Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
07:15 AM	135	1	40	0	176	0	0	0	0	0	0	164	0	0	164	0	73	0	0	73	413
07:30 AM	128	2	36	0	166	0	0	1	0	1	0	185	0	0	185	0	73	0	0	73	425
07:45 AM	110	0	46	0	156	1	0	0	0	1	0	217	0	0	217	0	81	0	0	81	455
08:00 AM	123	0	32	0	155	1	0	0	0	1	0	196	0	0	196	0	91	0	0	91	443
Total	496	3	154	0	653	2	0	1	0	3	0	762	0	0	762	0	318	0	0	318	1736
08:15 AM	93	0	52	0	145	0	0	1	0	1	0	177	0	0	177	0	87	0	0	87	410
08:30 AM	67	0	37	0	104	1	0	0	0	1	0	182	0	0	182	0	79	0	0	79	366
08:45 AM	64	1	48	0	113	0	0	0	0	0	0	192	0	0	192	0	112	0	0	112	417
09:00 AM	75	0	46	0	121	0	0	0	0	0	0	134	0	0	134	0	68	0	0	68	323
Total	299	1	183	0	483	1	0	1	0	2	0	685	0	0	685	0	346	0	0	346	1516
04:15 PM	57	1	28	0	86	1	0	1	0	2	0	136	0	0	136	0	253	0	0	253	477
04:30 PM	52	0	21	0	73	0	0	0	0	0	0	87	0	0	87	0	269	0	1	270	430
04:45 PM	72	0	31	0	103	0	0	1	0	1	0	76	0	0	76	0	258	0	1	259	439
05:00 PM	61	1	20	0	82	1	0	1	0	2	0	87	0	0	87	0	266	0	0	266	437
Total	242	2	100	0	344	2	0	3	0	5	0	386	0	0	386	0	1046	0	2	1048	1783
05:15 PM	79	0	16	0	95	0	0	0	0	0	0	79	0	0	79	0	317	0	0	317	491
05:30 PM	66	0	17	0	83	0	0	0	0	0	0	64	0	0	64	0	269	0	0	269	416
05:45 PM	55	0	17	0	72	2	0	0	0	2	0	80	0	1	81	0	250	0	1	251	406
06:00 PM	64	0	14	0	78	0	0	0	0	0	0	67	0	1	68	0	216	0	0	216	362
Total	264	0	64	0	328	2	0	0	0	2	0	290	0	2	292	0	1052	0	1	1053	1675
Grand Total	1301	6	501	0	1808	7	0	5	0	12	0	2123	0	2	2125	0	2762	0	3	2765	6710
Apprch %	72.0	0.3	27.7	0.0		58.3	0.0	41.7	0.0		0.0	99.9	0.0	0.1		0.0	99.9	0.0	0.1		
Total %	19.4	0.1	7.5	0.0	26.9	0.1	0.0	0.1	0.0	0.2	0.0	31.6	0.0	0.0	31.7	0.0	41.2	0.0	0.0	41.2	

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Counted by:ORGA-AA
Board :D4-2240
City/County:Washington DC
Weather :Cold/Clear/Dry

File Name : 8th@M
Site Code : 29242240
Start Date : 12/18/2002
Page No : 2

	8th Street SE From North					Navy Base Entrance From South					M Street SE From East					M Street SE From West					
End Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
Peak Hour From 07:15 AM to 09:00 AM - Peak 1 of 1																					
Intersection 07:15 AM																					
Volume	496	3	154	0	653	2	0	1	0	3	0	762	0	0	762	0	318	0	0	318	1736
Percent	76.0	0.5	23.6	0.0		66.7	0.0	33.3	0.0		0.0	100.0	0.0	0.0		0.0	100.0	0.0	0.0		
07:45 Volume	110	0	46	0	156	1	0	0	0	1	0	217	0	0	217	0	81	0	0	81	455
Peak Factor																					0.954
High Int.	07:15 AM					07:30 AM					07:45 AM					08:00 AM					
Volume	135	1	40	0	176	0	0	1	0	1	0	217	0	0	217	0	91	0	0	91	
Peak Factor					0.928					0.750					0.878					0.874	

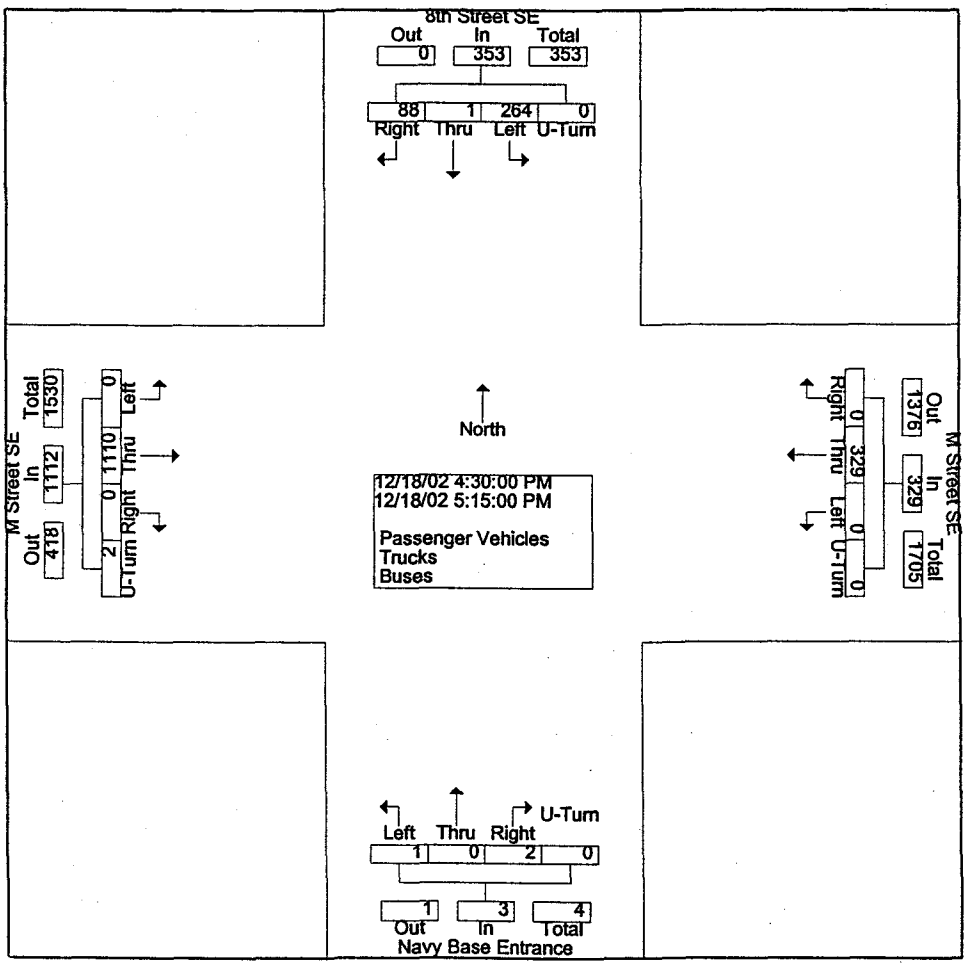


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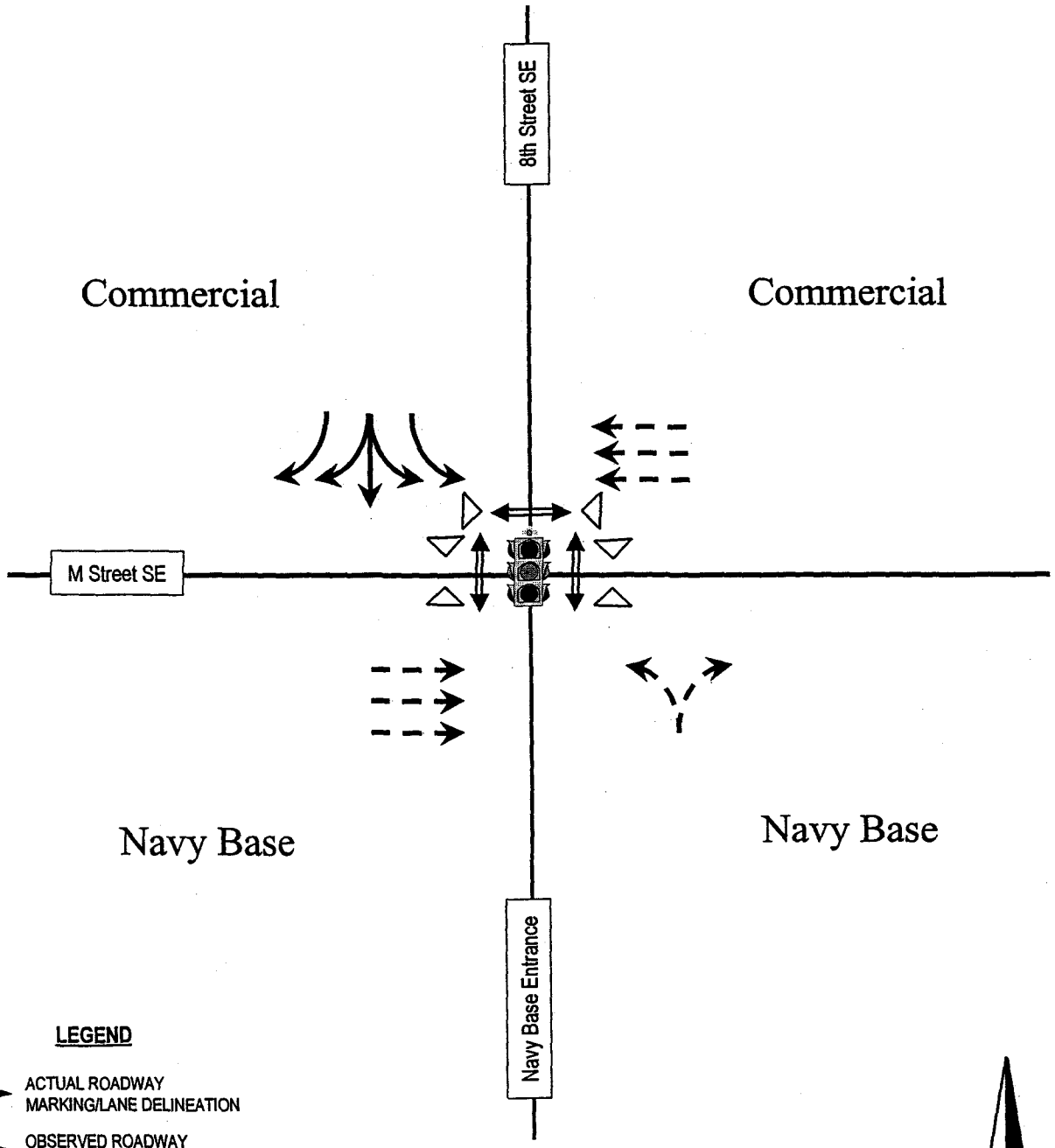
Counted by:ORGA-AA
Board :D4-2240
City/County:Washington DC
Weather :Cold/Clear/Dry

File Name : 8th@M
Site Code : 29242240
Start Date : 12/18/2002

	8th Street SE From North					Navy Base Entrance From South					M Street SE From East					M Street SE From West					
End Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
Peak Hour From 04:15 PM to 06:00 PM - Peak 1 of 1																					
Intersection 04:30 PM																					
Volume	264	1	88	0	353	1	0	2	0	3	0	329	0	0	329	0	1110	0	2	1112	1797
Percent	74.8	0.3	24.9	0.0		33.3	0.0	66.7	0.0		0.0	100.0	0.0	0.0		0.0	99.8	0.0	0.2		
05:15 Volume	79	0	16	0	95	0	0	0	0	0	0	79	0	0	79	0	317	0	0	317	491
Peak Factor																					0.915
High Int. 04:45 PM						05:00 PM					04:30 PM					05:15 PM					
Volume	72	0	31	0	103	1	0	1	0	2	0	87	0	0	87	0	317	0	0	317	
Peak Factor					0.857					0.375					0.945					0.877	



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O. R. GEORGE & ASSOCIATES, INC. Transportation Engineers & Traffic Planners	Contract No.: Arthur Capper Project LANE CONFIGURATION 8th Street SE @ M Street SE WASHINGTON DC

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Counted by:ORGA-AL
Board :D4-1910
City/County:Washington DC
Weather :Cold/Clear/Dry

File Name : NJ@IST
Site Code : 26231910
Start Date : 12/18/2002
Page No : 1

Groups Printed- Passenger Vehicles - Trucks - Buses

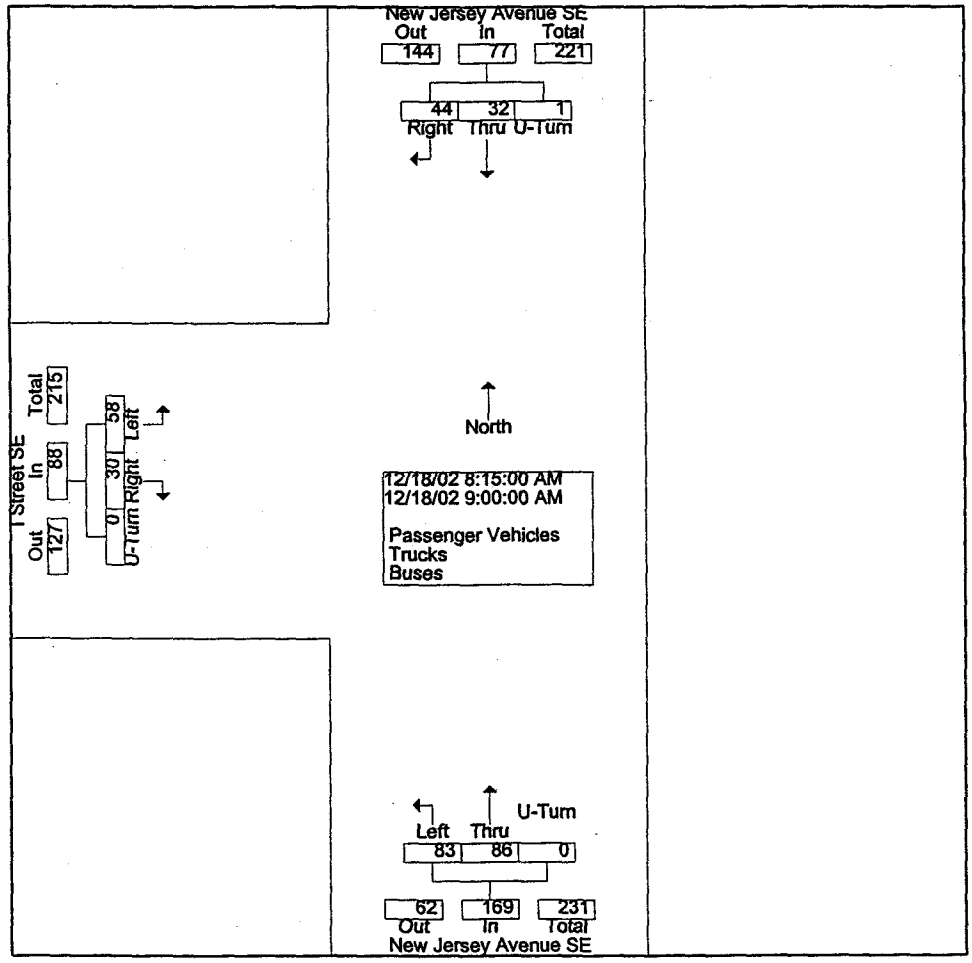
	New Jersey Avenue SE From North				New Jersey Avenue SE From South				I Street SE From West				
End Time	Thru	Right	U-Turn	App. Total	Left	Thru	U-Turn	App. Total	Left	Right	U-Turn	App. Total	Int. Total
07:15 AM	11	5	0	16	15	14	0	29	3	5	0	8	53
07:30 AM	7	7	0	14	30	18	0	48	9	3	0	12	74
07:45 AM	8	5	0	13	20	18	0	38	8	7	0	15	66
08:00 AM	4	10	0	14	26	18	0	44	4	11	0	15	73
Total	30	27	0	57	91	68	0	159	24	26	0	50	266
08:15 AM	15	15	0	30	19	23	0	42	13	9	0	22	94
08:30 AM	4	9	1	14	25	27	0	52	21	7	0	28	94
08:45 AM	7	8	0	15	21	12	0	33	15	7	0	22	70
09:00 AM	6	12	0	18	18	24	0	42	9	7	0	16	76
Total	32	44	1	77	83	86	0	169	58	30	0	88	334
04:15 PM	13	21	0	34	17	19	0	36	17	17	0	34	104
04:30 PM	13	13	0	26	13	9	0	22	11	13	0	24	72
04:45 PM	16	12	0	28	14	19	0	33	13	14	0	27	88
05:00 PM	18	10	0	28	13	14	0	27	18	19	0	37	92
Total	60	56	0	116	57	61	0	118	59	63	0	122	356
05:15 PM	20	17	0	37	13	15	0	28	16	12	0	28	93
05:30 PM	10	8	0	18	8	17	0	25	27	13	1	41	84
05:45 PM	15	18	0	33	8	9	0	17	18	12	0	30	80
06:00 PM	23	13	0	36	9	15	0	24	15	7	0	22	82
Total	68	56	0	124	38	56	0	94	76	44	1	121	339
Grand Total	190	183	1	374	269	271	0	540	217	163	1	381	1295
Apprch %	50.8	48.9	0.3		49.8	50.2	0.0		57.0	42.8	0.3		
Total %	14.7	14.1	0.1	28.9	20.8	20.9	0.0	41.7	16.8	12.6	0.1	29.4	

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Board :D4-1910
City/County:Washington DC
Weather :Cold/Clear/Dry

File Name : NJ@IST
Site Code : 26231910
Start Date : 12/18/2002

	New Jersey Avenue SE From North				New Jersey Avenue SE From South				I Street SE From West				
End Time	Thru	Right	U-Turn	App. Total	Left	Thru	U-Turn	App. Total	Left	Right	U-Turn	App. Total	Int. Total
Peak Hour From 07:15 AM to 09:00 AM - Peak 1 of 1													
Intersection 08:15 AM													
Volume	32	44	1	77	83	86	0	169	58	30	0	88	334
Percent	41.6	57.1	1.3		49.1	50.9	0.0		65.9	34.1	0.0		
08:30 Volume	4	9	1	14	25	27	0	52	21	7	0	28	94
Peak Factor													0.888
High Int.	08:15 AM				08:30 AM				08:30 AM				
Volume	15	15	0	30	25	27	0	52	21	7	0	28	
Peak Factor				0.642				0.813				0.786	



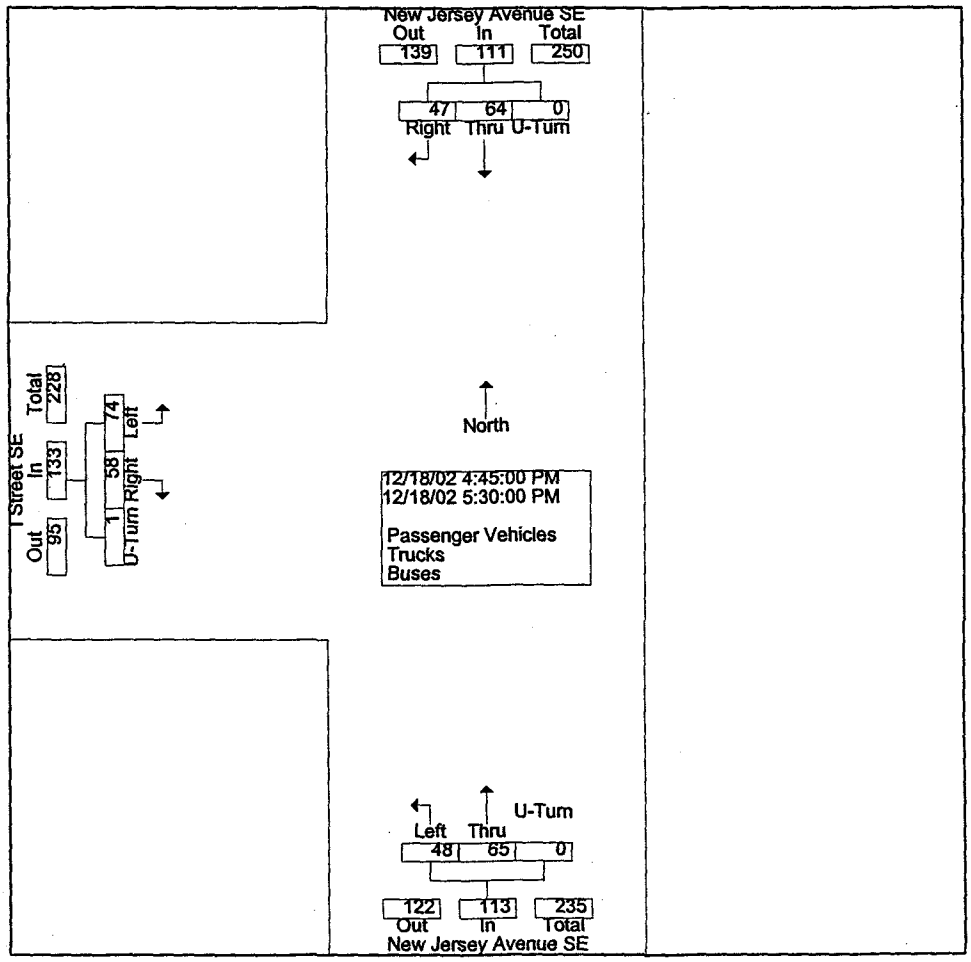
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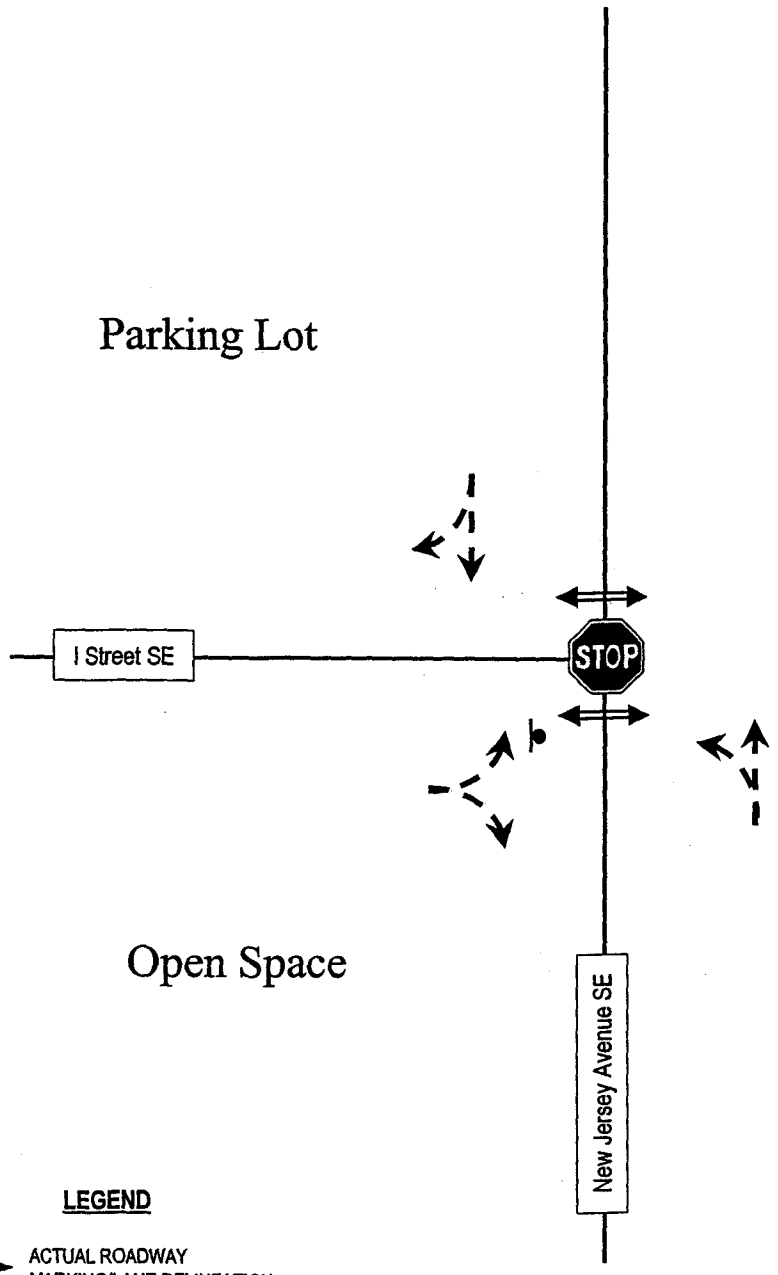
Counted by:ORGA-AL
Board :D4-1910
City/County:Washington DC
Weather :Cold/Clear/Dry

File Name : NJ@IST
Site Code : 26231910
Start Date : 12/18/2002

	New Jersey Avenue SE From North				New Jersey Avenue SE From South				I Street SE From West				
End Time	Thru	Right	U-Turn	App. Total	Left	Thru	U-Turn	App. Total	Left	Right	U-Turn	App. Total	Int. Total
Peak Hour From 04:15 PM to 06:00 PM - Peak 1 of 1													
Intersection 04:45 PM													
Volume	64	47	0	111	48	65	0	113	74	58	1	133	357
Percent	57.7	42.3	0.0		42.5	57.5	0.0		55.6	43.6	0.8		
05:15 Volume	20	17	0	37	13	15	0	28	16	12	0	28	93
Peak Factor													0.960
High Int.	05:15 PM				04:45 PM				05:30 PM				
Volume	20	17	0	37	14	19	0	33	27	13	1	41	
Peak Factor				0.750				0.856				0.811	



B-19



LEGEND

- ACTUAL ROADWAY MARKING/LANE DELINEATION
- OBSERVED ROADWAY LANE USAGE
- STOP SIGN LOCATION
- PEDESTRIAN CROSSWALK

N

SCHEMATIC NOT TO SCALE

O. R. GEORGE & ASSOCIATES, INC. Transportation Engineers & Traffic Planners	Contract No.: Arthur Capper Project LANE CONFIGURATION New Jersey Avenue SE @ I Street SE WASHINGTON DC

O.R. George & Associates, Inc.
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Counted by:ORGA-GC
Board :D4-2237
City/County:Washington DC
Weather :Cold/Clear/Dry

File Name : K@NJ
Site Code : 27222237
Start Date : 12/18/2002
Page No : 1

Groups Printed- Passenger Vehicles - Trucks - Buses

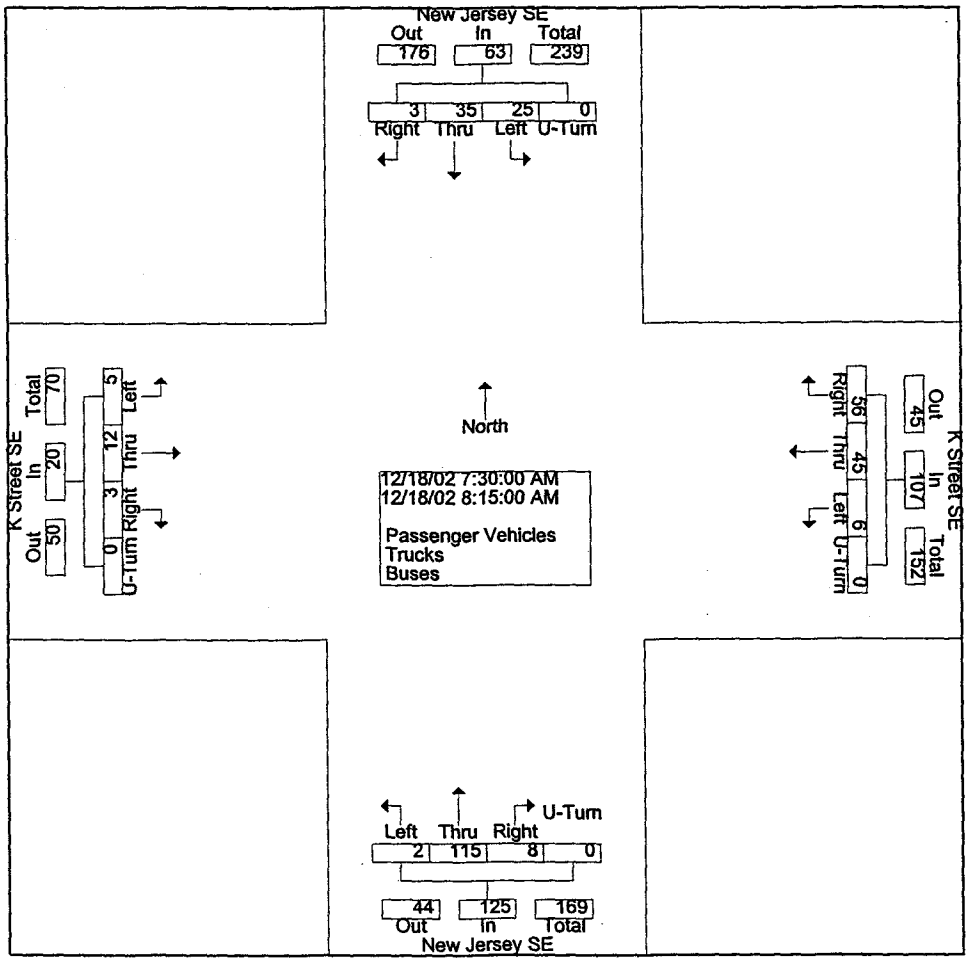
	New Jersey SE From North					New Jersey SE From South					K Street SE From East					K Street SE From West					
End Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
07:15 AM	2	10	1	0	13	2	20	4	0	26	0	8	7	0	15	2	6	1	0	9	63
07:30 AM	5	4	0	0	9	1	30	6	0	37	1	5	18	0	24	1	3	0	0	4	74
07:45 AM	5	8	1	0	14	0	27	1	0	28	2	16	8	0	26	3	6	2	0	11	79
08:00 AM	6	10	0	0	16	0	27	0	0	27	2	12	15	0	29	1	2	0	0	3	75
Total	18	32	2	0	52	3	104	11	0	118	5	41	48	0	94	7	17	3	0	27	291
08:15 AM	9	13	2	0	24	1	31	1	0	33	1	12	15	0	28	0	1	1	0	2	87
08:30 AM	4	4	1	0	9	1	36	1	0	38	0	5	8	0	13	3	1	4	0	8	68
08:45 AM	5	7	1	0	13	2	19	1	0	22	2	5	9	0	16	4	7	2	0	13	64
09:00 AM	7	7	0	0	14	3	32	3	0	38	1	5	8	0	14	2	5	2	0	9	75
Total	25	31	4	0	60	7	118	6	0	131	4	27	40	0	71	9	14	9	0	32	294
04:15 PM	7	18	2	0	27	1	25	1	0	27	1	8	8	0	17	3	7	1	0	11	82
04:30 PM	10	12	4	0	26	3	13	3	0	19	3	8	7	0	18	2	7	2	0	11	74
04:45 PM	5	25	3	0	33	1	21	1	0	23	0	4	8	0	12	5	3	1	0	9	77
05:00 PM	10	20	3	0	33	1	17	2	0	20	2	12	9	0	23	1	4	0	0	5	81
Total	32	75	12	0	119	6	76	7	0	89	6	32	32	0	70	11	21	4	0	36	314
05:15 PM	12	17	4	0	33	1	20	3	0	24	1	6	8	0	15	5	4	0	0	9	81
05:30 PM	5	19	1	0	25	0	23	1	0	24	1	9	7	0	17	2	6	3	0	11	77
05:45 PM	15	12	0	0	27	0	10	1	0	11	0	8	3	0	11	2	12	4	0	18	67
06:00 PM	8	21	1	0	30	1	15	1	0	17	2	7	7	0	16	4	5	2	0	11	74
Total	40	69	6	0	115	2	68	6	0	76	4	30	25	0	59	13	27	9	0	49	299
Grand Total	115	207	24	0	346	18	366	30	0	414	19	130	145	0	294	40	79	25	0	144	1198
Apprch %	33.2	59.8	6.9	0.0		4.3	88.4	7.2	0.0		6.5	44.2	49.3	0.0		27.8	54.9	17.4	0.0		
Total %	9.6	17.3	2.0	0.0	28.9	1.5	30.6	2.5	0.0	34.6	1.6	10.9	12.1	0.0	24.5	3.3	6.6	2.1	0.0	12.0	

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Counted by:ORGA-GC
Board :D4-2237
City/County:Washington DC
Weather :Cold/Clear/Dry

File Name : K@NJ
Site Code : 27222237
Start Date : 12/18/2002

	New Jersey SE From North					New Jersey SE From South					K Street SE From East					K Street SE From West					
End Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
Peak Hour From 07:15 AM to 09:00 AM - Peak 1 of 1																					
Intersection 07:30 AM																					
Volume	25	35	3	0	63	2	115	8	0	125	6	45	56	0	107	5	12	3	0	20	315
Percent	39.7	55.6	4.8	0.0		1.6	92.0	6.4	0.0		5.6	42.1	52.3	0.0		25.0	60.0	15.0	0.0		
08:15 Volume	9	13	2	0	24	1	31	1	0	33	1	12	15	0	28	0	1	1	0	2	87
Peak Factor																					0.905
High Int. 08:15 AM						07:30 AM					08:00 AM					07:45 AM					
Volume	9	13	2	0	24	1	30	6	0	37	2	12	15	0	29	3	6	2	0	11	
Peak Factor					0.656					0.845					0.922					0.455	



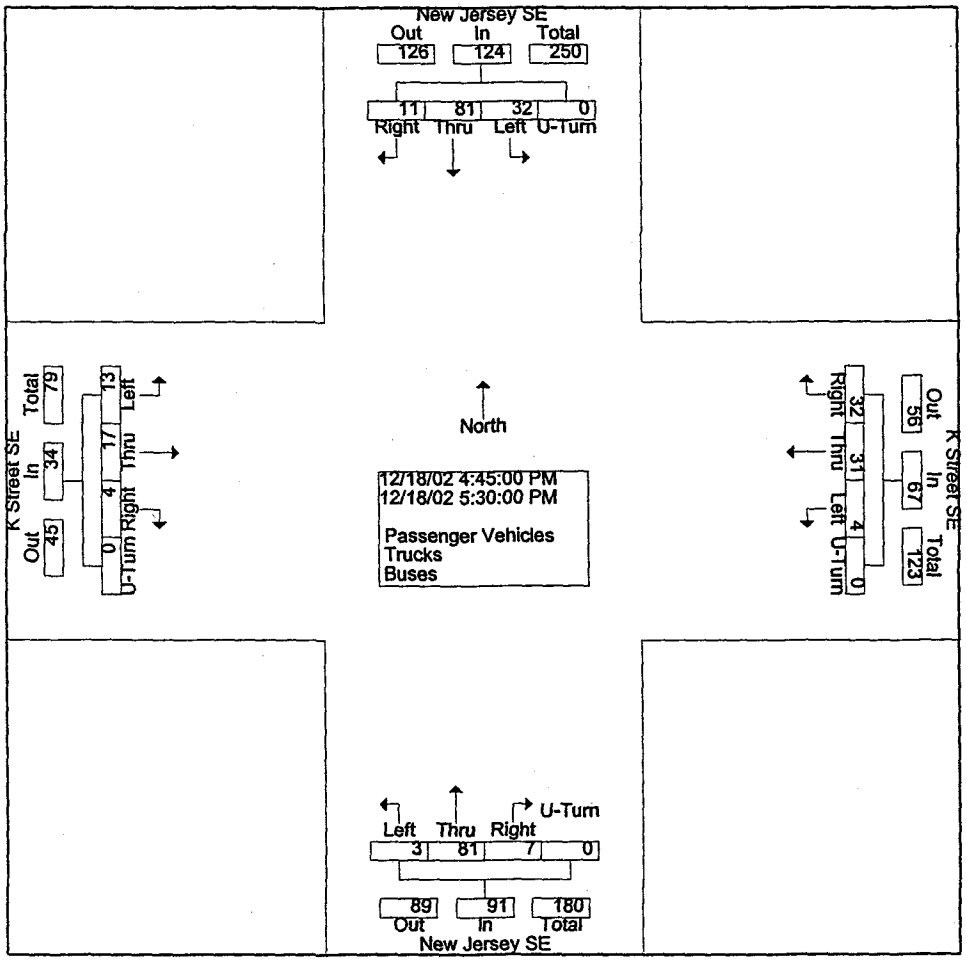
B-22

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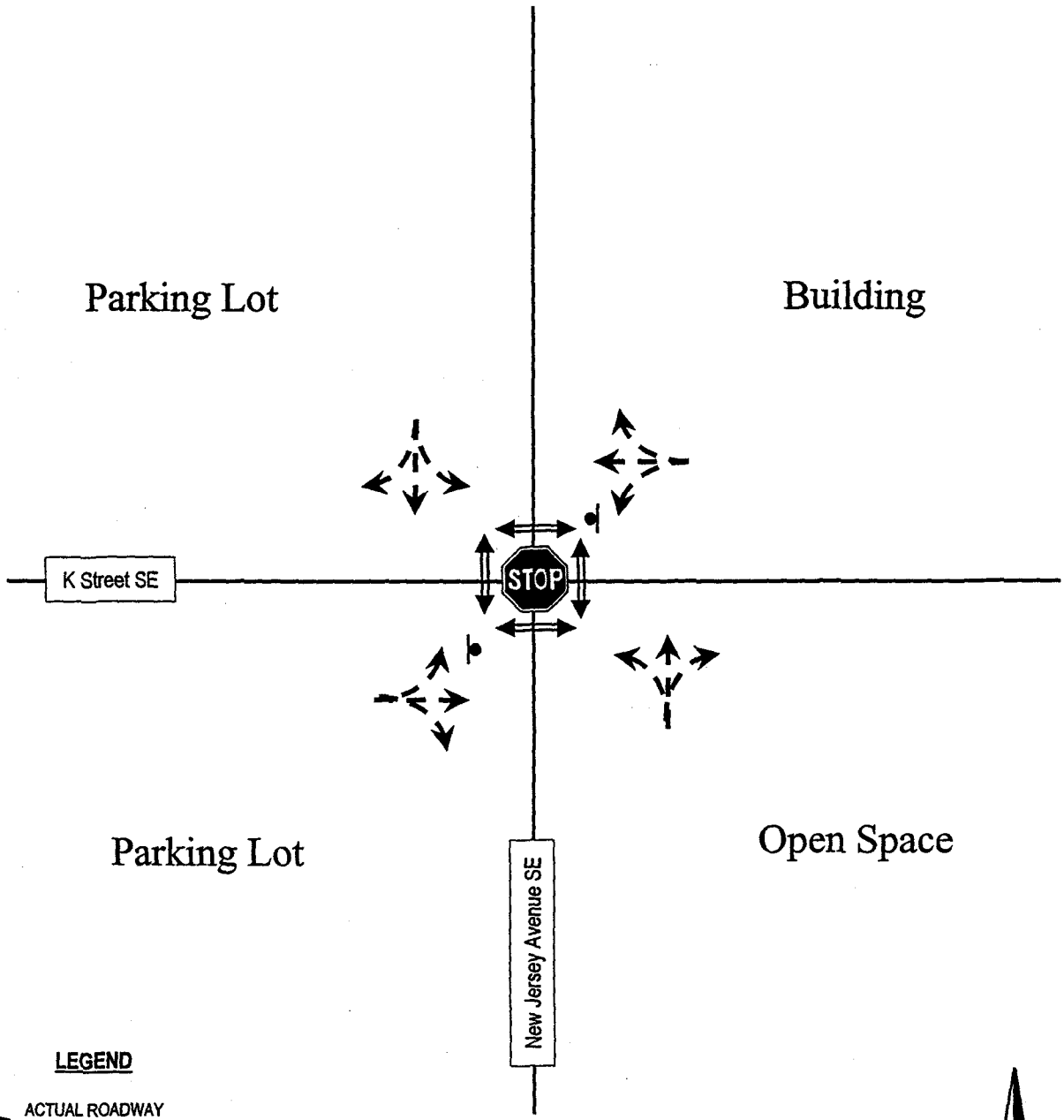
Counted by:ORGA-GC
Board :D4-2237
City/County:Washington DC
Weather :Cold/Clear/Dry

File Name : K@NJ
Site Code : 27222237
Start Date : 12/18/2002
Page No : 3

	New Jersey SE From North					New Jersey SE From South					K Street SE From East					K Street SE From West					
End Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
Peak Hour From 04:15 PM to 06:00 PM - Peak 1 of 1																					
Intersection 04:45 PM																					
Volume	32	81	11	0	124	3	81	7	0	91	4	31	32	0	67	13	17	4	0	34	316
Percent	25.8	65.3	8.9	0.0		3.3	89.0	7.7	0.0		6.0	46.3	47.8	0.0		38.2	50.0	11.8	0.0		
05:15 Volume	12	17	4	0	33	1	20	3	0	24	1	6	8	0	15	5	4	0	0	9	81
Peak Factor																					0.975
High Int. 04:45 PM						05:15 PM					05:00 PM					05:30 PM					
Volume	5	25	3	0	33	1	20	3	0	24	2	12	9	0	23	2	6	3	0	11	
Peak Factor					0.939					0.948					0.728					0.773	



B-23



O. R. GEORGE & ASSOCIATES, INC. Transportation Engineers & Traffic Planners	Contract No.: Arthur Capper Project LANE CONFIGURATION New Jersey Avenue SE @ K Street SE WASHINGTON DC

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Counted by:ORGA-MO
Board :D4-1907
City/County:Washington DC
Weather :Cold/Clear/Dry

File Name : 3RD@VIR
Site Code : 21241907
Start Date : 12/17/2002
Page No : 1

Groups Printed- Passenger Vehicles - Trucks - Buses

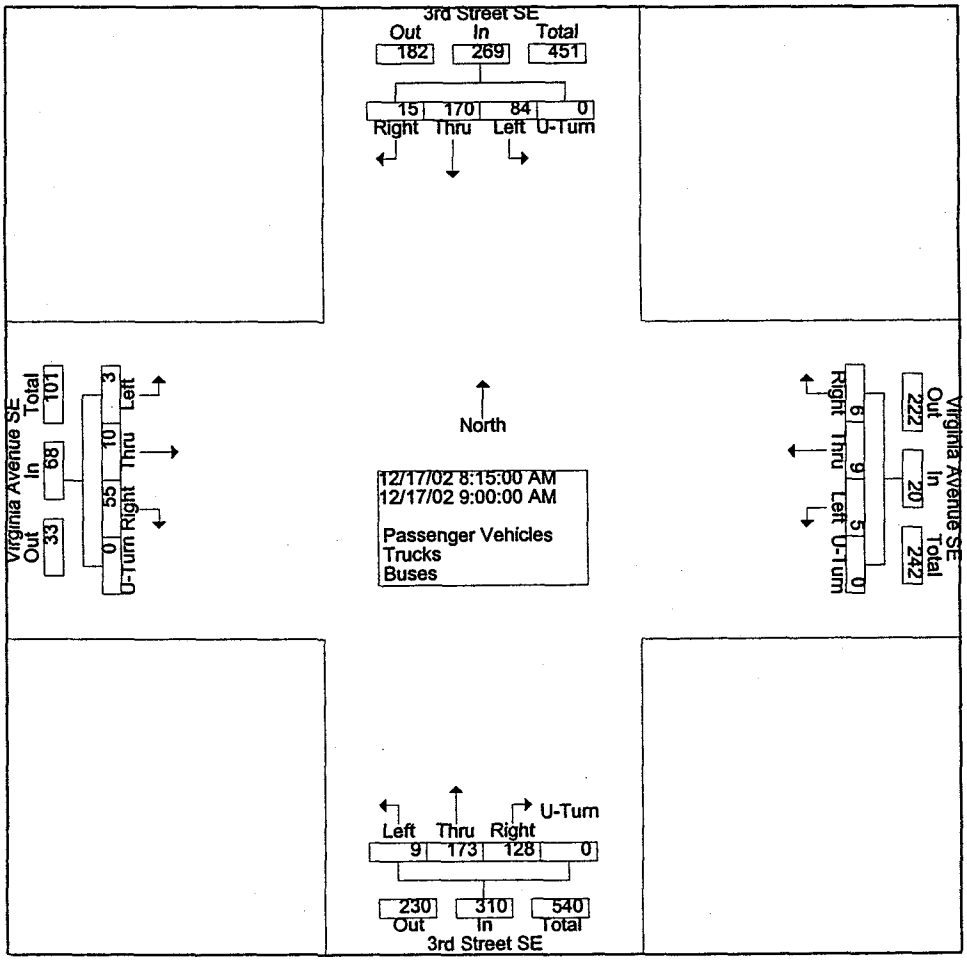
	3rd Street SE From North					3rd Street SE From South					Virginia Avenue SE From East					Virginia Avenue SE From West					
End Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
07:15 AM	9	28	4	0	41	4	36	16	0	56	1	1	1	0	3	1	3	11	0	15	115
07:30 AM	11	26	6	0	43	2	37	17	0	56	1	2	0	0	3	0	0	4	0	4	106
07:45 AM	9	22	7	0	38	2	53	30	0	85	0	2	2	0	4	0	0	11	0	11	138
08:00 AM	17	26	7	0	50	3	40	26	0	69	3	2	4	0	9	0	0	7	0	7	135
Total	46	102	24	0	172	11	166	89	0	266	5	7	7	0	19	1	3	33	0	37	494
08:15 AM	12	44	5	0	61	1	45	23	0	69	1	2	2	0	5	1	0	8	0	9	144
08:30 AM	24	32	4	0	60	2	56	37	0	95	1	1	1	0	3	0	4	11	0	15	173
08:45 AM	24	49	2	0	75	4	41	35	0	80	2	3	3	0	8	0	3	17	0	20	183
09:00 AM	24	45	4	0	73	2	31	33	0	66	1	3	0	0	4	2	3	19	0	24	167
Total	84	170	15	0	269	9	173	128	0	310	5	9	6	0	20	3	10	55	0	68	667
04:15 PM	11	13	3	0	27	0	56	1	0	57	1	2	3	0	6	14	4	0	0	18	108
04:30 PM	8	2	1	0	11	0	54	2	0	56	0	0	6	0	6	6	8	1	0	15	88
04:45 PM	11	11	1	0	23	0	53	2	0	55	0	0	4	0	4	10	4	0	0	14	96
05:00 PM	10	8	0	0	18	1	45	1	0	47	3	1	3	0	7	3	2	0	0	5	77
Total	40	34	5	0	79	1	208	6	0	215	4	3	16	0	23	33	18	1	0	52	369
05:15 PM	22	11	1	0	34	1	47	2	0	50	0	1	0	0	1	12	2	0	0	14	99
05:30 PM	16	7	1	0	24	0	44	4	0	48	2	0	2	0	4	3	1	1	0	5	81
05:45 PM	22	5	0	0	27	0	22	0	0	22	3	1	3	0	7	2	2	3	0	7	63
06:00 PM	17	4	0	0	21	0	18	0	0	18	1	0	2	0	3	1	1	0	0	2	44
Total	77	27	2	0	106	1	131	6	0	138	6	2	7	0	15	18	6	4	0	28	287
Grand Total	247	333	46	0	626	22	678	229	0	929	20	21	36	0	77	55	37	93	0	185	1817
Apprch %	39.5	53.2	7.3	0.0		2.4	73.0	24.7	0.0		26.0	27.3	46.8	0.0		29.7	20.0	50.3	0.0		
Total %	13.6	18.3	2.5	0.0	34.5	1.2	37.3	12.6	0.0	51.1	1.1	1.2	2.0	0.0	4.2	3.0	2.0	5.1	0.0	10.2	

O.R. George & Associates, Inc.
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Counted by:ORGA-MO
Board :D4-1907
City/County:Washington DC
Weather :Cold/Clear/Dry

File Name : 3RD@VIR
Site Code : 21241907
Start Date : 12/17/2002
Page No : 2

	3rd Street SE From North					3rd Street SE From South					Virginia Avenue SE From East					Virginia Avenue SE From West					
End Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
Peak Hour From 07:15 AM to 09:00 AM - Peak 1 of 1																					
Intersection 08:15 AM																					
Volume	84	170	15	0	269	9	173	128	0	310	5	9	6	0	20	3	10	55	0	68	667
Percent	31.2	63.2	5.6	0.0		2.9	55.8	41.3	0.0		25.0	45.0	30.0	0.0		4.4	14.7	80.9	0.0		
08:45 Volume	24	49	2	0	75	4	41	35	0	80	2	3	3	0	8	0	3	17	0	20	183
Peak Factor																					0.911
High Int. 08:45 AM						08:30 AM					08:45 AM					09:00 AM					
Volume	24	49	2	0	75	2	56	37	0	95	2	3	3	0	8	2	3	19	0	24	
Peak Factor					0.897					0.816					0.625					0.708	



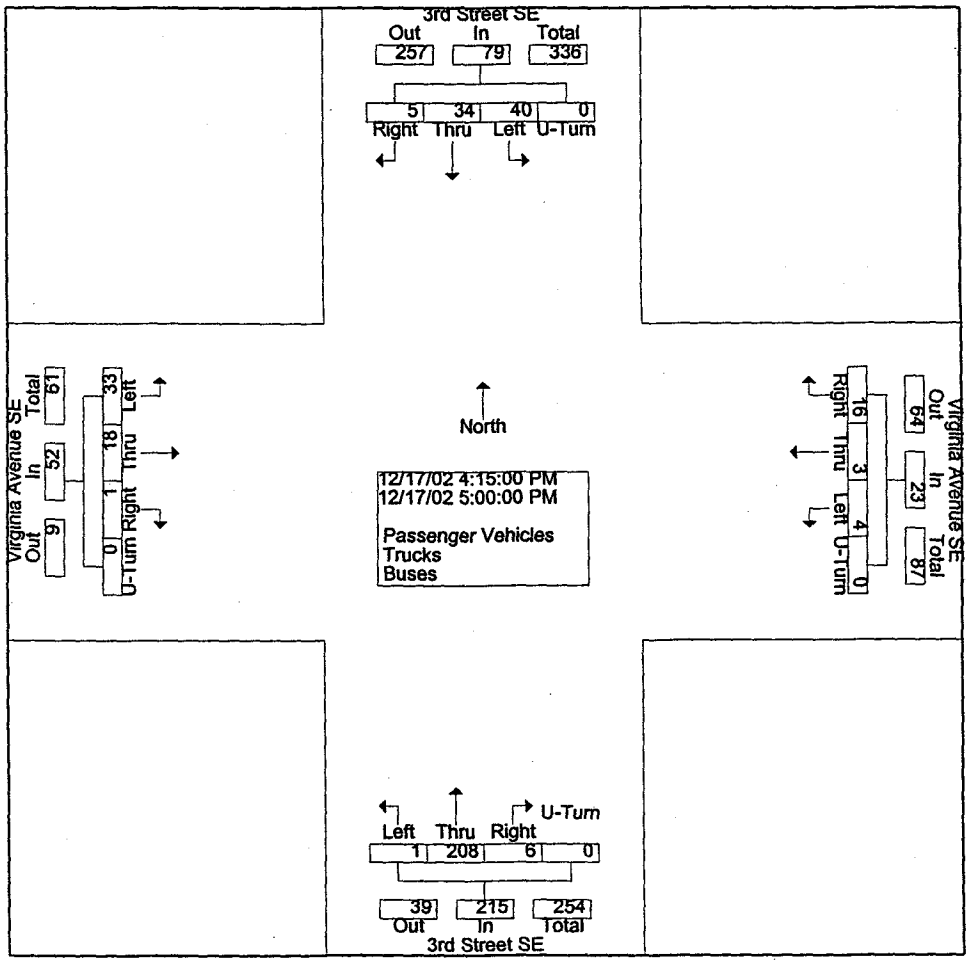
B-26

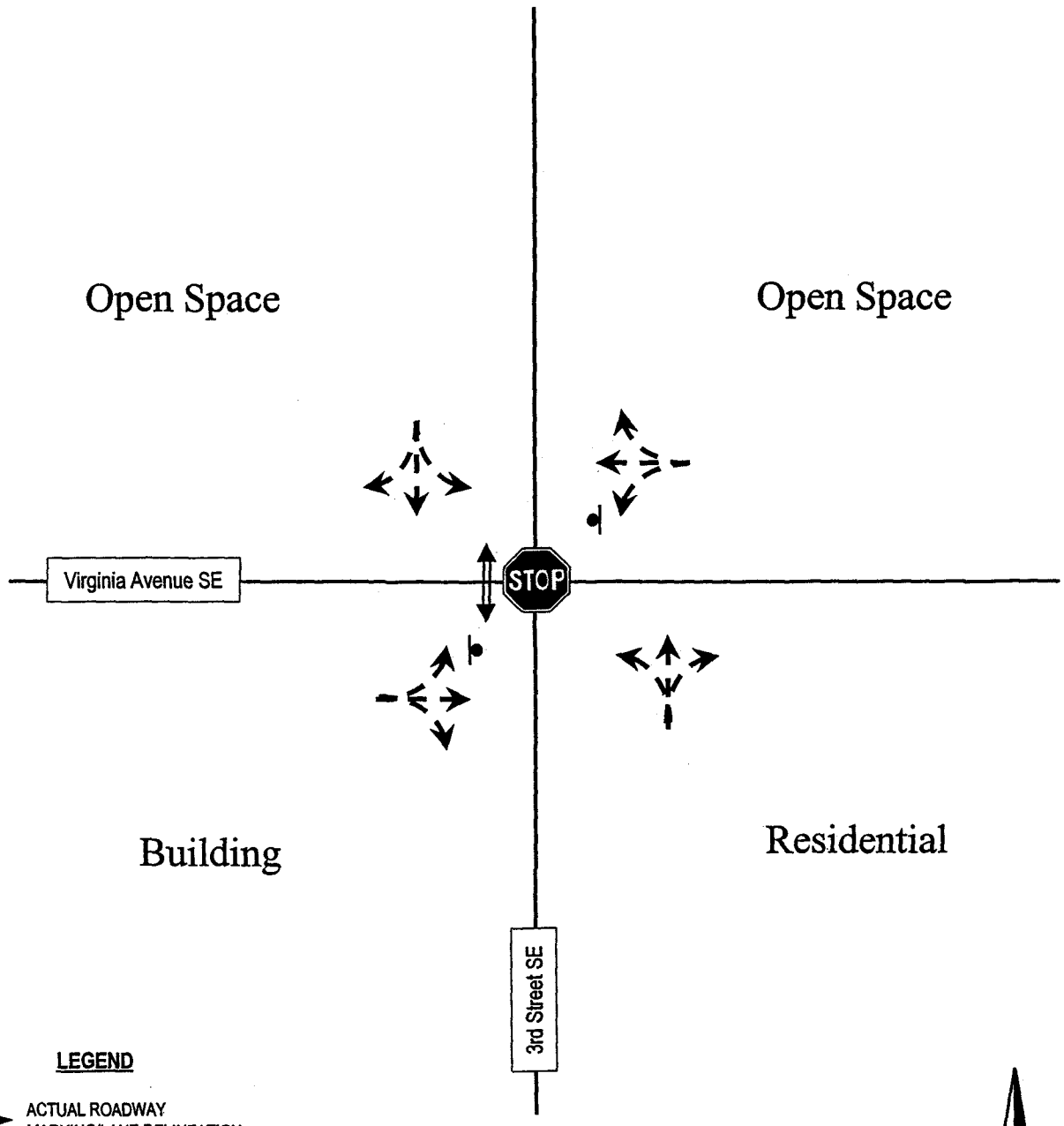
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Counted by:ORGA-MO
Board :D4-1907
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File Name : 3RD@VIR
Site Code : 21241907
Start Date : 12/17/2002

	3rd Street SE From North					3rd Street SE From South					Virginia Avenue SE From East					Virginia Avenue SE From West					
End Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
Peak Hour From 04:15 PM to 06:00 PM - Peak 1 of 1																					
Intersection 04:15 PM																					
Volume	40	34	5	0	79	1	208	6	0	215	4	3	16	0	23	33	18	1	0	52	369
Percent	50.6	43.0	6.3	0.0		0.5	96.7	2.8	0.0		17.4	13.0	69.6	0.0		63.5	34.6	1.9	0.0		
04:15 Volume	11	13	3	0	27	0	56	1	0	57	1	2	3	0	6	14	4	0	0	18	108
Peak Factor																					0.854
High Int. 04:15 PM						04:15 PM					05:00 PM					04:15 PM					
Volume	11	13	3	0	27	0	56	1	0	57	3	1	3	0	7	14	4	0	0	18	
Peak Factor					0.731					0.943					0.821					0.722	





O. R. GEORGE & ASSOCIATES, INC. Transportation Engineers & Traffic Planners	Contract No.: Arthur Capper Project LANE CONFIGURATION 3rd Street SE @ Virginia Avenue SE WASHINGTON DC

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Counted by:ORGA-AL
Board :D4-1910
City/County:Washington DC
Weather :Cold/Clear/Dry

File Name : 4TH@VIR
Site Code : 22231910
Start Date : 12/17/2002
Page No : 1

Groups Printed- Passenger Vehicles - Trucks - Buses

	4th Street SE From North					4th Street SE From South					Virginia Avenue SE From East					Virginia Avenue SE From West					
End Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
07:15 AM	2	26	2	0	30	2	0	0	0	2	0	0	0	0	0	0	6	0	0	6	38
07:30 AM	3	26	2	0	31	1	0	0	0	1	0	0	0	0	0	0	1	1	0	2	34
07:45 AM	2	39	2	0	43	2	0	0	0	2	0	0	0	0	0	0	3	0	0	3	48
08:00 AM	6	36	5	0	47	4	0	1	0	5	0	0	0	0	0	0	1	0	0	1	53
Total	13	127	11	0	151	9	0	1	0	10	0	0	0	0	0	0	11	1	0	12	173
08:15 AM	5	22	4	0	31	3	0	1	0	4	0	0	0	0	0	0	5	0	0	5	40
08:30 AM	3	38	2	0	43	0	0	2	0	2	0	0	0	0	0	0	7	0	0	7	52
08:45 AM	3	22	6	0	31	3	0	0	0	3	0	0	0	0	0	0	6	0	0	6	40
09:00 AM	6	29	4	0	39	0	0	1	0	1	0	0	0	0	0	0	8	1	0	9	49
Total	17	111	16	0	144	6	0	4	0	10	0	0	0	0	0	0	26	1	0	27	181
04:15 PM	9	29	3	0	41	3	0	0	0	3	0	0	0	0	0	0	12	1	0	13	57
04:30 PM	13	31	0	0	44	6	0	0	0	6	0	0	0	0	0	0	21	0	0	21	71
04:45 PM	16	27	0	0	43	4	0	1	0	5	0	0	0	0	0	0	18	0	0	18	66
05:00 PM	14	29	4	0	47	3	0	4	0	7	0	0	0	0	0	0	14	0	0	14	68
Total	52	116	7	0	175	16	0	5	0	21	0	0	0	0	0	0	65	1	0	66	262
05:15 PM	14	15	1	0	30	1	0	2	0	3	0	0	0	0	0	0	24	1	0	25	58
05:30 PM	20	26	1	0	47	2	0	3	0	5	0	0	0	0	0	0	19	0	0	19	71
05:45 PM	20	19	4	0	43	3	0	4	0	7	0	0	0	0	0	0	27	2	0	29	79
06:00 PM	17	29	3	0	49	5	0	3	0	8	0	0	0	0	0	0	23	1	0	24	81
Total	71	89	9	0	169	11	0	12	0	23	0	0	0	0	0	0	93	4	0	97	289
Grand Total	153	443	43	0	639	42	0	22	0	64	0	0	0	0	0	0	195	7	0	202	905
Apprch %	23.9	69.3	6.7	0.0		65.6	0.0	34.4	0.0		0.0	0.0	0.0	0.0		0.0	96.5	3.5	0.0		
Total %	16.9	49.0	4.8	0.0	70.6	4.6	0.0	2.4	0.0	7.1	0.0	0.0	0.0	0.0	0.0	0.0	21.5	0.8	0.0	22.3	

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Counted by:ORGA-LM
Board :D4-1908
City/County:Washington DC
Weather :Cold/Clear/Dry

File Name : 5th@VG
Site Code : 24041908
Start Date : 12/18/2002
Page No : 1

Groups Printed- Passenger Vehicles - Trucks - Buses

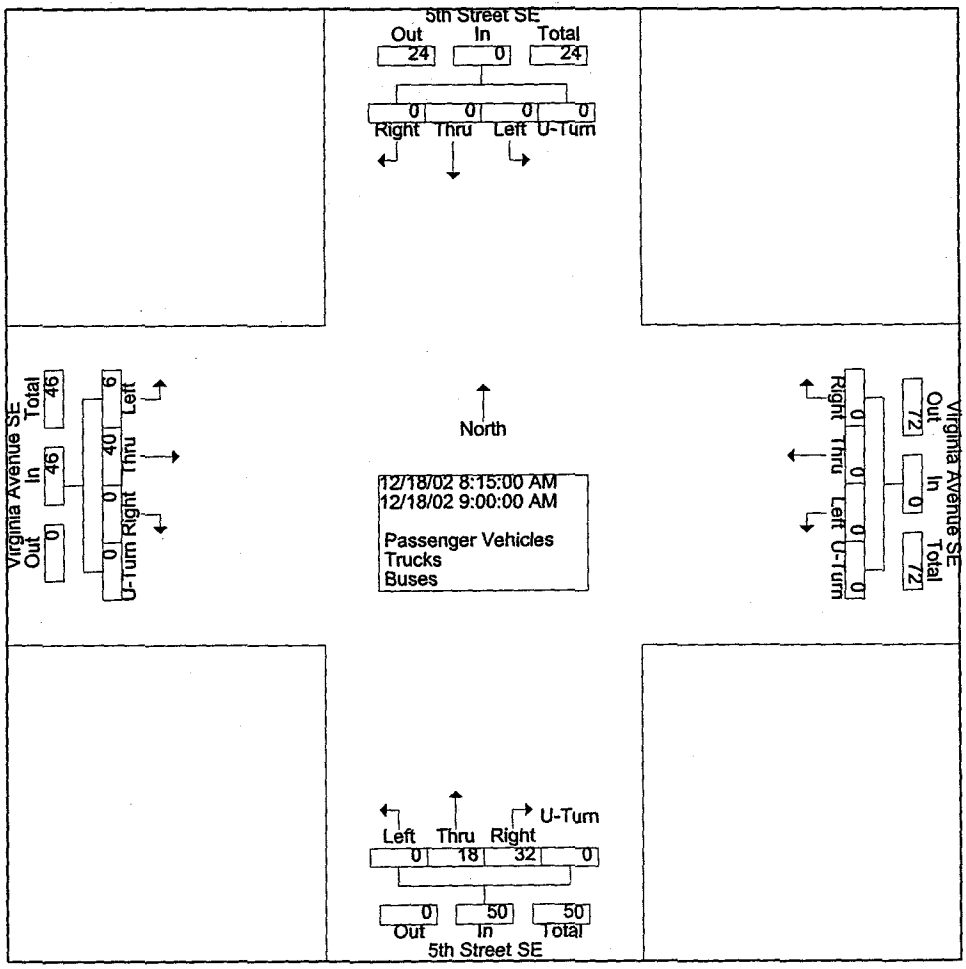
	5th Street SE From North					5th Street SE From South					Virginia Avenue SE From East					Virginia Avenue SE From West					
End Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
07:15 AM	0	0	0	0	0	0	3	3	0	6	0	0	0	0	0	1	2	0	0	3	9
07:30 AM	0	0	0	0	0	0	6	9	0	15	0	0	0	0	0	1	7	0	0	8	23
07:45 AM	0	0	0	0	0	0	3	9	0	12	0	0	0	0	0	0	6	0	0	6	18
08:00 AM	0	0	0	0	0	0	5	4	0	9	0	0	0	0	0	2	6	0	0	8	17
Total	0	0	0	0	0	0	17	25	0	42	0	0	0	0	0	4	21	0	0	25	67
08:15 AM	0	0	0	0	0	0	4	8	0	12	0	0	0	0	0	2	13	0	0	15	27
08:30 AM	0	0	0	0	0	0	5	3	0	8	0	0	0	0	0	1	11	0	0	12	20
08:45 AM	0	0	0	0	0	0	5	10	0	15	0	0	0	0	0	1	4	0	0	5	20
09:00 AM	0	0	0	0	0	0	4	11	0	15	0	0	0	0	0	2	12	0	0	14	29
Total	0	0	0	0	0	0	18	32	0	50	0	0	0	0	0	6	40	0	0	46	96
04:15 PM	0	0	0	0	0	0	22	9	0	31	0	0	0	0	0	9	24	0	0	33	64
04:30 PM	0	0	0	0	0	0	15	15	0	30	0	0	0	0	0	7	28	0	0	35	65
04:45 PM	0	0	0	0	0	0	21	11	0	32	0	0	0	0	0	14	57	0	0	71	103
05:00 PM	0	0	0	0	0	0	22	17	0	39	0	0	0	0	0	14	38	0	0	52	91
Total	0	0	0	0	0	0	80	52	0	132	0	0	0	0	0	44	147	0	0	191	323
05:15 PM	0	0	0	0	0	0	4	9	0	13	0	0	0	0	0	4	53	0	0	57	70
05:30 PM	0	0	0	0	0	0	7	17	0	24	0	0	0	0	0	4	54	0	0	58	82
05:45 PM	0	0	0	0	0	0	7	15	0	22	0	0	0	0	0	4	51	0	0	55	77
06:00 PM	0	0	0	0	0	0	9	15	0	24	0	0	0	0	0	10	49	0	0	59	83
Total	0	0	0	0	0	0	27	56	0	83	0	0	0	0	0	22	207	0	0	229	312
Grand Total	0	0	0	0	0	0	142	165	0	307	0	0	0	0	0	76	415	0	0	491	798
Apprch %	0.0	0.0	0.0	0.0		0.0	46.3	53.7	0.0		0.0	0.0	0.0	0.0		15.5	84.5	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	17.8	20.7	0.0	38.5	0.0	0.0	0.0	0.0	0.0	9.5	52.0	0.0	0.0	61.5	

O.R. George & Associates, Inc.
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Counted by:ORGA-LM
Board :D4-1908
City/County:Washington DC
Weather :Cold/Clear/Dry

File Name : 5th@VG
Site Code : 24041908
Start Date : 12/18/2002

	5th Street SE From North					5th Street SE From South					Virginia Avenue SE From East					Virginia Avenue SE From West					
End Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
Peak Hour From 07:15 AM to 09:00 AM - Peak 1 of 1																					
Intersection 08:15 AM																					
Volume	0	0	0	0	0	0	18	32	0	50	0	0	0	0	0	6	40	0	0	46	96
Percent	0.0	0.0	0.0	0.0		0.0	36.0	64.0	0.0		0.0	0.0	0.0	0.0		13.0	87.0	0.0	0.0		
09:00 Volume	0	0	0	0	0	0	4	11	0	15	0	0	0	0	0	2	12	0	0	14	29
Peak Factor																					0.828
High Int.	7:00:00 AM					08:45 AM					7:00:00 AM					08:15 AM					
Volume	0	0	0	0	0	0	5	10	0	15	0	0	0	0	0	2	13	0	0	15	
Peak Factor										0.833										0.767	

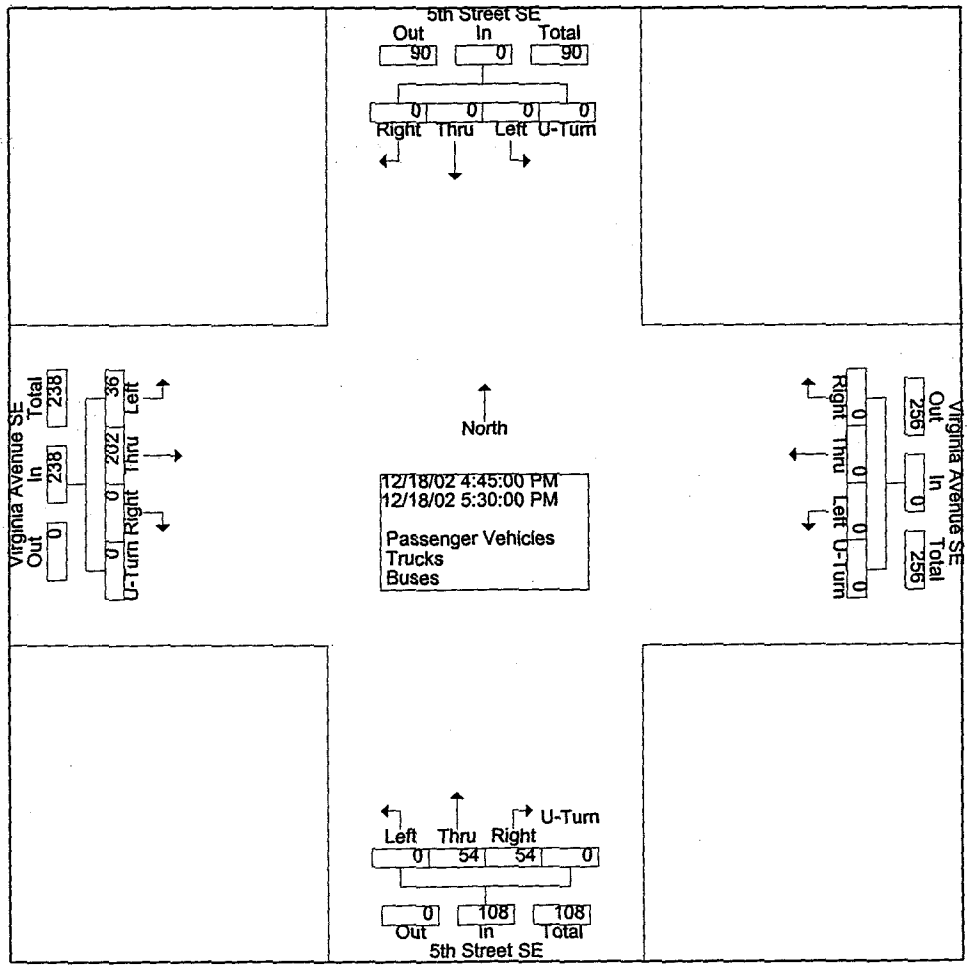


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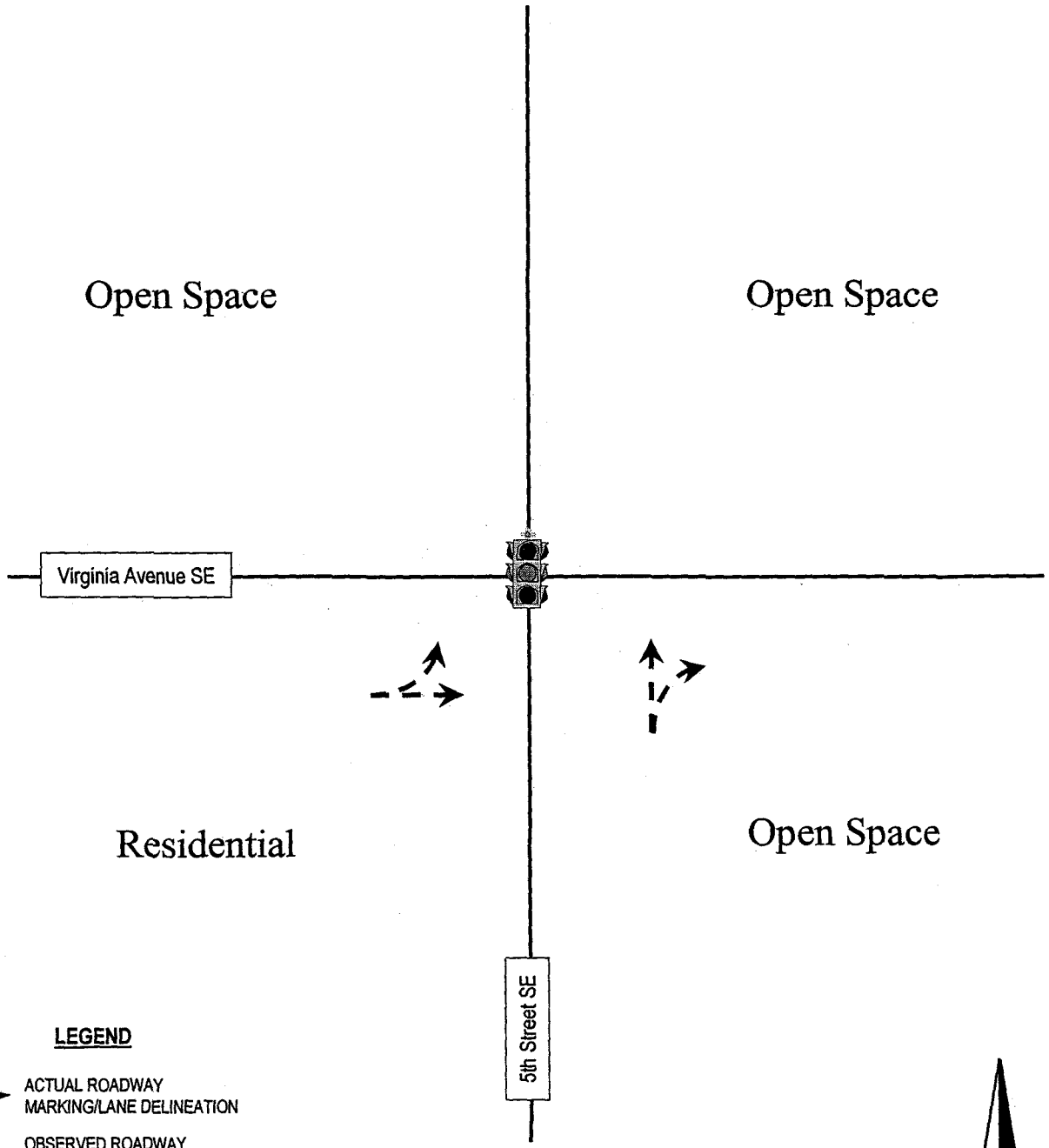
Counted by:ORGA-LM
Board :D4-1908
City/County:Washington DC
Weather :Cold/Clear/Dry

File Name : 5th@VG
Site Code : 24041908
Start Date : 12/18/2002

	5th Street SE From North					5th Street SE From South					Virginia Avenue SE From East					Virginia Avenue SE From West					
End Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
Peak Hour From 04:15 PM to 06:00 PM - Peak 1 of 1																					
Intersection 04:45 PM																					
Volume	0	0	0	0	0	0	54	54	0	108	0	0	0	0	0	36	202	0	0	238	346
Percent	0.0	0.0	0.0	0.0		0.0	50.0	50.0	0.0		0.0	0.0	0.0	0.0		15.1	84.9	0.0	0.0		
04:45 Volume	0	0	0	0	0	0	21	11	0	32	0	0	0	0	0	14	57	0	0	71	103
Peak Factor																					0.840
High Int.						05:00 PM										04:45 PM					
Volume	0	0	0	0	0	0	22	17	0	39	0	0	0	0	0	14	57	0	0	71	
Peak Factor										0.692										0.838	



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O. R. GEORGE & ASSOCIATES, INC. Transportation Engineers & Traffic Planners	Contract No.: Arthur Capper Project LANE CONFIGURATION 5th Street SE @ Virginia Avenue SE WASHINGTON DC

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Counted by:ORGA-NL
Board :D4-1576
City/County:Washington DC
Weather :Cold/Clear/Dry

File Name : 5th@VIR
Site Code : 24161576
Start Date : 12/18/2002
Page No : 1

Groups Printed- Passenger Vehicles - Trucks - Buses

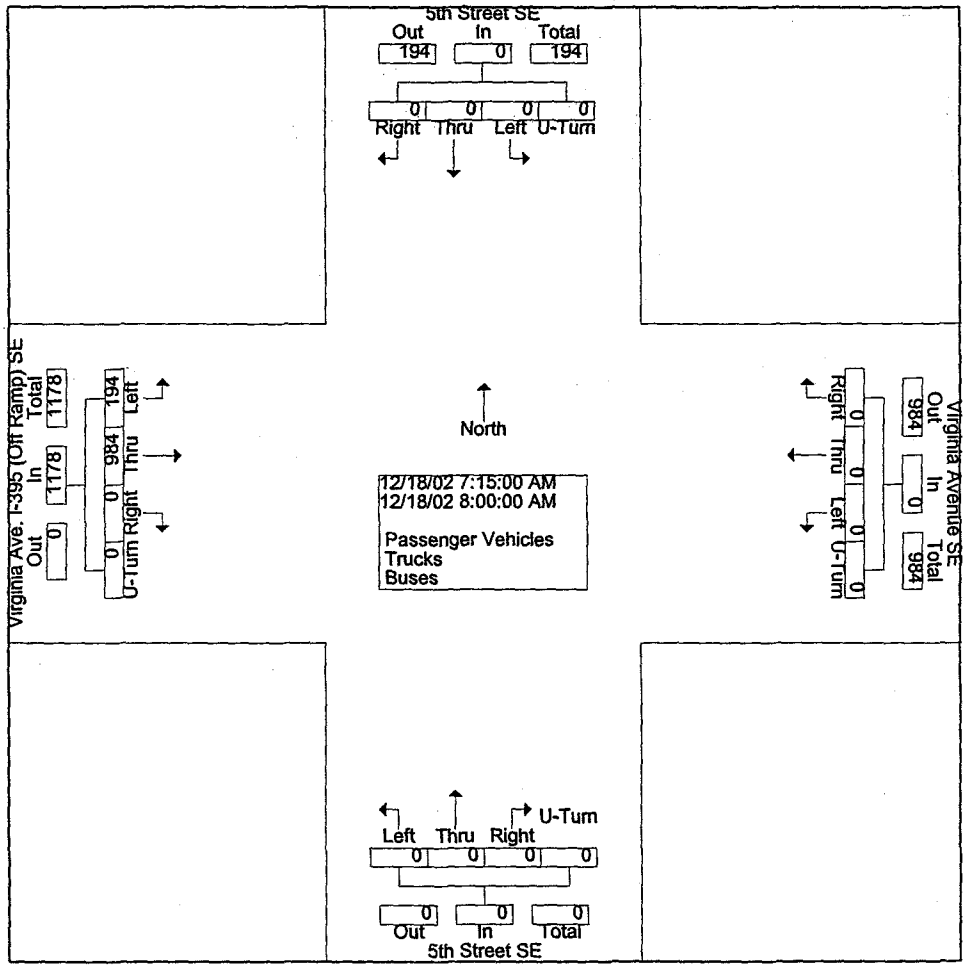
	5th Street SE From North					5th Street SE From South					Virginia Avenue SE From East					Virginia Ave. I-395 (Off Ramp) SE From West					
End Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38	251	0	0	289	289
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	52	272	0	0	324	324
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	62	245	0	0	307	307
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	216	0	0	258	258
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	194	984	0	0	1178	1178
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	56	175	0	0	231	231
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	81	139	0	0	220	220
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	64	108	0	0	172	172
09:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	69	138	0	0	207	207
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	270	560	0	0	830	830
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	47	143	0	0	190	190
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35	103	0	0	138	138
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32	92	0	0	124	124
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35	114	0	0	149	149
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	149	452	0	0	601	601
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35	116	0	0	151	151
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36	112	0	0	148	148
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32	116	0	0	148	148
06:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37	131	0	0	168	168
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	140	475	0	0	615	615
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	753	2471	0	0	3224	3224
Apprch %	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		23.4	76.6	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.4	76.6	0.0	0.0	100.0	

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Board :D4-1576
City/County:Washington DC
Weather :Cold/Clear/Dry

File Name : 5th@VIR
Site Code : 24161576
Start Date : 12/18/2002

	5th Street SE From North					5th Street SE From South					Virginia Avenue SE From East					Virginia Ave. I-395 (Off Ramp) SE From West					
End Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
Peak Hour From 07:15 AM to 09:00 AM - Peak 1 of 1																					
Intersection 07:15 AM																					
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	194	984	0	0	1178	1178
Percent	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		16.5	83.5	0.0	0.0		
07:30 Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	52	272	0	0	324	324
Peak Factor																					0.909
High Int. 7:00:00 AM						7:00:00 AM					7:00:00 AM					07:30 AM					
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	52	272	0	0	324	
Peak Factor																				0.909	

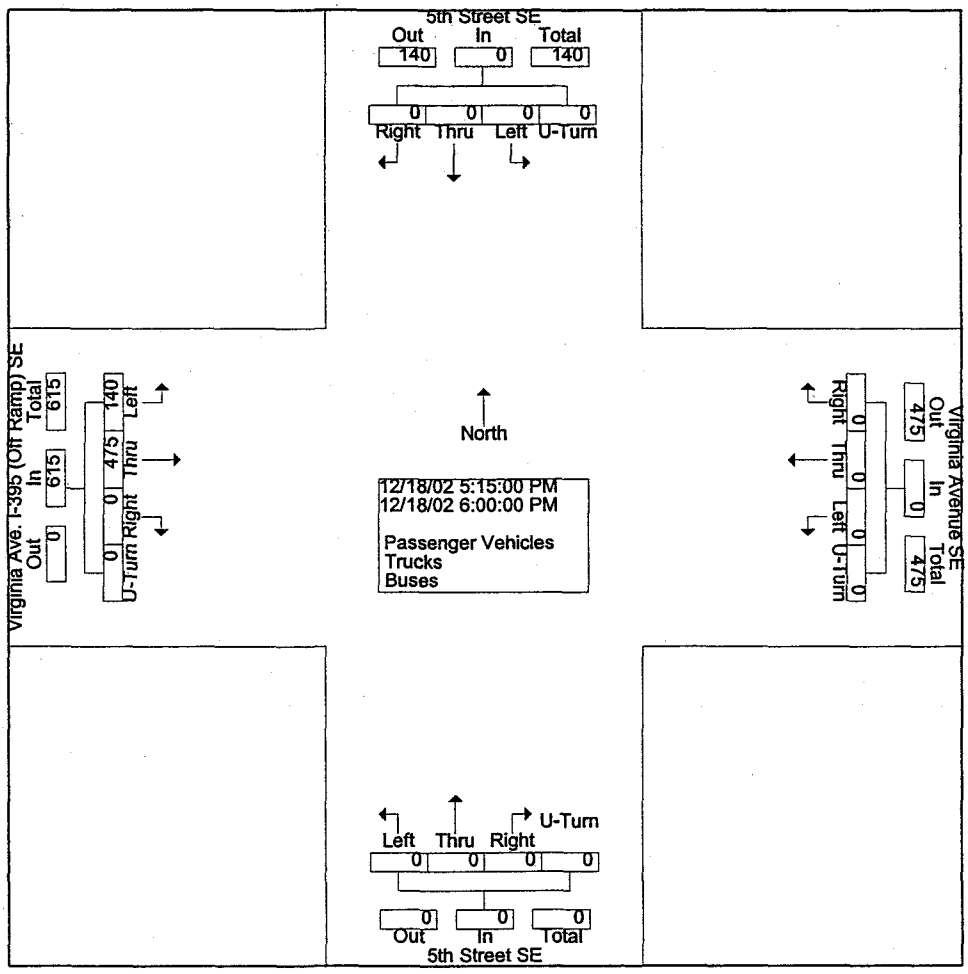


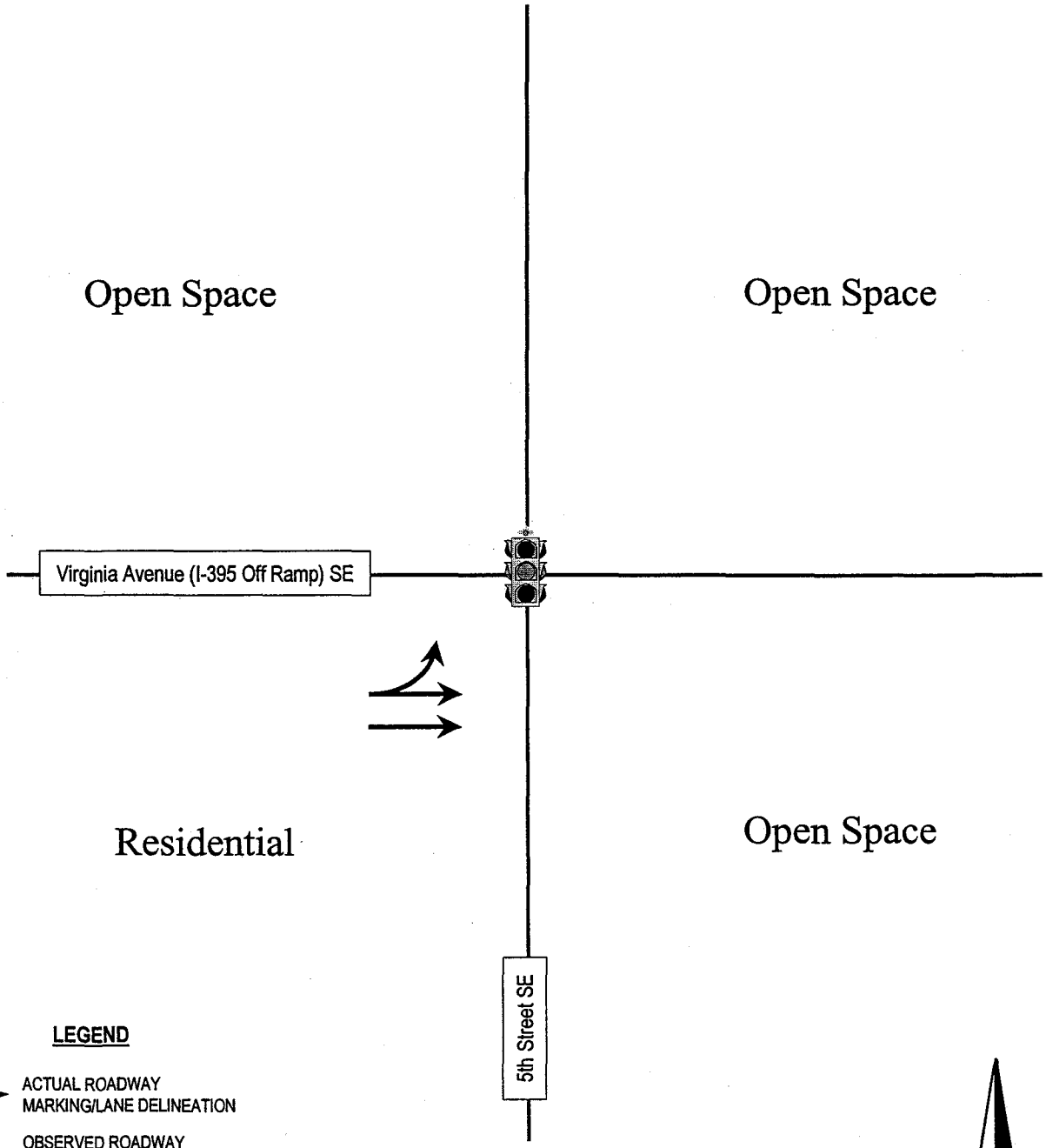
O.R. George & Associates, Inc.
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Counted by:ORGA-NL
Board :D4-1576
City/County:Washington DC
Weather :Cold/Clear/Dry

File Name : 5th@VIR
Site Code : 24161576
Start Date : 12/18/2002
Page No : 3

	5th Street SE From North					5th Street SE From South					Virginia Avenue SE From East					Virginia Ave. I-395 (Off Ramp) SE From West					
End Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
Peak Hour From 04:15 PM to 06:00 PM - Peak 1 of 1																					
Intersection 05:15 PM																					
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	140	475	0	0	615	615
Percent	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		22.8	77.2	0.0	0.0		
06:00 Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37	131	0	0	168	168
Peak Factor																					0.915
High Int.																06:00 PM					
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37	131	0	0	168	
Peak Factor																				0.915	





O. R. GEORGE & ASSOCIATES, INC.
Transportation Engineers & Traffic Planners

Contract No.: Arthur Capper Project

LANE CONFIGURATION
5th Street SE @ Virginia Avenue (I-395 Off Ramp) SE
WASHINGTON DC

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Counted by:ORGA-OS
Board :D4-2238
City/County:Washington DC
Weather :Cold/Clear/Dry

File Name : 7TH@VIR
Site Code : 23062238
Start Date : 12/17/2002
Page No : 1

Groups Printed- Passenger Vehicles - Trucks - Buses

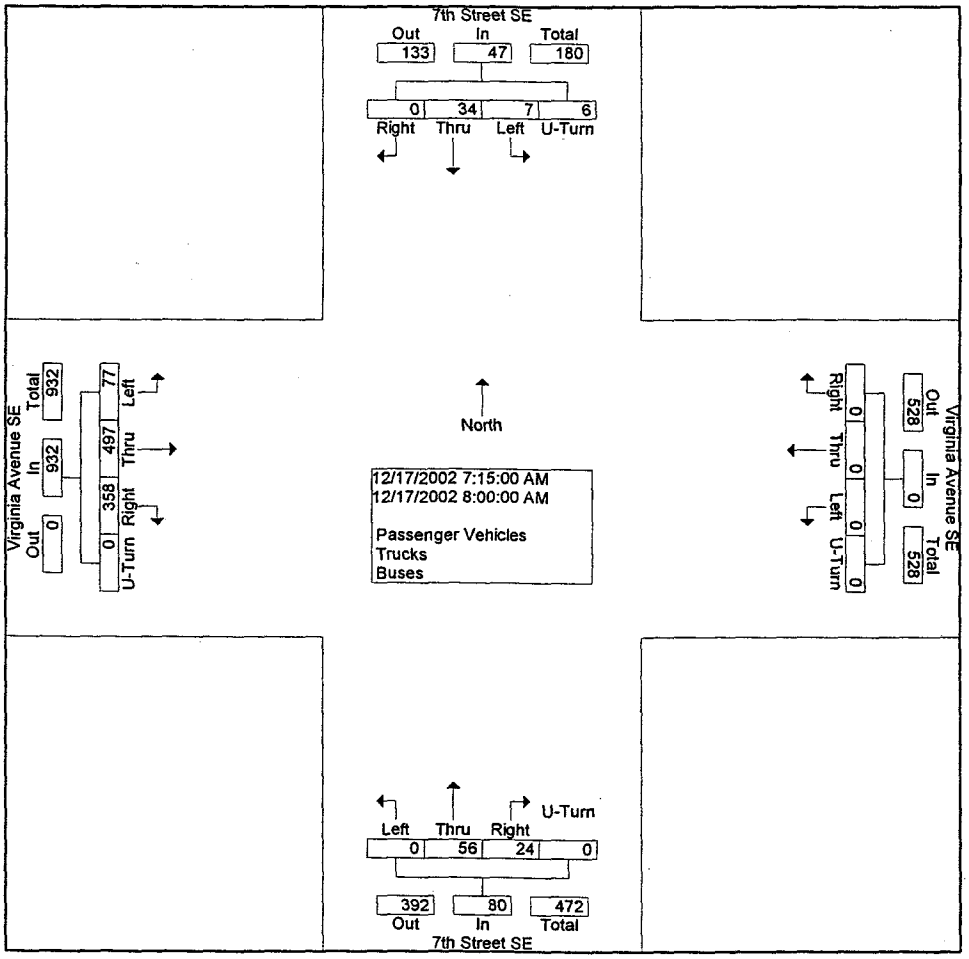
	7th Street SE From North					7th Street SE From South					Virginia Avenue SE From East					Virginia Avenue SE From West					
End Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
07:15 AM	0	7	0	0	7	0	9	6	0	15	0	0	0	0	0	13	145	82	0	240	262
07:30 AM	3	10	0	0	13	0	13	6	0	19	0	0	0	0	0	21	155	101	0	277	309
07:45 AM	2	10	0	4	16	0	16	5	0	21	0	0	0	0	0	21	117	83	0	221	258
08:00 AM	2	7	0	2	11	0	18	7	0	25	0	0	0	0	0	22	80	92	0	194	230
Total	7	34	0	6	47	0	56	24	0	80	0	0	0	0	0	77	497	358	0	932	1059
08:15 AM	1	17	0	0	18	0	13	5	0	18	0	0	0	0	0	19	94	91	0	204	240
08:30 AM	2	12	0	0	14	0	13	7	0	20	0	0	0	0	0	31	59	57	0	147	181
08:45 AM	5	13	0	0	18	0	25	9	0	34	0	0	0	0	0	21	70	52	0	143	195
09:00 AM	1	8	0	0	9	0	29	8	0	37	0	0	0	0	0	28	71	43	0	142	188
Total	9	50	0	0	59	0	80	29	0	109	0	0	0	0	0	99	294	243	0	636	804
04:15 PM	3	6	0	0	9	0	66	12	0	78	0	0	0	0	0	23	156	17	0	196	283
04:30 PM	2	4	0	0	6	0	80	4	0	84	0	0	0	0	0	35	138	10	0	183	273
04:45 PM	2	8	0	0	10	0	92	17	0	109	0	0	0	0	0	17	142	11	0	170	289
05:00 PM	6	9	0	0	15	0	67	16	0	83	0	0	0	0	0	23	130	13	0	166	264
Total	13	27	0	0	40	0	305	49	0	354	0	0	0	0	0	98	566	51	0	715	1109
05:15 PM	7	6	0	0	13	0	77	11	0	88	0	0	0	0	0	17	114	16	0	147	248
05:30 PM	7	8	0	0	15	0	72	5	0	77	0	0	0	0	0	11	141	6	0	158	250
05:45 PM	7	6	0	0	13	0	66	16	0	82	0	0	0	0	0	17	113	7	0	137	232
06:00 PM	9	11	0	0	20	0	45	7	0	52	0	0	0	0	0	19	114	15	0	148	220
Total	30	31	0	0	61	0	260	39	0	299	0	0	0	0	0	64	482	44	0	590	950
Grand Total	59	142	0	6	207	0	701	141	0	842	0	0	0	0	0	338	1839	696	0	2873	3922
Apprch %	28.5	68.6	0.0	2.9		0.0	83.3	16.7	0.0		0.0	0.0	0.0	0.0		11.8	64.0	24.2	0.0		
Total %	1.5	3.6	0.0	0.2	5.3	0.0	17.9	3.6	0.0	21.5	0.0	0.0	0.0	0.0	0.0	8.6	46.9	17.7	0.0	73.3	

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Counted by:ORGA-OS
Board :D4-2238
City/County:Washington DC
Weather :Cold/Clear/Dry

File Name : 7TH@VIR
Site Code : 23062238
Start Date : 12/17/2002

	7th Street SE From North					7th Street SE From South					Virginia Avenue SE From East					Virginia Avenue SE From West					
End Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
Peak Hour From 07:15 AM to 12:45 PM - Peak 1 of 1																					
Intersection 07:15 AM																					
Volume	7	34	0	6	47	0	56	24	0	80	0	0	0	0	0	77	497	358	0	932	1059
Percent	14.9	72.3	0.0	12.8		0.0	70.0	30.0	0.0		0.0	0.0	0.0	0.0		8.3	53.3	38.4	0.0		
07:30 Volume	3	10	0	0	13	0	13	6	0	19	0	0	0	0	0	21	155	101	0	277	309
Peak Factor																					0.857
High Int.	07:45 AM					08:00 AM					7:00:00 AM					07:30 AM					
Volume	2	10	0	4	16	0	18	7	0	25	0	0	0	0	0	21	155	101	0	277	
Peak Factor					0.734					0.800										0.841	

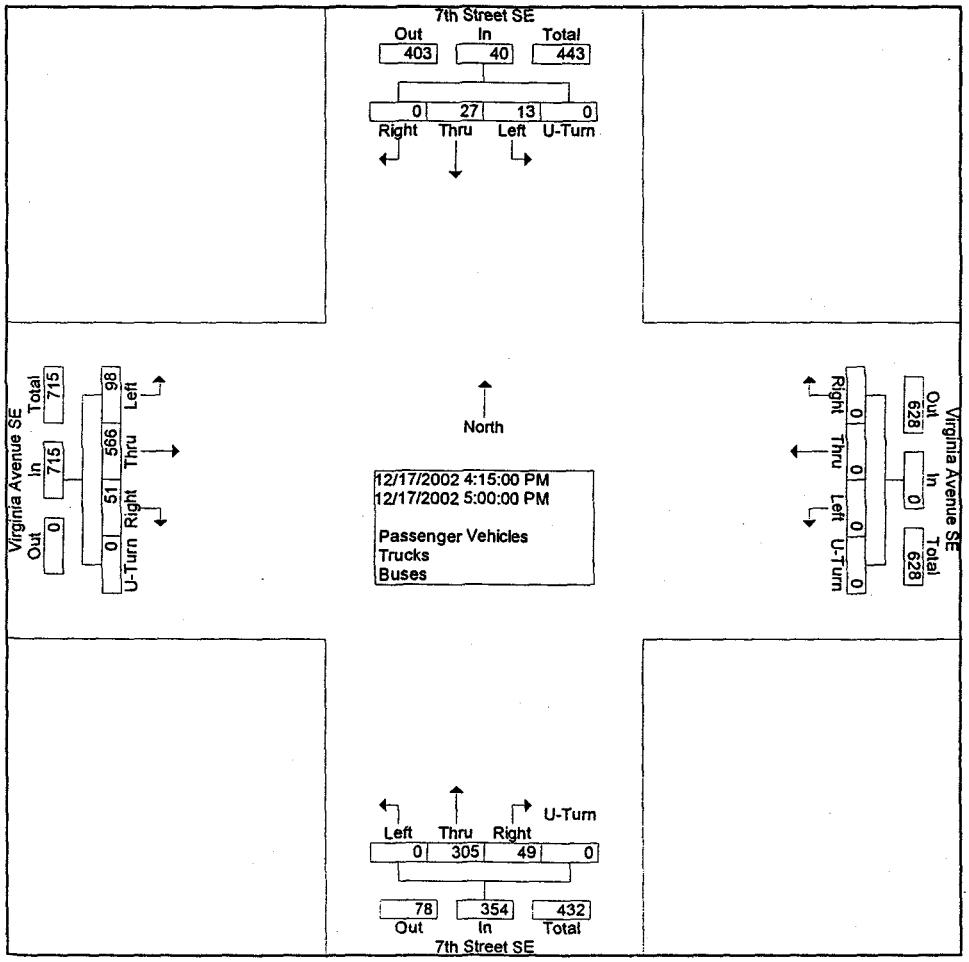


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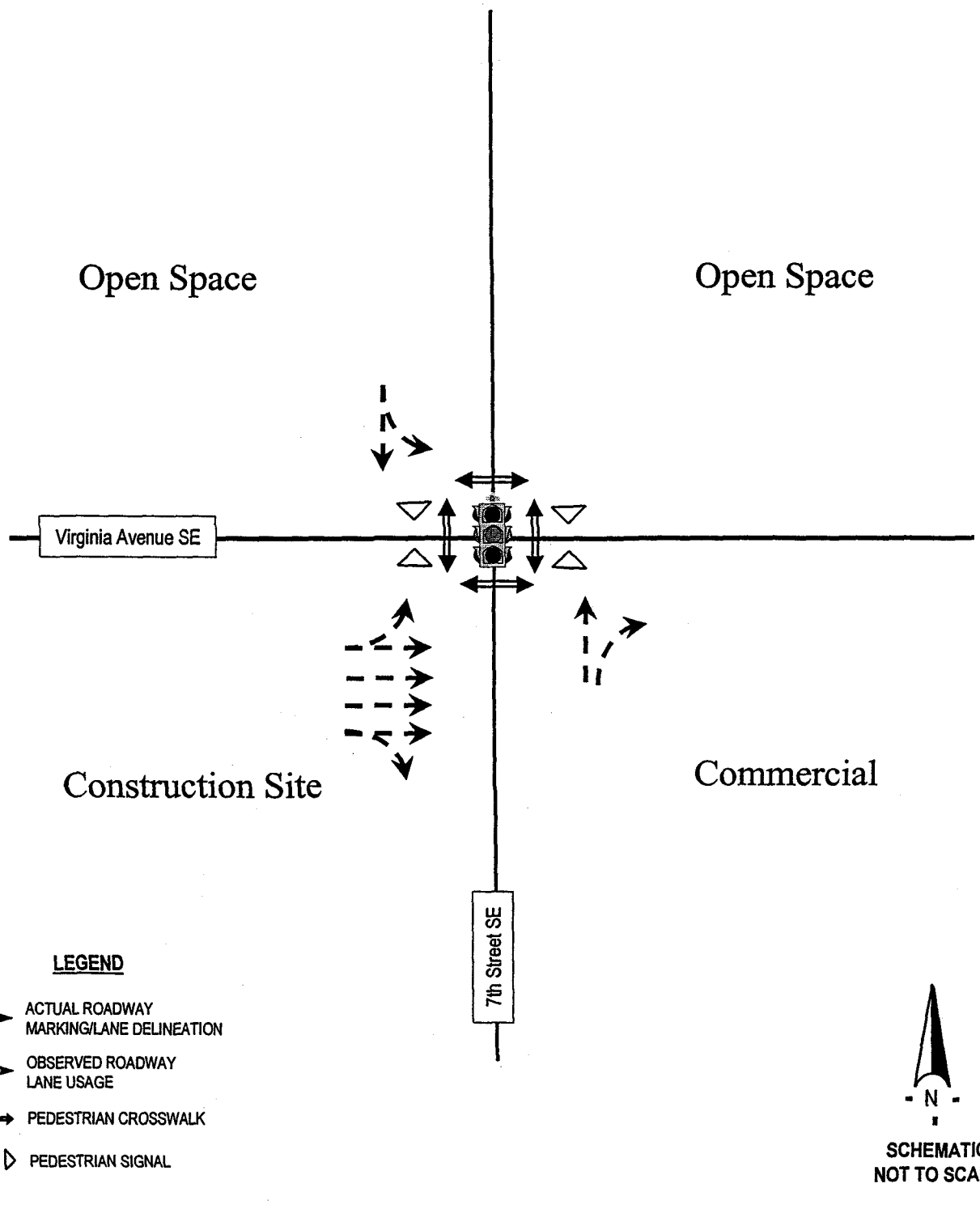
Counted by:ORGA-OS
Board :D4-2238
City/County:Washington DC
Weather :Cold/Clear/Dry

File Name : 7TH@VIR
Site Code : 23062238
Start Date : 12/17/2002

	7th Street SE From North					7th Street SE From South					Virginia Avenue SE From East					Virginia Avenue SE From West					
End Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
Peak Hour From 01:00 PM to 06:00 PM - Peak 1 of 1																					
Intersection 04:15 PM																					
Volume	13	27	0	0	40	0	305	49	0	354	0	0	0	0	0	98	566	51	0	715	1109
Percent	32.5	67.5	0.0	0.0		0.0	86.2	13.8	0.0		0.0	0.0	0.0	0.0		13.7	79.2	7.1	0.0		
04:45 Volume	2	8	0	0	10	0	92	17	0	109	0	0	0	0	0	17	142	11	0	170	289
Peak Factor																					0.959
High Int. 05:00 PM						04:45 PM										04:15 PM					
Volume	6	9	0	0	15	0	92	17	0	109	0	0	0	0	0	23	156	17	0	196	
Peak Factor					0.667					0.812										0.912	



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O. R. GEORGE & ASSOCIATES, INC. Transportation Engineers & Traffic Planners	Contract No.: Arthur Capper Project LANE CONFIGURATION 7th Street SE @ Virginia Avenue SE WASHINGTON DC

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Counted by:ORGA-CU
Board :D4-1909
City/County:Washington DC
Weather :Cold/Clear/Dry

File Name : 8TH@VIR
Site Code : 25181909
Start Date : 12/18/2002
Page No : 1

Groups Printed- Passenger Vehicles - Trucks - Buses

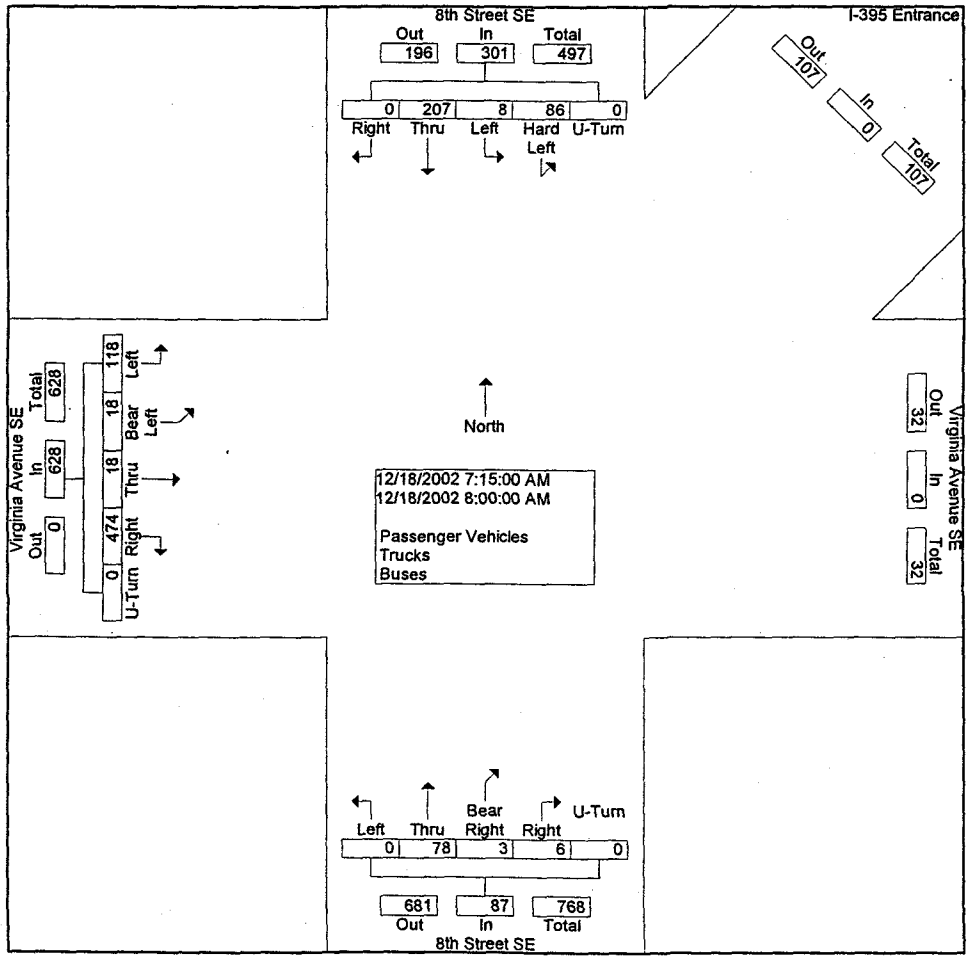
	8th Street SE From North						8th Street SE From South						Virginia Avenue SE From West						
End Time	Hard Left	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Bear Right	Right	U-Turn	App. Total	Left	Bear Left	Thru	Right	U-Turn	App. Total	Int. Total
07:15 AM	22	2	39	0	0	63	0	16	0	2	0	18	29	3	2	147	0	181	262
07:30 AM	18	6	46	0	0	70	0	22	0	2	0	24	27	8	4	133	0	172	266
07:45 AM	22	0	66	0	0	88	0	23	1	1	0	25	26	5	8	100	0	139	252
08:00 AM	24	0	56	0	0	80	0	17	2	1	0	20	36	2	4	94	0	136	236
Total	86	8	207	0	0	301	0	78	3	6	0	87	118	18	18	474	0	628	1016
08:15 AM	20	3	54	0	0	77	0	34	5	1	0	40	20	9	9	71	0	109	226
08:30 AM	16	7	35	0	0	58	0	28	3	1	0	32	30	8	5	46	0	89	179
08:45 AM	15	4	45	0	0	64	0	31	2	5	0	38	29	13	8	34	0	84	186
09:00 AM	20	3	55	0	0	78	0	27	2	0	0	29	39	14	10	46	0	109	216
Total	71	17	189	0	0	277	0	120	12	7	0	139	118	44	32	197	0	391	807
04:15 PM	42	2	36	0	0	80	0	38	6	1	0	45	83	47	10	40	0	180	305
04:30 PM	48	1	31	0	0	80	0	49	3	1	0	53	50	36	4	35	0	125	258
04:45 PM	71	10	54	0	0	135	0	47	4	0	0	51	51	59	3	41	0	154	340
05:00 PM	85	2	50	0	0	137	0	54	12	2	0	68	54	69	3	43	0	169	374
Total	246	15	171	0	0	432	0	188	25	4	0	217	238	211	20	159	0	628	1277
05:15 PM	82	2	43	0	0	127	0	30	18	0	0	48	66	91	3	46	0	206	381
05:30 PM	99	1	38	0	0	138	0	26	8	0	0	34	46	75	5	44	0	170	342
05:45 PM	74	2	43	0	0	119	0	22	7	0	0	29	49	84	5	42	0	180	328
06:00 PM	56	3	32	0	0	91	0	31	8	1	0	40	69	75	3	34	0	181	312
Total	311	8	156	0	0	475	0	109	41	1	0	151	230	325	16	166	0	737	1363
Grand Total	714	48	723	0	0	1485	0	495	81	18	0	594	704	598	86	996	0	2384	4463
Apprch %	48.1	3.2	48.7	0.0	0.0		0.0	83.3	13.6	3.0	0.0		29.5	25.1	3.6	41.8	0.0		
Total %	16.0	1.1	16.2	0.0	0.0	33.3	0.0	11.1	1.8	0.4	0.0	13.3	15.8	13.4	1.9	22.3	0.0	53.4	

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Board :D4-1909
City/County:Washington DC
Weather :Cold/Clear/Dry

File Name : 8TH@VIR
Site Code : 25181909
Start Date : 12/18/2002
Page No : 2

	8th Street SE From North						8th Street SE From South						Virginia Avenue SE From West						
End Time	Hard Left	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Bear Right	Right	U-Turn	App. Total	Left	Bear Left	Thru	Right	U-Turn	App. Total	Int. Total
Peak Hour From 07:15 AM to 12:45 PM - Peak 1 of 1																			
Intersection 07:15 AM																			
Volume	86	8	207	0	0	301	0	78	3	6	0	87	118	18	18	474	0	628	1016
Percent	28.6	2.7	68.8	0.0	0.0		0.0	89.7	3.4	6.9	0.0		18.8	2.9	2.9	75.5	0.0		
07:30 Volume	18	6	46	0	0	70	0	22	0	2	0	24	27	8	4	133	0	172	266
Peak Factor																			0.955
High Int. 07:45 AM							07:45 AM						07:15 AM						
Volume	22	0	66	0	0	88	0	23	1	1	0	25	29	3	2	147	0	181	
Peak Factor						0.855						0.870						0.867	

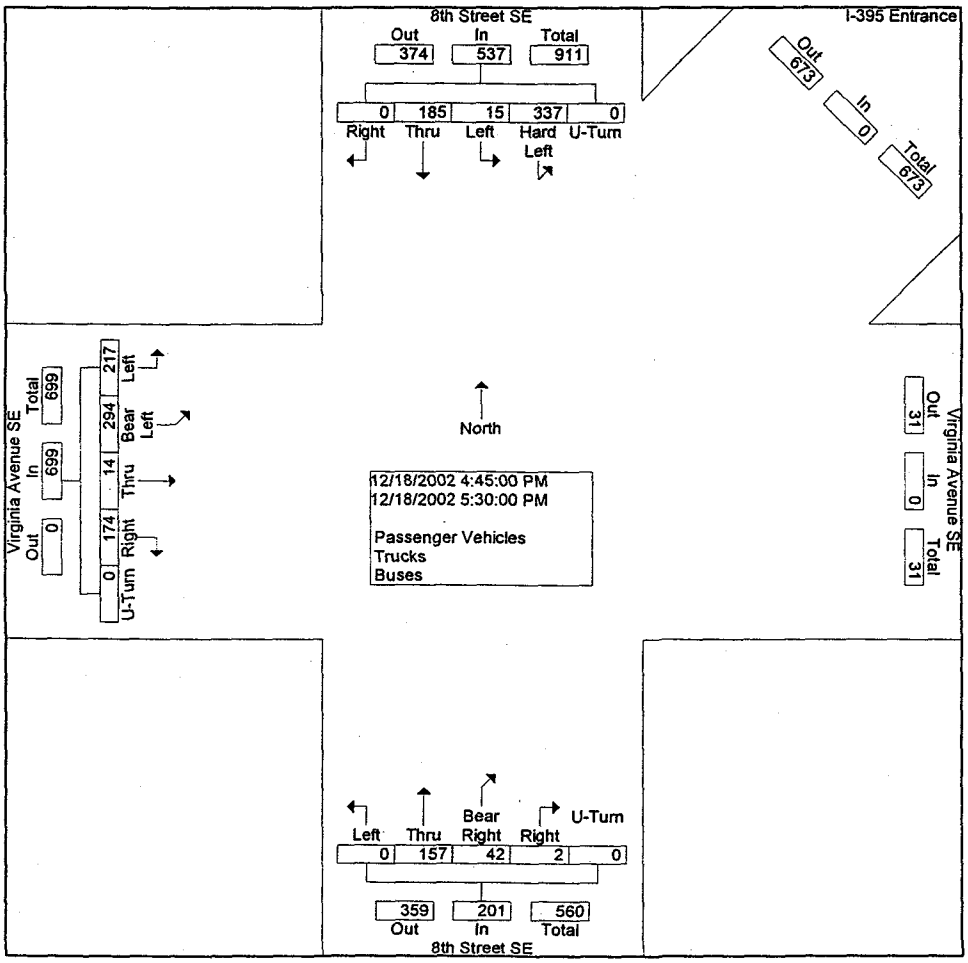


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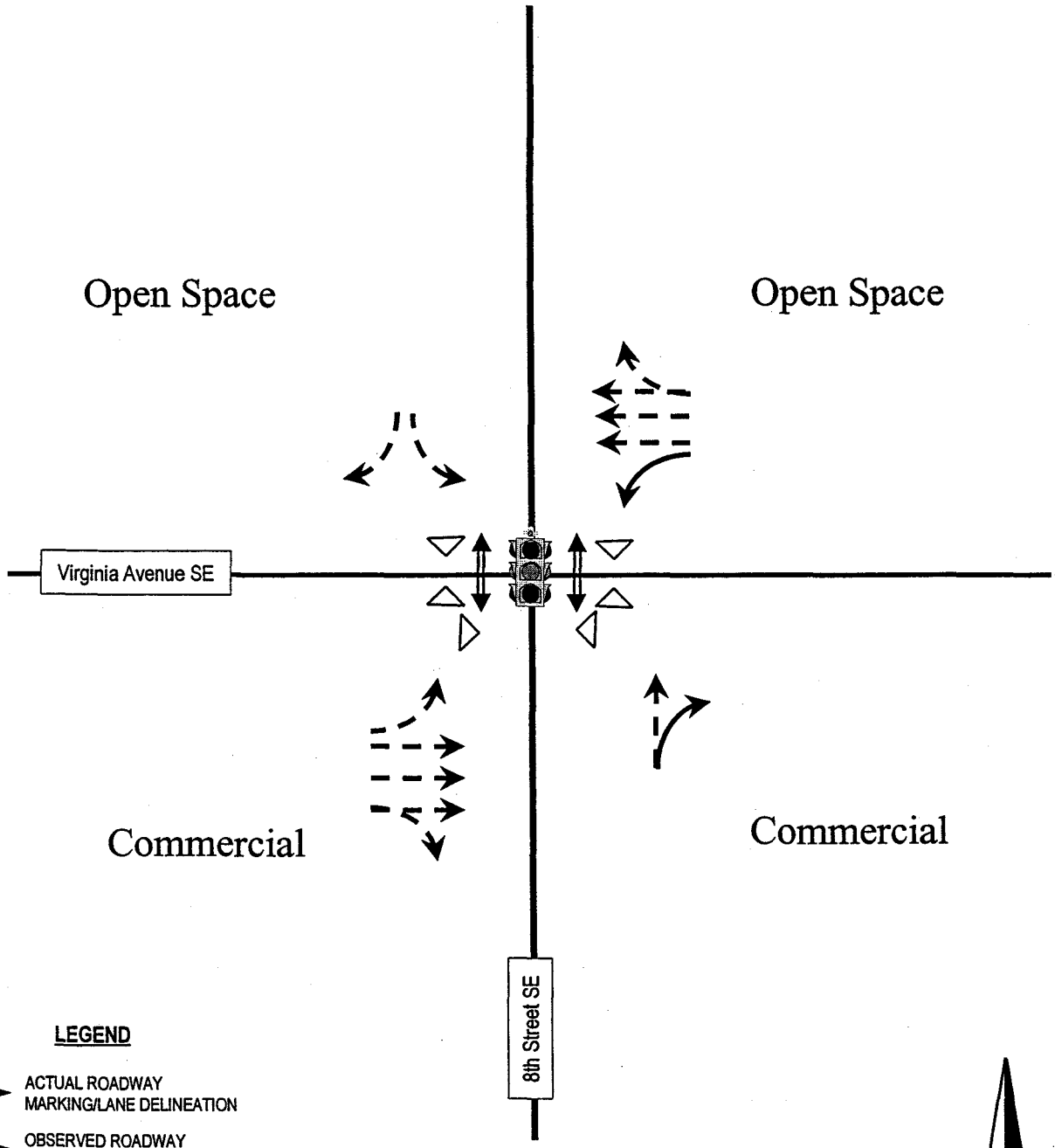
Counted by:ORGA-CU
Board :D4-1909
City/County:Washington DC
Weather :Cold/Clear/Dry

File Name : 8TH@VIR
Site Code : 25181909
Start Date : 12/18/2002
Page No : 3

	8th Street SE From North						8th Street SE From South						Virginia Avenue SE From West						
End Time	Hard Left	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Bear Right	Right	U-Turn	App. Total	Left	Bear Left	Thru	Right	U-Turn	App. Total	Int. Total
Peak Hour From 01:00 PM to 06:00 PM - Peak 1 of 1																			
Intersection	04:45 PM																		
Volume	337	15	185	0	0	537	0	157	42	2	0	201	217	294	14	174	0	699	1437
Percent	62.8	2.8	34.5	0.0	0.0		0.0	78.1	20.9	1.0	0.0		31.0	42.1	2.0	24.9	0.0		
05:15 Volume	82	2	43	0	0	127	0	30	18	0	0	48	66	91	3	46	0	206	381
Peak Factor																			0.943
High Int.	05:30 PM						05:00 PM						05:15 PM						
Volume	99	1	38	0	0	138	0	54	12	2	0	68	66	91	3	46	0	206	
Peak Factor						0.973						0.739						0.848	



B-47



O. R. GEORGE & ASSOCIATES, INC. Transportation Engineers & Traffic Planners	Contract No.: BCS 99-31B Task order 99-31B-054 LANE CONFIGURATION MD97/US29 (Georgia Avenue) @ MD 384 (Colesville Road) SILVER SPRING, MONTGOMERY COUNTY

APPENDIX

C

CAPACITY ANALYSIS WORKSHEETS
EXISTING TRAFFIC CONDITIONS

CAPACITY ANALYSIS LEVEL OF SERVICE AND DELAY RANGES (In Sec.) FOR SIGNALIZED AND UNSIGNALIZED INTERSECTIONS

	Average Delay Per Vehicle (Sec.)	
LOS*	**Signalized**	**Unsignalized**
A	≤ 10	≤ 10
B	> 10 and ≤ 20	> 10 and ≤ 15
C	> 20 and ≤ 35	> 15 and ≤ 25
D	> 35 and ≤ 55	> 25 and ≤ 35
E	> 55 and ≤ 80	> 35 and ≤ 50
F	> 80	> 50

* LOS = Level of Service

Source: Highway Capacity Manual [2000 Edition].

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Alvin Powell*	Intersection	*New Jersey Ave at I St*
Agency/Co.	*ORGA*	Jurisdiction	*District of Columbia*
Date Performed	*1/23/03*	Analysis Year	*2003 (Existing)*
Analysis Time Period	*AM Peak*		
Project Description	*Arthur Capper Project*		
East/West Street:	*I Street, S.E.*	North/South Street:	*New Jersey Avenue, S.E*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*83*	*86*	*0*	*0*	*33*	*44*
Peak-Hour Factor, PHF	*0.81*	*0.81*	*1.00*	*1.00*	*0.64*	*0.64*
Hourly Flow Rate, HFR	*102*	*106*	*0*	*0*	*51*	*68*
Percent Heavy Vehicles	*0*	–	–	*0*	–	–
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*					*TR*
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*0*	*58*	*0*	*30*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*0.79*	*1.00*	*0.79*
Hourly Flow Rate, HFR	*0*	*0*	*0*	*73*	*0*	*37*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration					*LR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*						*LR*	
v (vph)	*102*						*110*	
C (m) (vph)	*1482*						*665*	
v/c	*0.07*						*0.17*	
95% queue length	*0.22*						*0.59*	
Control Delay	*7.6*						*11.5*	
LOS	*A*						*B*	
Approach Delay	–	–				*11.5*		
Approach LOS	–	–				*B*		

>

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Version 4.1c

C-1

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Alvin Powell*	Intersection	*New Jersey Ave at I St*
Agency/Co.	*ORGA*	Jurisdiction	*District of Columbia*
Date Performed	*1/23/03*	Analysis Year	*2003 (Existing)*
Analysis Time Period	*PM Peak*		
Project Description	*Arthur Capper Project*		
East/West Street:	*I Street, S.E.*	North/South Street:	*New Jersey Avenue, S.E*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*48*	*65*	*0*	*0*	*64*	*47*
Peak-Hour Factor, PHF	*0.86*	*0.86*	*1.00*	*1.00*	*0.75*	*0.75*
Hourly Flow Rate, HFR	*55*	*75*	*0*	*0*	*85*	*62*
Percent Heavy Vehicles	*0*	–	–	*0*	–	–
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*					*TR*
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*0*	*75*	*0*	*58*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*0.81*	*1.00*	*0.81*
Hourly Flow Rate, HFR	*0*	*0*	*0*	*92*	*0*	*71*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration					*LR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*						*LR*	
v (vph)	*55*						*163*	
C (m) (vph)	*1447*						*766*	
v/c	*0.04*						*0.21*	
95% queue length	*0.12*						*0.80*	
Control Delay	*7.6*						*11.0*	
LOS	*A*						*B*	
Approach Delay	–	–				*11.0*		
Approach LOS	–	–				*B*		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Alvin Powell*	Intersection	*New Jersey Ave at K St*
Agency/Co.	*ORGA*	Jurisdiction	*District of Columbia*
Date Performed	*1/23/03*	Analysis Year	*2003 (Existing)*
Analysis Time Period	*AM Peak*		
Project Description	*Arthur Capper Project*		
East/West Street:	*K Street, S.E.*	North/South Street:	*New Jersey Avenue, S.E.*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*2*	*115*	*8*	*25*	*35*	*3*
Peak-Hour Factor, PHF	*0.85*	*0.85*	*0.85*	*0.66*	*0.66*	*0.66*
Hourly Flow Rate, HFR	*2*	*135*	*9*	*37*	*53*	*4*
Percent Heavy Vehicles	*0*	–	–	*0*	–	–
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LTR*			*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*6*	*45*	*56*	*5*	*12*	*3*
Peak-Hour Factor, PHF	*0.92*	*0.92*	*0.92*	*0.46*	*0.46*	*0.46*
Hourly Flow Rate, HFR	*6*	*48*	*60*	*10*	*26*	*6*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*	*LTR*		*LTR*			*LTR*	
v (vph)	*2*	*37*		*114*			*42*	
C (m) (vph)	*1560*	*1451*		*745*			*631*	
v/c	*0.00*	*0.03*		*0.15*			*0.07*	
95% queue length	*0.00*	*0.08*		*0.54*			*0.21*	
Control Delay	*7.3*	*7.5*		*10.7*			*11.1*	
LOS	*A*	*A*		*B*			*B*	
Approach Delay	–	–	*10.7*			*11.1*		
Approach LOS	–	–	*B*			*B*		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Alvin Powell*	Intersection	*New Jersey Ave at K St*
Agency/Co.	*ORGA*	Jurisdiction	*District of Columbia*
Date Performed	*1/23/03*	Analysis Year	*2003 (Existing)*
Analysis Time Period	*PM Peak*		
Project Description	*Arthur Capper Project*		
East/West Street:	*K Street, S.E.*	North/South Street:	*New Jersey Avenue, S.E.*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*3*	*81*	*7*	*32*	*81*	*11*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.94*	*0.94*	*0.94*
Hourly Flow Rate, HFR	*3*	*85*	*7*	*34*	*86*	*11*
Percent Heavy Vehicles	*0*	–	–	*0*	–	–
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LTR*			*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*4*	*31*	*32*	*13*	*17*	*4*
Peak-Hour Factor, PHF	*0.73*	*0.73*	*0.73*	*0.77*	*0.77*	*0.77*
Hourly Flow Rate, HFR	*5*	*42*	*43*	*16*	*22*	*5*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*	*LTR*		*LTR*			*LTR*	
v (vph)	*3*	*34*		*90*			*43*	
C (m) (vph)	*1509*	*1515*		*762*			*640*	
v/c	*0.00*	*0.02*		*0.12*			*0.07*	
95% queue length	*0.01*	*0.07*		*0.40*			*0.22*	
Control Delay	*7.4*	*7.4*		*10.4*			*11.0*	
LOS	*A*	*A*		*B*			*B*	
Approach Delay	–	–	*10.4*			*11.0*		
Approach LOS	–	–	*B*			*B*		

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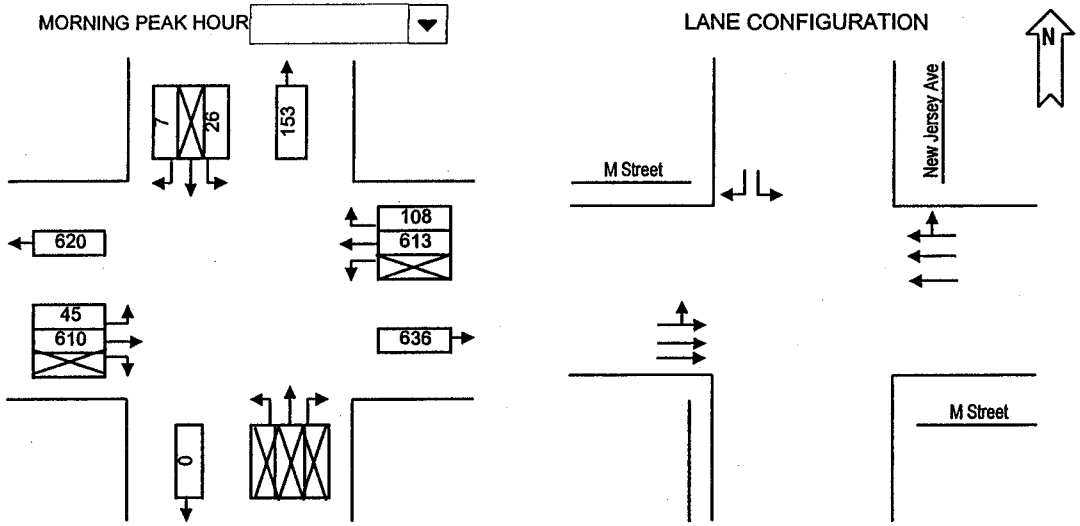
CRITICAL LANE VOLUME CAPACITY ANALYSIS

ORGA
O.R. George & Associates, Inc

CONDITION: Existing - Weekday
COMPUTED BY: ORGA
DATE: 2/13/03
DESIGN YEAR: 2007
LOCATION: M Street, SE at New Jersey Avenue, SE Washington, DC

MORNING PEAK HOUR

LANE CONFIGURATION



EVENING PEAK HOUR

Phasing (ϕ)

Intersection Control: Signal ☐ Stop ☑ Ways ☐

RTOR: NB ☐ SB ☐ EB ☐ WB ☐

Washington D.C.

No. of Lanes	Lane Use Factor
1	= 1.00
2	= 0.55
3	= 0.40
4	= 0.30
Dble. L.T.	= 0.55

Service Levels	Critical Lane Vol. Total
A =	⩽ 1,000
B =	1,001 — 1,150
C =	1,151 — 1,300
D =	1,301 — 1,450
E =	1,451 — 1,600
F =	> 1,600

Opposing T+R Volume (Vph)	PCE
⩽ 199	1.1
⩽ 599	2.0
⩽ 799	3.0
⩽ 999	4.0
⩾ 1000	5.0

ϕ Morning Movement	Right	Thru	PCE	Left	Volume (1)	Lane Factor (2)	Lane Volume (1)X(2)	Oppo-sing Lefts	Critical Lane Volume	
	0	0	0	0	0	0.00	0	0	0	☐
	0	0	0	0	0	0.00	0	0	0	☐
SBL	0	0	0	26	26	1.00	26	0	26	☑
SBR	7	0	0	0	-38	1.00	-38	0	-38	☐
EBTL	0	610	3	45	745	0.40	298	0	298	☐
	0	0	0	0	0	0.00	0	0	0	☐
WBTR+EBL	108	613	0	0	721	0.40	288	45	333	☑
	0	0	0	0	0	1.00	0	0	0	☐

Remarks:

☑ Critical Volume — Total CLV 359 — V/C
V/C = CLV / 1600 — LOS A — 0.22

ϕ Evening Movement	Right	Thru	PCE	Left	Volume (1)	Lane Factor (2)	Lane Volume (1)X(2)	Oppo-sing Lefts	Critical Lane Volume	
	0	0	0	0	0	0.00	0	0	0	☐
	0	0	0	0	0	0.00	0	0	0	☐
SBL	0	0	0	35	35	1.00	35	0	35	☑
SBR	34-51	0	0	0	-17	1.00	-17	0	-17	☐
EBTL	0	850	3	51	1003	0.40	401	0	401	☑
	0	0	0	0	0	0.00	0	0	0	☐
WBTR+EBL	57	558	0	0	615	0.40	246	51	297	☐
	0	0	0	0	0	1.00	0	0	0	☐

Remarks:

☑ Critical Volume — Total CLV 436 — V/C
V/C = CLV / 1600 — LOS A — 0.27

HCS2000™ DETAILED REPORT

General Information		Site Information	
Analyst	*Alvin Powell*	Intersection	*M St at 3rd St*
Agency or Co.	*ORGA*	Area Type	*All other areas*
Date Performed	*1/23/03*	Jurisdiction	*District of Columbia*
Time Period	*AM Peak*	Analysis Year	*2003 (Existing)*
		Project ID	*Arthur Capper Project*

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N_1	0	3	0	0	3	0	0	1	0	0	1	0
Lane group		LTR			LTR			LTR			LTR	
Volume, V (vph)	26	480	136	146	750	52	25	10	17	10	38	17
% Heavy vehicles, %HV	0	0	0	0	0	0	0	0	0	0	0	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Pretimed (P) or actuated (A)	P	P	P	P	P	P	P	P	P	P	P	P
Start-up lost time, l_1		2.0			2.0			2.0			2.0	
Extension of effective green, e		2.0			2.0			2.0			2.0	
Arrival type, AT		3			3			3			3	
Unit extension, UE		3.0			3.0			3.0			3.0	
Filtering/metering, I		1.000			1.000			1.000			1.000	
Initial unmet demand, Q_b		0.0			0.0			0.0			0.0	
Ped / Bike / RTOR volumes	0		0	0		0	0		0	0		0
Lane width		12.0			12.0			12.0			12.0	
Parking / Grade / Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking maneuvers, N_m												
Buses stopping, N_B		0			0			0			0	
Min. time for pedestrians, G_p	3.2			3.2			3.2			3.2		

Phasing	EW Perm	02	03	04	NS Perm	06	07	08
Timing	G = 37.0	G =	G =	G =	G = 38.0	G =	G =	G =
	Y = 4	Y =	Y =	Y =	Y = 3	Y =	Y =	Y =

Duration of Analysis, T = 0.25 | Cycle Length, C = 82.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted flow rate, v		713			1053			58			72	
Lane group capacity, c		1973			1655			753			828	
v/c ratio, X		0.36			0.64			0.08			0.09	
Total green ratio, g/C		0.45			0.45			0.46			0.46	

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Uniform delay, d_1		14.8			17.3			12.2			12.3	
Progression factor, PF		1.000			1.000			1.000			1.000	
Delay calibration, k		0.50			0.50			0.50			0.50	
Incremental delay, d_2		0.5			1.9			0.2			0.2	
Initial queue delay, d_3												
Control delay		15.3			19.2			12.4			12.5	
Lane group LOS		B			B			B			B	
Approach delay	15.3			19.2			12.4			12.5		
Approach LOS	B			B			B			B		
Intersection delay	17.3						Intersection LOS			B		

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HCS2000™ DETAILED REPORT

General Information		Site Information	
Analyst	*Alvin Powell*	Intersection	*M St at 3rd St*
Agency or Co.	*ORGA*	Area Type	*All other areas*
Date Performed	*1/23/03*	Jurisdiction	*District of Columbia*
Time Period	*PM Peak*	Analysis Year	
		Project ID	*Arthur Capper Project*

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N_1	*0*	*3*	*0*	*0*	*3*	*0*	*0*	*1*	*0*	*0*	*1*	*0*
Lane group		*LTR*			*LTR*			*LTR*			*LTR*	
Volume, V (vph)	*21*	*842*	*18*	*10*	*572*	*58*	*65*	*47*	*63*	*10*	*9*	*15*
% Heavy vehicles, %HV	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Peak-hour factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Pretimed (P) or actuated (A)	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*
Start-up lost time, l_1		*2.0*			*2.0*			*2.0*			*2.0*	
Extension of effective green, e		*2.0*			*2.0*			*2.0*			*2.0*	
Arrival type, AT		*3*			*3*			*3*			*3*	
Unit extension, UE		*3.0*			*3.0*			*3.0*			*3.0*	
Filtering/metering, I		*1.000*			*1.000*			*1.000*			*1.000*	
Initial unmet demand, Q_b		*0.0*			*0.0*			*0.0*			*0.0*	
Ped / Bike / RTOR volumes	*0*		*0*	*0*		*0*	*0*		*0*	*0*		*0*
Lane width		*12.0*			*12.0*			*12.0*			*12.0*	
Parking / Grade / Parking	*N*	*0*	*N*	*N*	*0*	*N*	*N*	*0*	*N*	*N*	*0*	*N*
Parking maneuvers, N_m												
Buses stopping, N_B		*0*			*0*			*0*			*0*	
Min. time for pedestrians, G_p	*3.2*			*3.2*			*3.2*			*3.2*		

Phasing	EW Perm	02	03	04	NS Perm	06	07	08
Timing	G = *37.0*	G =	G =	G =	G = *38.0*	G =	G =	G =
	Y = *4*	Y =	Y =	Y =	Y = *3*	Y =	Y =	Y =
Duration of Analysis, T = *0.25*					Cycle Length, C = *82.0*			

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted flow rate, v		*979*			*711*			*194*			*38*	
Lane group capacity, c		*2132*			*2129*			*748*			*775*	
v/c ratio, X		*0.46*			*0.33*			*0.26*			*0.05*	
Total green ratio, g/C		*0.45*			*0.45*			*0.46*			*0.46*	

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Uniform delay, d_1		15.6			14.5			13.4			12.1	
Progression factor, PF		1.000			1.000			1.000			1.000	
Delay calibration, k		0.50			0.50			0.50			0.50	
Incremental delay, d_2		0.7			0.4			0.8			0.1	
Initial queue delay, d_3												
Control delay		16.3			15.0			14.3			12.2	
Lane group LOS		B			B			B			B	
Approach delay	16.3			15.0			14.3			12.2		
Approach LOS	B			B			B			B		
Intersection delay	15.5						Intersection LOS			B		

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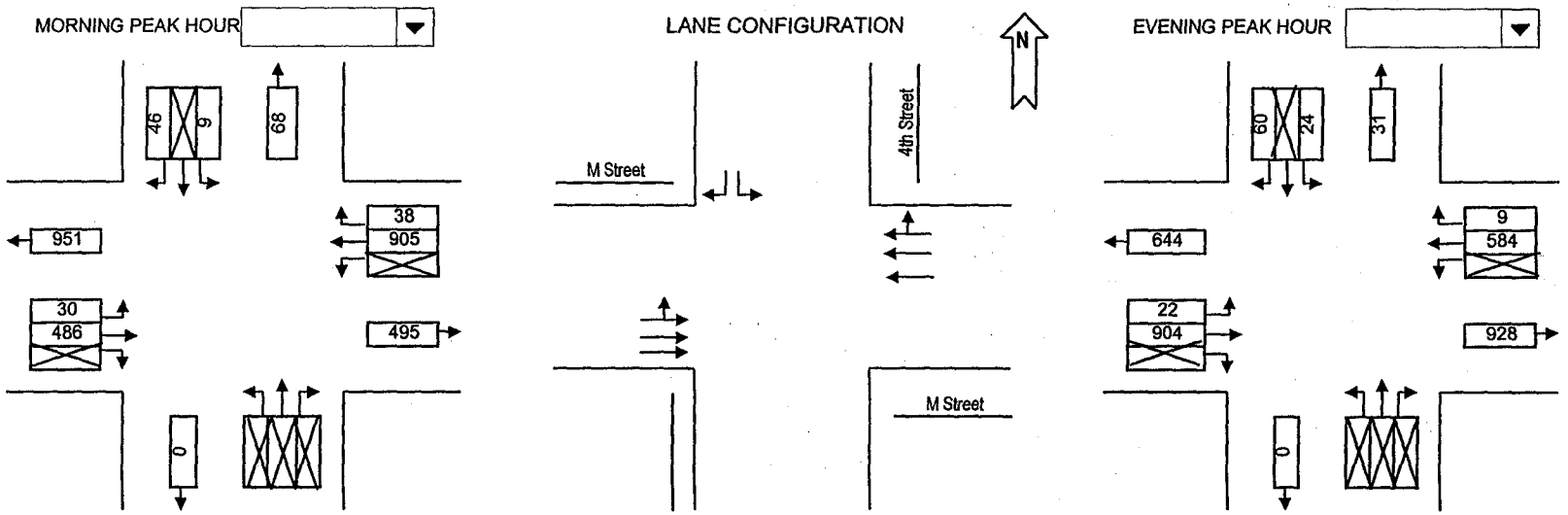
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CRITICAL LANE VOLUME CAPACITY ANALYSIS

ORGA
O.R. George & Associates, Inc

CONDITION: Existing - Weekday
COMPUTED BY: ORGA
DATE: 3/7/03
DESIGN YEAR: 2007
LOCATION: M Street, SE at 4th Street, SE Washington, DC

MORNING PEAK HOUR | LANE CONFIGURATION | EVENING PEAK HOUR



Phasing (ϕ)

Intersection Control: Signal ☐ Stop ☑ Ways ☐

RTOR: NB ☐ SB ☐ EB ☐ WB ☐

Washington D.C.

No. of Lanes	Lane Use Factor
1	= 1.00
2	= 0.55
3	= 0.40
4	= 0.30
Dble. L.T.	= 0.55

Service Levels	Critical Lane Vol. Total
A =	≤ 1,000
B =	1,001 — 1,150
C =	1,151 — 1,300
D =	1,301 — 1,450
E =	1,451 — 1,600
F =	> 1,600

Opposing T+R Volume (Vph)	PCE
≤ 199	1.1
≤ 599	2.0
≤ 799	3.0
≤ 999	4.0
≥ 1000	5.0

ϕ Morning Movement	Right	Thru	PCE	Left	Volume (1)	Lane Factor (2)	Lane Volume (1)X(2)	Oppo-sing Lefts	Critical Lane Volume	
	0	0	0	0	0	0.00	0	0	0	☐
	0	0	0	0	0	0.00	0	0	0	☐
SBL	0	0	0	9	9	1.00	9	0	9	☐
SBR	46-30	0	0	0	16	1.00	16	0	16	☑
EBTL	0	486	4	30	606	0.40	242	0	242	☐
	0	0	0	0	0	0.00	0	0	0	☐
WBTR+EBL	38	905	0	0	943	0.40	377	30	407	☑
	0	0	0	0	0	1.00	0	0	0	☐

Remarks:

☑ Critical Volume — Total CLV: 423 — V/C
V/C = CLV / 1600 — LOS: A — 0.26

ϕ Evening Movement	Right	Thru	PCE	Left	Volume (1)	Lane Factor (2)	Lane Volume (1)X(2)	Oppo-sing Lefts	Critical Lane Volume	
	0	0	0	0	0	0.00	0	0	0	☐
	0	0	0	0	0	0.00	0	0	0	☐
SBL	0	0	0	24	24	1.00	24	0	24	☐
SBR	60-22	0	0	0	38	1.00	38	0	38	☑
EBTL	0	904	2	22	948	0.40	379	0	379	☑
	0	0	0	0	0	0.00	0	0	0	☐
WBTR+EBL	9	584	0	0	593	0.40	237	22	259	☐
	0	0	0	0	0	1.00	0	0	0	☐

Remarks:

☑ Critical Volume — Total CLV: 417 — V/C
V/C = CLV / 1600 — LOS: A — 0.26

01-2

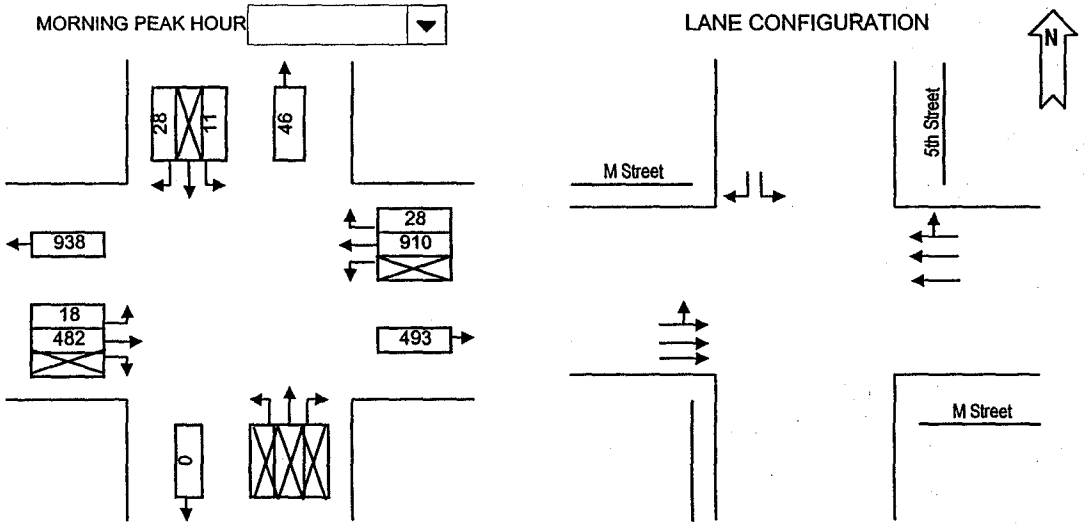
CRITICAL LANE VOLUME CAPACITY ANALYSIS

ORGA
O.R. George & Associates, Inc

CONDITION: Existing - Weekday
COMPUTED BY: ORGA
DATE: 2/13/03
DESIGN YEAR: 2007
LOCATION: M Street, SE at 5th Street, SE Washington, DC

MORNING PEAK HOUR

LANE CONFIGURATION



EVENING PEAK HOUR

Phasing (ϕ)

Intersection Control: Signal ☐ Stop ☑ Ways ☐

RTOR: NB ☐ SB ☐ EB ☐ WB ☐

Washington D.C.

No. of Lanes	Lane Use Factor
1	= 1.00
2	= 0.55
3	= 0.40
4	= 0.30
Dble. L.T.	= 0.55

Service Levels	Critical Lane Vol. Total
A =	⩽ 1,000
B =	1,001 — 1,150
C =	1,151 — 1,300
D =	1,301 — 1,450
E =	1,451 — 1,600
F =	> 1,600

Opposing T+R Volume (Vph)	PCE
⩽ 199	1.1
⩽ 599	2.0
⩽ 799	3.0
⩽ 999	4.0
⩾ 1000	5.0

ϕ	Morning Movement	Right	Thru	PCE	Left	Volume (1)	Lane Factor (2)	Lane Volume (1)X(2)	Oppo-sing Lefts	Critical Lane Volume	
		0	0	0	0	0	0.00	0	0	0	☐
		0	0	0	0	0	0.00	0	0	0	☐
	SBL	0	0	0	11	11	1.00	11	0	11	☑
	SBR	28-18	0	0	0	10	1.00	10	0	10	☐
	EBTL	0	482	4	18	554	0.40	222	0	222	☐
		0	0	0	0	0	0.00	0	0	0	☐
	WBTR+EBL	28	910	0	0	938	0.40	375	18	393	☑
		0	0	0	0	0	1.00	0	0	0	☐

Remarks:

☑ Critical Volume — Total CLV 404 — V/C

V/C = CLV / 1600 — LOS A — 0.25

ϕ	Evening Movement	Right	Thru	PCE	Left	Volume (1)	Lane Factor (2)	Lane Volume (1)X(2)	Oppo-sing Lefts	Critical Lane Volume	
		0	0	0	0	0	0.00	0	0	0	☐
		0	0	0	0	0	0.00	0	0	0	☐
	SBL	0	0	0	13	13	1.00	13	0	13	☑
	SBR	13-43	0	0	0	-30	1.00	-30	0	-30	☐
	EBTL	0	882	3	43	1011	0.40	404	0	404	☑
		0	0	0	0	0	0.00	0	0	0	☐
	WBTR+EBL	53	580	0	0	633	0.40	253	43	296	☐
		0	0	0	0	0	1.00	0	0	0	☐

Remarks:

☑ Critical Volume — Total CLV 417 — V/C

V/C = CLV / 1600 — LOS A — 0.26

C-11

ORGA

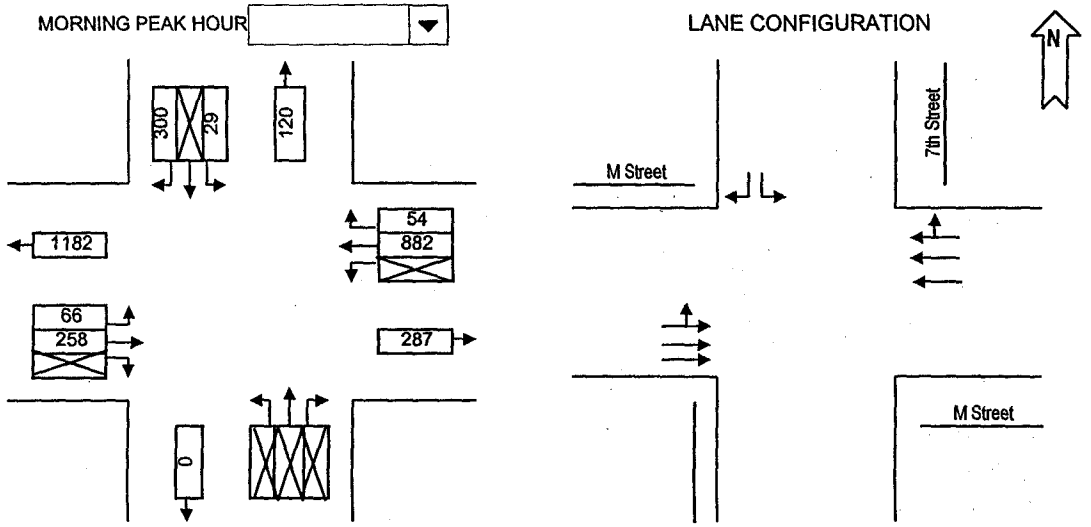
O.R. George & Associates, Inc

CRITICAL LANE VOLUME CAPACITY ANALYSIS

CONDITION: Existing - Weekday
COMPUTED BY: ORGA
DATE: 2/13/03
DESIGN YEAR: 2007
LOCATION: M Street, SE at 7th Street, SE Washington, DC

MORNING PEAK HOUR

LANE CONFIGURATION



EVENING PEAK HOUR

Phasing (ϕ)

Intersection Control: Signal ☐ Stop ☑ Ways ☐

RTOR: NB ☐ SB ☐ EB ☐ WB ☐

Washington D.C.

No. of Lanes	Lane Use Factor
1	= 1.00
2	= 0.55
3	= 0.40
4	= 0.30
Dble. L.T.	= 0.55

Service Levels	Critical Lane Vol. Total
A =	≤ 1,000
B =	1,001 — 1,150
C =	1,151 — 1,300
D =	1,301 — 1,450
E =	1,451 — 1,600
F =	> 1,600

Opposing T+R Volume (Vph)	PCE
≤ 199	1.1
≤ 599	2.0
≤ 799	3.0
≤ 999	4.0
≥ 1000	5.0

ϕ Morning Movement	Right	Thru	PCE	Left	Volume (1)	Lane Factor (2)	Lane Volume (1)X(2)	Oppo-sing Lefts		Critical Lane Volume
	0	0	0	0	0	0.00	0	0	0	☐
	0	0	0	0	0	0.00	0	0	0	☐
SBL	0	0	0	29	29	1.00	29	0	29	☐
SBR	300-66	0	0	0	234	1.00	234	0	234	☑
EBTL	0	258	4	66	522	0.40	209	0	209	☐
	0	0	0	0	0	0.00	0	0	0	☐
WBTR+EBL	54	882	0	0	936	0.40	374	66	440	☑
	0	0	0	0	0	1.00	0	0	0	☐

Remarks:

☑ Critical Volume — Total CLV 674 — V/C

V/C = CLV / 1600 — LOS A — 0.42

ϕ Evening Movement	Right	Thru	PCE	Left	Volume (1)	Lane Factor (2)	Lane Volume (1)X(2)	Oppo-sing Lefts		Critical Lane Volume
	0	0	0	0	0	0.00	0	0	0	☐
	0	0	0	0	0	0.00	0	0	0	☐
SBL	0	0	0	14	14	1.00	14	0	14	☑
SBR	52-244	0	0	0	-192	1.00	-192	0	-192	☐
EBTL	0	917	2	244	1405	0.40	562	0	562	☑
	0	0	0	0	0	0.00	0	0	0	☐
WBTR+EBL	121	406	0	0	527	0.40	211	244	455	☐
	0	0	0	0	0	1.00	0	0	0	☐

Remarks:

☑ Critical Volume — Total CLV 576 — V/C

V/C = CLV / 1600 — LOS A — 0.36

HCS2000™ DETAILED REPORT

General Information		Site Information	
Analyst	*Alvin Powell*	Intersection	*M St at 8th St*
Agency or Co.	*ORGA*	Area Type	*All other areas*
Date Performed	*1/23/03*	Jurisdiction	*District of Columbia*
Time Period	*AM Peak*	Analysis Year	*2003 (Existing)*
		Project ID	*Arthur Capper*

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N_1	*0*	*3*	*0*	*0*	*3*	*0*	*0*	*0*	*0*	*1*	*1*	*1*
Lane group		*T*			*TR*			*LR*		*L*	*LTR*	*R*
Volume, V (vph)		*318*			*762*	*0*	*2*		*1*	*496*	*3*	*154*
% Heavy vehicles, %HV		*0*			*0*	*0*	*0*		*0*	*0*	*0*	*0*
Peak-hour factor, PHF		*0.87*			*0.88*	*0.88*	*0.75*		*0.75*	*0.93*	*0.93*	*0.93*
Pretimed (P) or actuated (A)		*P*			*P*	*P*	*P*		*P*	*P*	*P*	*P*
Start-up lost time, l_1		*2.0*			*2.0*			*2.0*		*2.0*	*2.0*	*2.0*
Extension of effective green, e		*2.0*			*2.0*			*2.0*		*2.0*	*2.0*	*2.0*
Arrival type, AT		*3*			*3*			*3*		*3*	*3*	*3*
Unit extension, UE		*3.0*			*3.0*			*3.0*		*3.0*	*3.0*	*3.0*
Filtering/metering, I		*1.000*			*1.000*			*1.000*		*1.000*	*1.000*	*1.000*
Initial unmet demand, Q_b		*0.0*			*0.0*			*0.0*		*0.0*	*0.0*	*0.0*
Ped / Bike / RTOR volumes				*0*		*0*	*0*		*0*	*0*		*0*
Lane width		*12.0*			*12.0*			*12.0*		*12.0*	*12.0*	*12.0*
Parking / Grade / Parking	*N*	*0*	*N*	*N*	*0*	*N*	*N*	*0*	*N*	*N*	*0*	*N*
Parking maneuvers, N_m												
Buses stopping, N_B		*0*			*0*			*0*		*0*	*0*	*0*
Min. time for pedestrians,				*3.2*			*3.2*			*3.2*		

Phasing	Thru & RT	02	03	04	NS Perm	06	07	08
Timing	G = *36.0*	G =	G =	G =	G = *37.0*	G =	G =	G =
	Y = *3*	Y =	Y =	Y =	Y = *4*	Y =	Y =	Y =
Duration of Analysis, T = *0.25*					Cycle Length, C = *80.0*			

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted flow rate, v		*366*			*866*			*4*		*533*	*3*	*166*
Lane group capacity, c		*2334*			*2334*			*661*		*835*	*879*	*747*
v/c ratio, X		*0.16*			*0.37*			*0.01*		*0.64*	*0.00*	*0.22*
Total green ratio, g/C		*0.45*			*0.45*			*0.46*		*0.46*	*0.46*	*0.46*
Uniform delay, d_1		*13.0*			*14.5*			*11.6*		*16.4*	*11.6*	*12.9*

C-13

Progression factor, PF		1.000			1.000			1.000		1.000	1.000	1.000
Delay calibration, k		0.50			0.50			0.50		0.50	0.50	0.50
Incremental delay, d_2		0.1			0.5			0.0		3.7	0.0	0.7
Initial queue delay, d_3												
Control delay		13.2			15.0			11.6		20.1	11.6	13.6
Lane group LOS		B			B			B		C	B	B
Approach delay	13.2			15.0			11.6			18.5		
Approach LOS	B			B			B			B		
Intersection delay	15.9						Intersection LOS			B		

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HCS2000™ DETAILED REPORT

General Information		Site Information	
Analyst	*Alvin Powell*	Intersection	*M St at 8th St*
Agency or Co.	*ORGA*	Area Type	*All other areas*
Date Performed	*1/23/03*	Jurisdiction	*District of Columbia*
Time Period	*PM Peak*	Analysis Year	*2003 (Existing)*
		Project ID	*Arthur Capper*

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N_1	*0*	*3*	*0*	*0*	*3*	*0*	*0*	*0*	*0*	*1*	*1*	*1*
Lane group		*T*			*TR*			*LR*		*L*	*LTR*	*R*
Volume, V (vph)		*933*			*329*	*0*	*1*		*2*	*264*	*1*	*88*
% Heavy vehicles, %HV		*0*			*0*	*0*	*0*		*0*	*0*	*0*	*0*
Peak-hour factor, PHF		*0.88*			*0.95*	*0.95*	*0.38*		*0.38*	*0.86*	*0.86*	*0.86*
Pretimed (P) or actuated (A)		*P*			*P*	*P*	*P*		*P*	*P*	*P*	*P*
Start-up lost time, l_1		*2.0*			*2.0*			*2.0*		*2.0*	*2.0*	*2.0*
Extension of effective green, e		*2.0*			*2.0*			*2.0*		*2.0*	*2.0*	*2.0*
Arrival type, AT		*3*			*3*			*3*		*3*	*3*	*3*
Unit extension, UE		*3.0*			*3.0*			*3.0*		*3.0*	*3.0*	*3.0*
Filtering/metering, I		*1.000*			*1.000*			*1.000*		*1.000*	*1.000*	*1.000*
Initial unmet demand, Q_b		*0.0*			*0.0*			*0.0*		*0.0*	*0.0*	*0.0*
Ped / Bike / RTOR volumes				*0*		*0*	*0*		*0*	*0*		*0*
Lane width		*12.0*			*12.0*			*12.0*		*12.0*	*12.0*	*12.0*
Parking / Grade / Parking	*N*	*0*	*N*	*N*	*0*	*N*	*N*	*0*	*N*	*N*	*0*	*N*
Parking maneuvers, N_m												
Buses stopping, N_B		*0*			*0*			*0*		*0*	*0*	*0*
Min. time for pedestrians,				*3.2*			*3.2*			*3.2*		

Phasing	Thru & RT	02	03	04	NS Perm	06	07	08
Timing	G = *36.0*	G =	G =	G =	G = *37.0*	G =	G =	G =
	Y = *3*	Y =	Y =	Y =	Y = *4*	Y =	Y =	Y =
Duration of Analysis, T = *0.25*					Cycle Length, C = *80.0*			

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted flow rate, v		*1060*			*346*			*8*		*307*	*1*	*102*
Lane group capacity, c		*2334*			*2334*			*705*		*835*	*879*	*747*
v/c ratio, X		*0.45*			*0.15*			*0.01*		*0.37*	*0.00*	*0.14*
Total green ratio, g/C		*0.45*			*0.45*			*0.46*		*0.46*	*0.46*	*0.46*
Uniform delay, d_1		*15.2*			*13.0*			*11.6*		*13.9*	*11.6*	*12.3*

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HCS2000™ DETAILED REPORT

General Information		Site Information	
Analyst	Alvin Powell	Intersection	Virginia Ave at 8th St
Agency or Co.	ORGA	Area Type	All other areas
Date Performed	1/23/03	Jurisdiction	District of Columbia
Time Period	AM Peak	Analysis Year	2003 (Existing)
		Project ID	Arthur Capper Project

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N_1	0	2	0	0	0	0	0	1	0	1	1	0
Lane group		LTR						TR		L	TR	
Volume, V (vph)	136	18	474					78	9	94	207	0
% Heavy vehicles, %HV	0	0	0					0	0	0	0	0
Peak-hour factor, PHF	0.87	0.87	0.87					0.87	0.87	0.86	0.86	0.86
Pretimed (P) or actuated (A)	P	P	P					P	P	P	P	P
Start-up lost time, l_1		2.0						2.0		2.0	2.0	
Extension of effective green, e		2.0						2.0		2.0	2.0	
Arrival type, AT		3						3		3	3	
Unit extension, UE		3.0						3.0		3.0	3.0	
Filtering/metering, I		1.000						1.000		1.000	1.000	
Initial unmet demand, Q_b		0.0						0.0		0.0	0.0	
Ped / Bike / RTOR volumes	0		0	0			0		0	0		0
Lane width		12.0						12.0		12.0	12.0	
Parking / Grade / Parking	N	0	N	N		N	N	0	N	N	0	N
Parking maneuvers, N_m												
Buses stopping, N_B		0						0		0	0	
Min. time for pedestrians, G_p	3.2			3.2			3.2			3.2		

Phasing	EB Only	02	03	04	NS Perm	06	07	08
Timing	G = 37.0	G =	G =	G =	G = 35.0	G =	G =	G =
	Y = 4	Y =	Y =	Y =	Y = 4	Y =	Y =	Y =
Duration of Analysis, T = 0.25					Cycle Length, C = 80.0			

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted flow rate, v		722						100		109	241	
Lane group capacity, c		1465						820		560	831	
v/c ratio, X		0.49						0.12		0.19	0.29	
Total green ratio, g/C		0.46						0.44		0.44	0.44	
Uniform delay, d_1		15.0						13.4		13.8	14.5	

C-17

Progression factor, PF		1.000						1.000		1.000	1.000	
Delay calibration, k		0.50						0.50		0.50	0.50	
Incremental delay, d_2		1.2						0.3		0.8	0.9	
Initial queue delay, d_3												
Control delay		16.2						13.7		14.6	15.4	
Lane group LOS		B						B		B	B	
Approach delay	16.2						13.7			15.1		
Approach LOS	B						B			B		
Intersection delay	15.6						Intersection LOS			B		

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HCS2000™ DETAILED REPORT

General Information		Site Information	
Analyst	*Alvin Powell*	Intersection	*Virginia Ave at 8th St*
Agency or Co.	*ORGA*	Area Type	*All other areas*
Date Performed	*1/23/03*	Jurisdiction	*District of Columbia*
Time Period	*PM Peak*	Analysis Year	*2003 (Existing)*
		Project ID	*Arthur Capper Project*

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N_1	*0*	*2*	*0*	*0*	*0*	*0*	*0*	*1*	*0*	*1*	*1*	*0*
Lane group		*LTR*						*TR*		*L*	*TR*	
Volume, V (vph)	*511*	*14*	*174*					*157*	*44*	*352*	*185*	*0*
% Heavy vehicles, %HV	*0*	*0*	*0*					*0*	*0*	*0*	*0*	*0*
Peak-hour factor, PHF	*0.85*	*0.85*	*0.85*					*0.74*	*0.74*	*0.97*	*0.97*	*0.97*
Pretimed (P) or actuated (A)	*P*	*P*	*P*					*P*	*P*	*P*	*P*	*P*
Start-up lost time, l_1		*2.0*						*2.0*		*2.0*	*2.0*	
Extension of effective green, e		*2.0*						*2.0*		*2.0*	*2.0*	
Arrival type, AT		*3*						*3*		*3*	*3*	
Unit extension, UE		*3.0*						*3.0*		*3.0*	*3.0*	
Filtering/metering, I		*1.000*						*1.000*		*1.000*	*1.000*	
Initial unmet demand, Q_b		*0.0*						*0.0*		*0.0*	*0.0*	
Ped / Bike / RTOR volumes	*0*		*0*	*0*			*0*		*0*	*0*		*0*
Lane width		*12.0*						*12.0*		*12.0*	*12.0*	
Parking / Grade / Parking	*N*	*0*	*N*	*N*		*N*	*N*	*0*	*N*	*N*	*0*	*N*
Parking maneuvers, N_m												
Buses stopping, N_B		*0*						*0*		*0*	*0*	
Min. time for pedestrians, G_p	*3.2*			*3.2*			*3.2*			*3.2*		

Phasing	EB Only	02	03	04	NS Perm	06	07	08
Timing	G = *37.0*	G =	G =	G =	G = *35.0*	G =	G =	G =
	Y = *4*	Y =	Y =	Y =	Y = *4*	Y =	Y =	Y =

Duration of Analysis, T = *0.25* | Cycle Length, C = *80.0*

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted flow rate, v		*822*						*271*		*363*	*191*	
Lane group capacity, c		*1550*						*807*		*400*	*831*	
v/c ratio, X		*0.53*						*0.34*		*0.91*	*0.23*	
Total green ratio, g/C		*0.46*						*0.44*		*0.44*	*0.44*	
Uniform delay, d_1		*15.3*						*14.8*		*21.0*	*14.1*	

C-19

Progression factor, PF		1.000						1.000		1.000	1.000	
Delay calibration, k		0.50						0.50		0.50	0.50	
Incremental delay, d_2		1.3						1.1		26.8	0.6	
Initial queue delay, d_3												
Control delay		16.6						16.0		47.8	14.7	
Lane group LOS		B						B		D	B	
Approach delay	16.6						16.0			36.4		
Approach LOS	B						B			D		
Intersection delay	23.2						Intersection LOS			C		

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HCS2000™ DETAILED REPORT

General Information		Site Information	
Analyst	*Alvin Powell*	Intersection	*Virginia Ave at 7th St*
Agency or Co.	*ORGA*	Area Type	*All other areas*
Date Performed	*1/23/03*	Jurisdiction	*District of Columbia*
Time Period	*AM Peak*	Analysis Year	*2003 (Existing)*
		Project ID	*Arthur Capper*

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N_1	*0*	*3*	*0*	*0*	*0*	*0*	*0*	*1*	*0*	*0*	*1*	*0*
Lane group		*LTR*						*TR*			*LT*	
Volume, V (vph)	*77*	*497*	*358*					*56*	*24*	*13*	*34*	
% Heavy vehicles, %HV	*0*	*0*	*0*					*0*	*0*	*0*	*0*	
Peak-hour factor, PHF	*0.84*	*0.84*	*0.84*					*0.80*	*0.80*	*0.73*	*0.73*	
Pretimed (P) or actuated (A)	*P*	*P*	*P*					*P*	*P*	*P*	*P*	
Start-up lost time, l_1		*2.0*						*2.0*			*2.0*	
Extension of effective green, e		*2.0*						*2.0*			*2.0*	
Arrival type, AT		*3*						*3*			*3*	
Unit extension, UE		*3.0*						*3.0*			*3.0*	
Filtering/metering, I		*1.000*						*1.000*			*1.000*	
Initial unmet demand, Q_b		*0.0*						*0.0*			*0.0*	
Ped / Bike / RTOR volumes	*0*		*0*	*0*			*0*		*0*			
Lane width		*12.0*						*12.0*			*12.0*	
Parking / Grade / Parking	*N*	*0*	*N*	*N*		*N*	*N*	*0*	*N*	*N*	*0*	*N*
Parking maneuvers, N_m												
Buses stopping, N_B		*0*						*0*			*0*	
Min. time for pedestrians, G_p	*3.2*			*3.2*			*3.2*					

Phasing	EB Only	02	03	04	NS Perm	06	07	08
Timing	G = *37.0*	G =	G =	G =	G = *36.0*	G =	G =	G =
	Y = *4*	Y =	Y =	Y =	Y = *3*	Y =	Y =	Y =
Duration of Analysis, T = *0.25*						Cycle Length, C = *80.0*		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted flow rate, v		*1110*						*100*			*65*	
Lane group capacity, c		*2251*						*820*			*804*	
v/c ratio, X		*0.49*						*0.12*			*0.08*	
Total green ratio, g/C		*0.46*						*0.45*			*0.45*	
Uniform delay, d_1		*15.0*						*12.8*			*12.6*	

C-21

Progression factor, PF		1.000						1.000			1.000	
Delay calibration, k		0.50						0.50			0.50	
Incremental delay, d_2		0.8						0.3			0.2	
Initial queue delay, d_3												
Control delay		15.7						13.1			12.8	
Lane group LOS		B						B			B	
Approach delay	15.7						13.1			12.8		
Approach LOS	B						B			B		
Intersection delay	15.4						Intersection LOS			B		

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HCS2000™ DETAILED REPORT

General Information		Site Information	
Analyst	*Alvin Powell*	Intersection	*Virginia Ave at 7th St*
Agency or Co.	*ORGA*	Area Type	*All other areas*
Date Performed	*1/23/03*	Jurisdiction	*District of Columbia*
Time Period	*PM Peak*	Analysis Year	*2003 (Existing)*
		Project ID	*Arthur Capper*

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N_1	*0*	*3*	*0*	*0*	*0*	*0*	*0*	*1*	*0*	*0*	*1*	*0*
Lane group		*LTR*						*TR*			*LT*	
Volume, V (vph)	*98*	*566*	*51*					*305*	*49*	*13*	*27*	
% Heavy vehicles, %HV	*0*	*0*	*0*					*0*	*0*	*0*	*0*	
Peak-hour factor, PHF	*0.84*	*0.84*	*0.84*					*0.80*	*0.80*	*0.73*	*0.73*	
Pretimed (P) or actuated (A)	*P*	*P*	*P*					*P*	*P*	*P*	*P*	
Start-up lost time, l_1		*2.0*						*2.0*			*2.0*	
Extension of effective green, e		*2.0*						*2.0*			*2.0*	
Arrival type, AT		*3*						*3*			*3*	
Unit extension, UE		*3.0*						*3.0*			*3.0*	
Filtering/metering, I		*1.000*						*1.000*			*1.000*	
Initial unmet demand, Q_b		*0.0*						*0.0*			*0.0*	
Ped / Bike / RTOR volumes	*0*		*0*	*0*			*0*		*0*			
Lane width		*12.0*						*12.0*			*12.0*	
Parking / Grade / Parking	*N*	*0*	*N*	*N*		*N*	*N*	*0*	*N*	*N*	*0*	*N*
Parking maneuvers, N_m												
Buses stopping, N_B		*0*						*0*			*0*	
Min. time for pedestrians, G_p		*3.2*			*3.2*			*3.2*				

Phasing	EB Only	02	03	04	NS Perm	06	07	08
Timing	G = *37.0*	G =	G =	G =	G = *36.0*	G =	G =	G =
	Y = *4*	Y =	Y =	Y =	Y = *3*	Y =	Y =	Y =
Duration of Analysis, T = *0.25*						Cycle Length, C = *80.0*		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted flow rate, v		*852*						*442*			*55*	
Lane group capacity, c		*2357*						*839*			*744*	
v/c ratio, X		*0.36*						*0.53*			*0.07*	
Total green ratio, g/C		*0.46*						*0.45*			*0.45*	
Uniform delay, d_1		*13.9*						*15.9*			*12.5*	

C-23

Progression factor, PF		1.000						1.000			1.000	
Delay calibration, k		0.50						0.50			0.50	
Incremental delay, d_2		0.4						2.4			0.2	
Initial queue delay, d_3												
Control delay		14.3						18.2			12.7	
Lane group LOS		B						B			B	
Approach delay	14.3						18.2			12.7		
Approach LOS	B						B			B		
Intersection delay	15.5						Intersection LOS			B		

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HCS2000™ DETAILED REPORT

General Information		Site Information	
Analyst	*Alvin Powell*	Intersection	*Virginia Ave at 5th St*
Agency or Co.	*ORGA*	Area Type	*All other areas*
Date Performed	*1/23/03*	Jurisdiction	*District of Columbia*
Time Period	*AM Peak*	Analysis Year	*2003 (Existing)*
		Project ID	*Arthur Capper Project*

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N_1	*0*	*2*	*0*	*0*	*0*	*0*	*0*	*1*	*0*	*0*	*2*	*0*
Lane group		*LT*						*TR*			*LT*	
Volume, V (vph)	*6*	*40*						*18*	*32*	*194*	*984*	
% Heavy vehicles, %HV	*0*	*0*						*0*	*0*	*0*	*0*	
Peak-hour factor, PHF	*0.77*	*0.77*						*0.83*	*0.83*	*0.90*	*0.90*	
Pretimed (P) or actuated (A)	*P*	*P*						*P*	*P*	*P*	*P*	
Start-up lost time, l_1		*2.0*						*2.0*			*2.0*	
Extension of effective green, e		*2.0*						*2.0*			*2.0*	
Arrival type, AT		*3*						*3*			*3*	
Unit extension, UE		*3.0*						*3.0*			*3.0*	
Filtering/metering, I		*1.000*						*1.000*			*1.000*	
Initial unmet demand, Q_b		*0.0*						*0.0*			*0.0*	
Ped / Bike / RTOR volumes				*0*			*0*		*0*			
Lane width		*12.0*						*12.0*			*12.0*	
Parking / Grade / Parking	*N*	*0*	*N*	*N*		*N*	*N*	*0*	*N*	*N*	*0*	*N*
Parking maneuvers, N_m												
Buses stopping, N_B		*0*						*0*			*0*	
Min. time for pedestrians, G_p				*3.2*			*3.2*					

Phasing	EB Only	02	03	04	NB Only	SB Only	07	08
Timing	G = *15.0*	G =	G =	G =	G = *15.0*	G = *40.0*	G =	G =
	Y = *4*	Y =	Y =	Y =	Y = *3*	Y = *3*	Y =	Y =
Duration of Analysis, T = *0.25*						Cycle Length, C = *80.0*		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted flow rate, v		*60*						*61*			*1309*	
Lane group capacity, c		*672*						*326*			*1790*	
v/c ratio, X		*0.09*						*0.19*			*0.73*	
Total green ratio, g/C		*0.19*						*0.19*			*0.50*	
Uniform delay, d_1		*26.9*						*27.4*			*15.8*	

C-25

Progression factor, PF		1.000						1.000			1.000	
Delay calibration, k		0.50						0.50			0.50	
Incremental delay, d_2		0.3						1.3			2.7	
Initial queue delay, d_3												
Control delay		27.1						28.6			18.4	
Lane group LOS		C						C			B	
Approach delay	27.1						28.6			18.4		
Approach LOS	C						C			B		
Intersection delay	19.2						Intersection LOS			B		

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HCS2000™ DETAILED REPORT

General Information		Site Information	
Analyst	*Alvin Powell*	Intersection	*Virginia Ave at 5th St*
Agency or Co.	*ORGA*	Area Type	*All other areas*
Date Performed	*1/23/03*	Jurisdiction	*District of Columbia*
Time Period	*PM Peak*	Analysis Year	*2003 (Existing)*
		Project ID	*Arthur Capper Project*

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N_1	*0*	*2*	*0*	*0*	*0*	*0*	*0*	*1*	*0*	*0*	*2*	*0*
Lane group		*LT*						*TR*			*LT*	
Volume, V (vph)	*36*	*202*						*54*	*54*	*140*	*475*	
% Heavy vehicles, %HV	*0*	*0*						*0*	*0*	*0*	*0*	
Peak-hour factor, PHF	*0.84*	*0.92*						*0.69*	*0.69*	*0.90*	*0.90*	
Pretimed (P) or actuated (A)	*P*	*P*						*P*	*P*	*P*	*P*	
Start-up lost time, l_1		*2.0*						*2.0*			*2.0*	
Extension of effective green, e		*2.0*						*2.0*			*2.0*	
Arrival type, AT		*3*						*3*			*3*	
Unit extension, UE		*3.0*						*3.0*			*3.0*	
Filtering/metering, I		*1.000*						*1.000*			*1.000*	
Initial unmet demand, Q_b		*0.0*						*0.0*			*0.0*	
Ped / Bike / RTOR volumes				*0*			*0*		*0*			
Lane width		*12.0*						*12.0*			*12.0*	
Parking / Grade / Parking	*N*	*0*	*N*	*N*		*N*	*N*	*0*	*N*	*N*	*0*	*N*
Parking maneuvers, N_m												
Buses stopping, N_B		*0*						*0*			*0*	
Min. time for pedestrians, G_p				*3.2*			*3.2*					

Phasing	EB Only	02	03	04	NB Only	SB Only	07	08
Timing	G = *18.0*	G =	G =	G =	G = *26.0*	G = *26.0*	G =	G =
	Y = *4*	Y =	Y =	Y =	Y = *3*	Y = *3*	Y =	Y =
Duration of Analysis, T = *0.25*						Cycle Length, C = *80.0*		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted flow rate, v		*263*						*156*			*684*	
Lane group capacity, c		*806*						*576*			*1160*	
v/c ratio, X		*0.33*						*0.27*			*0.59*	
Total green ratio, g/C		*0.22*						*0.32*			*0.32*	
Uniform delay, d_1		*25.9*						*20.0*			*22.5*	

C-27

Progression factor, PF		1.000						1.000			1.000	
Delay calibration, k		0.50						0.50			0.50	
Incremental delay, d_2		1.1						1.2			2.2	
Initial queue delay, d_3												
Control delay		27.0						21.1			24.7	
Lane group LOS		C						C			C	
Approach delay	27.0						21.1			24.7		
Approach LOS	C						C			C		
Intersection delay	24.8						Intersection LOS			C		

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*Alvin Powell*
Agency/Co.	*ORGA*
Date Performed	*1/23/03*
Analysis Time Period	*AM Peak*

Site Information

Intersection	*Virginia Ave at 4th St*
Jurisdiction	*District of Columbia*
Analysis Year	*2003 (Existing)*

Project ID *Arthur Capper Project*

East/West Street: *Virginia Avenue, S.E.* North/South Street: *4th Street, S.E.*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume	0	16	0	0	0	0
%Thrus Left Lane	50			50		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume	9	0	4	16	135	13
%Thrus Left Lane	50			50		

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	TR				LR		L	TR
PHF	0.57				0.65		0.87	0.87
Flow Rate	28				19		18	169
% Heavy Vehicles	0				0		0	0
No. Lanes	1		0		1		2	
Geometry Group	1				3a		5	
Duration, T	0.25							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	0.0				0.7		1.0	0.0
Prop. Right-Turns	0.0				0.3		0.0	0.1
Prop. Heavy Vehicle	0.0				0.0		0.0	0.0
hLT-adj	0.2	0.2			0.2	0.2	0.5	0.5
hRT-adj	-0.6	-0.6			-0.6	-0.6	-0.7	-0.7
hHV-adj	1.7	1.7			1.7	1.7	1.7	1.7
hadj, computed	4.37				4.37		4.37	4.37

Departure Headway and Service Time

hd, initial value	3.20				3.20		3.20	3.20
x, initial	0.02				0.02		0.02	0.15
hd, final value	4.37				4.37		4.37	4.37
x, final value	0.03				0.02		0.03	0.21
Move-up time, m	2.0				2.0		2.3	
Service Time	2.4		2.4		2.4		2.4	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity	278				269		268	419
Delay	7.52				7.30		7.91	8.44
LOS	A				A		A	A
Approach: Delay	7.52				7.30		8.39	
LOS	A				A		A	
Intersection Delay	8.19							
Intersection LOS	A							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*Alvin Powell*
Agency/Co.	*ORGA*
Date Performed	*1/23/03*
Analysis Time Period	*PM Peak*

Site Information

Intersection	*Virginia Ave at 4th St*
Jurisdiction	*District of Columbia*
Analysis Year	*2003 (Existing)*

Project ID *Arthur Capper Project*

East/West Street: *Virginia Avenue, S.E.* North/South Street: *4th Street, S.E.*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume	*0*	*93*	*4*	*0*	*0*	*0*
%Thrus Left Lane	*50*			*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume	*11*	*0*	*12*	*71*	*89*	*9*
%Thrus Left Lane	*50*			*50*		

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*TR*				*LR*		*L*	*TR*
PHF	*0.84*				*0.72*		*0.86*	*0.86*
Flow Rate	*114*				*31*		*82*	113
% Heavy Vehicles	*0*				*0*		*0*	*0*
No. Lanes	*1*		*0*		*1*		*2*	
Geometry Group	*1*				*3a*		*5*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.0*				*0.5*		*1.0*	*0.0*
Prop. Right-Turns	*0.0*				*0.5*		*0.0*	*0.1*
Prop. Heavy Vehicle	*0.0*				*0.0*		*0.0*	*0.0*
hLT-adj	*0.2*	*0.2*			*0.2*	*0.2*	*0.5*	*0.5*
hRT-adj	*-0.6*	*-0.6*			*-0.6*	*-0.6*	*-0.7*	*-0.7*
hHV-adj	*1.7*	*1.7*			*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*4.41*				*4.41*		*4.41*	*4.41*

Departure Headway and Service Time

hd, initial value	*3.20*				*3.20*		*3.20*	*3.20*
x, initial	*0.10*				*0.03*		*0.07*	*0.10*
hd, final value	*4.41*				*4.41*		*4.41*	*4.41*
x, final value	*0.14*				*0.04*		*0.12*	*0.15*
Move-up time, m	*2.0*				*2.0*		*2.3*	
Service Time	*2.4*		*2.4*		*2.4*		*2.4*	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity	*364*				*281*		*332*	*363*
Delay	*8.13*				*7.45*		*8.73*	*8.26*
LOS	*A*				*A*		*A*	*A*
Approach: Delay	*8.13*				*7.45*		*8.46*	
LOS	*A*				*A*		*A*	
Intersection Delay	*8.25*							
Intersection LOS	*A*							

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Alvin Powell*	Intersection	*Virginia Ave at 3rd St*
Agency/Co.	*ORGA*	Jurisdiction	*District of Columbia*
Date Performed	*1/23/03*	Analysis Year	*2003 (Existing)*
Analysis Time Period	*AM Peak*		
Project Description	*Arthur Capper Project*		
East/West Street:	*Virginia Avenue, S.E.*	North/South Street:	*3rd Street, S.E.*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*9*	*173*	*128*	*84*	*170*	*15*
Peak-Hour Factor, PHF	*0.82*	*0.82*	*0.82*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*10*	*210*	*156*	*93*	*188*	*16*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LTR*			*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*5*	*9*	*6*	*3*	*10*	*55*
Peak-Hour Factor, PHF	*0.63*	*0.63*	*0.63*	*0.71*	*0.71*	*0.71*
Hourly Flow Rate, HFR	*7*	*14*	*9*	*4*	*14*	*77*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*	*LTR*		*LTR*			*LTR*	
v (vph)	*10*	*93*		*30*			*95*	
C (m) (vph)	*1380*	*1204*		*377*			*635*	
v/c	*0.01*	*0.08*		*0.08*			*0.15*	
95% queue length	*0.02*	*0.25*		*0.26*			*0.52*	
Control Delay	*7.6*	*8.2*		*15.4*			*11.7*	
LOS	*A*	*A*		*C*			*B*	
Approach Delay	--	--	*15.4*			*11.7*		
Approach LOS	--	--	*C*			*B*		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Alvin Powell*	Intersection	*Virginia Ave at 3rd St*
Agency/Co.	*ORGA*	Jurisdiction	*District of Columbia*
Date Performed	*1/23/03*	Analysis Year	*2003 (Existing)*
Analysis Time Period	*PM Peak*		
Project Description	*Arthur Capper Project*		
East/West Street:	*Virginia Avenue, S.E.*	North/South Street:	*3rd Street, S.E.*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*8*	*151*	*19*	*40*	*34*	*5*
Peak-Hour Factor, PHF	*0.94*	*0.94*	*0.94*	*0.73*	*0.73*	*0.73*
Hourly Flow Rate, HFR	*8*	*160*	*20*	*54*	*46*	*6*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LTR*			*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*4*	*3*	*16*	*33*	*18*	*1*
Peak-Hour Factor, PHF	*0.82*	*0.82*	*0.82*	*0.72*	*0.72*	*0.72*
Hourly Flow Rate, HFR	*4*	*3*	*19*	*45*	*24*	*1*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*	*LTR*		*LTR*			*LTR*	
v (vph)	*8*	*54*		*26*			*70*	
C (m) (vph)	*1567*	*1408*		*761*			*566*	
v/c	*0.01*	*0.04*		*0.03*			*0.12*	
95% queue length	*0.02*	*0.12*		*0.11*			*0.42*	
Control Delay	*7.3*	*7.7*		*9.9*			*12.3*	
LOS	*A*	*A*		*A*			*B*	
Approach Delay	--	--	*9.9*			*12.3*		
Approach LOS	--	--	*A*			*B*		

>

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Version 4.1c

C-32

APPENDIX

D

ACCIDENT DATA RECORDS –
STUDY AREA ROADWAY NETWORK

January 21, 2003

TO: Cullen Ellas
Traffic Engineer

FROM: Yusuf Aden
Traffic Engineer

SUBJECT: Accident Report

Attached is the Accident Report that you requested. There is no accident data exist on the following locations.

1. M St @ New Jersey Ave, SE
2. M St @ 3rd St, SE
3. M St @ 5th St, SE
4. M St @ 6th St, SE
5. M St @ 7th St, SE
6. M St @ 8th St, SE
7. K St @ New Jersey Ave, SE
8. Virginia Ave @ New Jersey Ave, SE

Thank you.

D-1

Jan 21 03 10:14a

DCDPW: Accident Summary Report (R-4)

Date:
Prepared By:

Location: Quadrant:

M ST And **3RD ST** **SE**

Summary for the time period of: **1/1/1999** To: **12/31/2001**

Total Number of Accident 12

Total Number of Injuries 3

Contributing Factors:

Driver:		Vehicle:		Roadway:		Unknown:	
6	50.00%	0	0.00%	1	8.33%	4	33.33%

Collision Types:

Right Angle:	Left Turn:	Right Turn:	Rear End:	Side Swiped:	Head On:	Parked
2	1	0	4	2	0	3

Fixed Object	Ran Off Road:	Pedestrian:	Backing	Non Collision:	Other:
0	0	0	0	0	0

Accident Times:

Time	Number	Percent
07:30-09:30	1	8.33%
09:30-11:30	0	0.00%
11:30-13:30	0	0.00%
13:30-16:00	1	8.33%
16:00-18:30	1	8.33%
18:30-07:30	9	75.00%
Weekday:	6	50.00%
Weekend:	6	50.00%

D-2

Jan 21 03 10:14a

DCDPW: Accident Summary Report (R-4)

Date:

Prepared By:

Location: Quadrant:

M ST And **4TH ST** **SE**

Summary for the time period of: **1/1/1999** To: **12/31/2001**

Total Number of Accident **9**

Total Number of Injuries **3**

Contributing Factors:

Driver:		Vehicle:		Roadway:		Unknown:	
5	55.56%	0	0.00%	0	0.00%	3	33.33%

Collision Types:

Right Angle:	Left Turn:	Right Turn:	Rear End:	Side Swiped:	Head On:	Parked
0	0	0	3	2	1	2

Fixed Object	Ran Off Road:	Pedestrian:	Backing	Non Collision:	Other:
1	0	0	0	0	0

Accident Times:

Time	Number	Percent
07:30-09:30	1	11.11%
09:30-11:30	1	11.11%
11:30-13:30	1	11.11%
13:30-16:00	1	11.11%
16:00-18:30	3	33.33%
18:30-07:30	2	22.22%
Weekday:	6	66.67%
Weekend:	3	33.33%

D-3

Jan 21 03 10:15a

DCDPW: Accident Summary Report (R-4)

Date:

Prepared By:

Location: Quadrant:

VIRGINIA AVE And **3RD ST** **SE**

Summary for the time period of: **1/1/1999** To: **12/31/2001**

Total Number of Accident **7**

Total Number of Injuries **4**

Contributing Factors:

Driver:		Vehicle:		Roadway:		Unknown:	
4	57.14%	0	0.00%	2	28.57%	1	14.29%

Collision Types:

Right Angle:	Left Turn:	Right Turn:	Rear End:	Side Swiped:	Head On:	Parked
0	0	0	0	1	0	3

Fixed Object	Ran Off Road:	Pedestrian:	Backing	Non Collision:	Other:
0	0	1	0	0	1

Accident Times:

Time	Number	Percent
07:30-09:30	2	28.57%
09:30-11:30	1	14.29%
11:30-13:30	2	28.57%
13:30-16:00	2	28.57%
16:00-18:30	0	0.00%
18:30-07:30	0	0.00%
Weekday:	7	100.00%
Weekend:	0	0.00%

D-4

Jan 21 03 10:15a

DCDPW: Accident Summary Report (R-4)

Date:

Prepared By:

Location: Quadrant:

VIRGINIA AVE And **4TH ST** **SE**

Summary for the time period of: **1/1/1999** To: **12/31/2001**

Total Number of Accident **5**

Total Number of Injuries **1**

Contributing Factors:

Driver:		Vehicle:		Roadway:		Unknown:	
2	40.00%	0	0.00%	0	0.00%	3	60.00%

Collision Types:

Right Angle:	Left Turn:	Right Turn:	Rear End:	Side Swiped:	Head On:	Parked
0	0	0	0	0	0	3

Fixed Object	Ran Off Road:	Pedestrian:	Backing	Non Collision:	Other:
0	0	0	0	0	1

Accident Times:

Time	Number	Percent
07:30-09:30	1	20.00%
09:30-11:30	2	40.00%
11:30-13:30	1	20.00%
13:30-16:00	0	0.00%
16:00-18:30	0	0.00%
18:30-07:30	1	20.00%
Weekday:	3	60.00%
Weekend:	2	40.00%

D-5

Jan 21 03 10:15a

DCDPW: Accident Summary Report (R-4)

Date:
Prepared By:

Location: Quadrant:

VIRGINIA AVE And **5TH ST** **SE**

Summary for the time period of: **1/1/1999** To: **12/31/2001**

Total Number of Accident **5**

Total Number of Injuries **3**

Contributing Factors:

Driver:		Vehicle:		Roadway:		Unknown:	
0	0.00%	0	0.00%	1	20.00%	4	80.00%

Collision Types:

Right Angle:	Left Turn:	Right Turn:	Rear End:	Side Swiped:	Head On:	Parked
3	0	0	1	0	0	1

Fixed Object	Ran Off Road:	Pedestrian:	Backing	Non Collision:	Other:
0	0	0	0	0	0

Accident Times:

Time	Number	Percent
07:30-09:30	1	20.00%
09:30-11:30	1	20.00%
11:30-13:30	0	0.00%
13:30-16:00	1	20.00%
16:00-18:30	0	0.00%
18:30-07:30	2	40.00%
Weekday:	5	100.00%
Weekend:	0	0.00%

D-6

Jan 21 03 10:15a

DCDPW: Accident Summary Report (R-4)

Date:
Prepared By:

Location: Quadrant:

VIRGINIA AVE And **6TH ST** **SE**

Summary for the time period of: **1/1/1999** To: **12/31/2001**

Total Number of Accident **4**

Total Number of Injuries **0**

Contributing Factors:

Driver:		Vehicle:		Roadway:		Unknown:	
2	50.00%	0	0.00%	0	0.00%	1	25.00%

Collision Types:

Right Angle:	Left Turn:	Right Turn:	Rear End:	Side Swiped:	Head On:	Parked
1	0	0	0	1	0	1

Fixed Object	Ran Off Road:	Pedestrian:	Backing	Non Collision:	Other:
0	0	0	0	0	0

Accident Times:

Time	Number	Percent
07:30-09:30	0	0.00%
09:30-11:30	0	0.00%
11:30-13:30	1	25.00%
13:30-16:00	2	50.00%
16:00-18:30	0	0.00%
18:30-07:30	1	25.00%
Weekday:	3	75.00%
Weekend:	1	25.00%

D-7

Jan 21 03 10:15a

DCDPW: Accident Summary Report (R-4)

Date:
Prepared By:

Location: Quadrant:

VIRGINIA AVE And **7TH ST** **SE**

Summary for the time period of: **1/1/1999** To: **12/31/2001**

Total Number of Accident **1**

Total Number of Injuries **0**

Contributing Factors:

Driver:		Vehicle:		Roadway:		Unknown:	
1	100.00%	0	0.00%	0	0.00%	0	0.00%

Collision Types:

Right Angle:	Left Turn:	Right Turn:	Rear End:	Side Swiped:	Head On:	Parked
0	0	0	0	1	0	0

Fixed Object	Ran Off Road:	Pedestrian:	Backing	Non Collision:	Other:
0	0	0	0	0	0

Accident Times:

Time	Number	Percent
07:30-09:30	0	0.00%
09:30-11:30	0	0.00%
11:30-13:30	0	0.00%
13:30-16:00	0	0.00%
16:00-18:30	0	0.00%
18:30-07:30	1	100.00%
Weekday:	1	100.00%
Weekend:	0	0.00%

D-8

p.8

Jan 21 03 10:16a

DCDPW: Accident Summary Report (R-4)

Date:

Prepared By:

Location: Quadrant:

VIRGINIA AVE And **8TH ST** **SE**

Summary for the time period of: **1/1/1999** To: **12/31/2001**

Total Number of Accident **15**

Total Number of Injuries **12**

Contributing Factors:

Driver:		Vehicle:		Roadway:		Unknown:	
3	20.00%	0	0.00%	5	33.33%	7	46.67%

Collision Types:

Right Angle:	Left Turn:	Right Turn:	Rear End:	Side Swiped:	Head On:	Parked
10	1	1	3	0	0	0

Fixed Object	Ran Off Road:	Pedestrian:	Backing	Non Collision:	Other:
0	0	0	0	0	0

Accident Times:

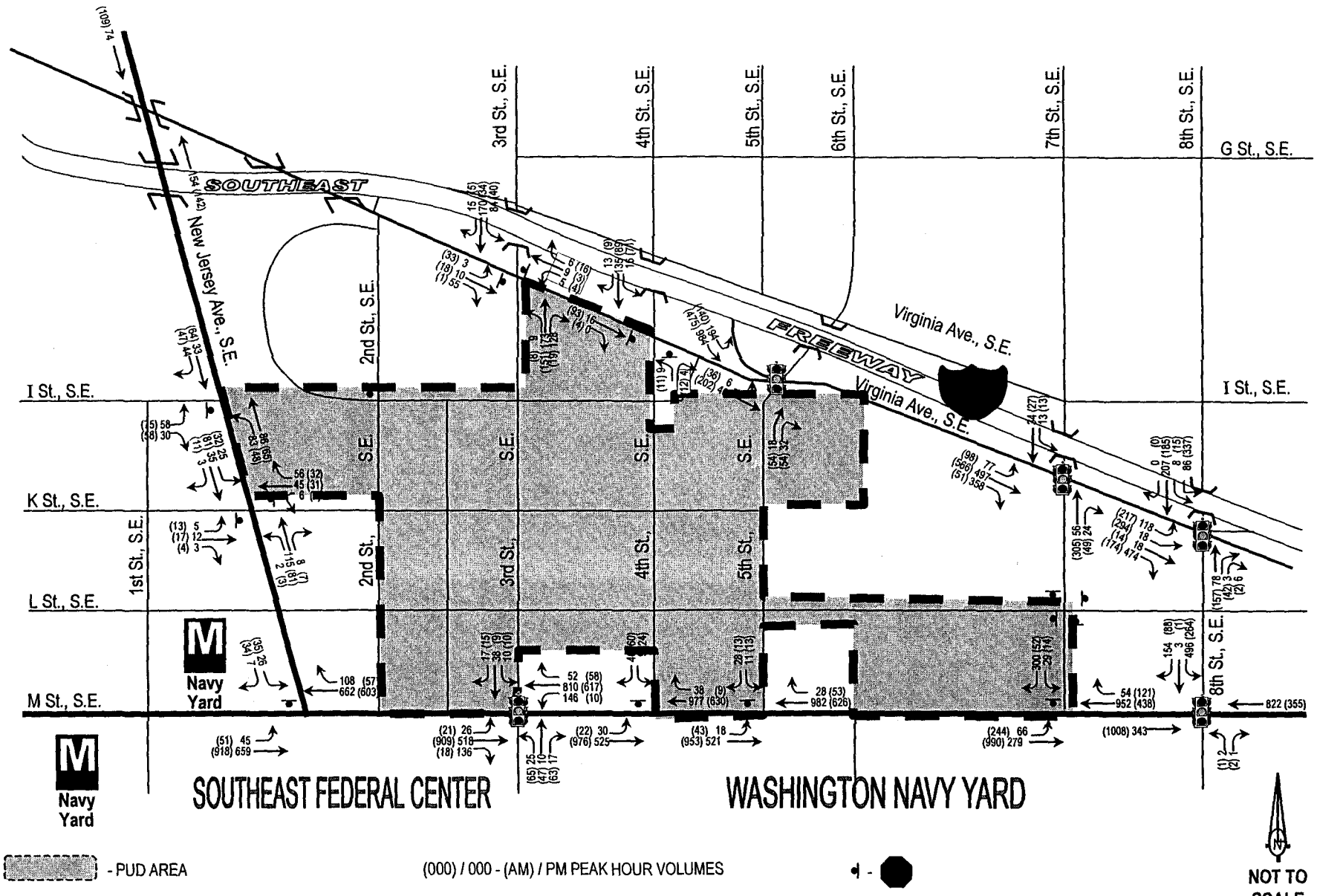
Time	Number	Percent
07:30-09:30	2	13.33%
09:30-11:30	0	0.00%
11:30-13:30	2	13.33%
13:30-16:00	2	13.33%
16:00-18:30	3	20.00%
18:30-07:30	6	40.00%
Weekday:	9	60.00%
Weekend:	6	40.00%

D-9

APPENDIX

E

YEAR 2007
BASE TRAFFIC SITUATION



O. R. GEORGE & ASSOCIATES, INC.
Traffic Engineers – Transportation Planners

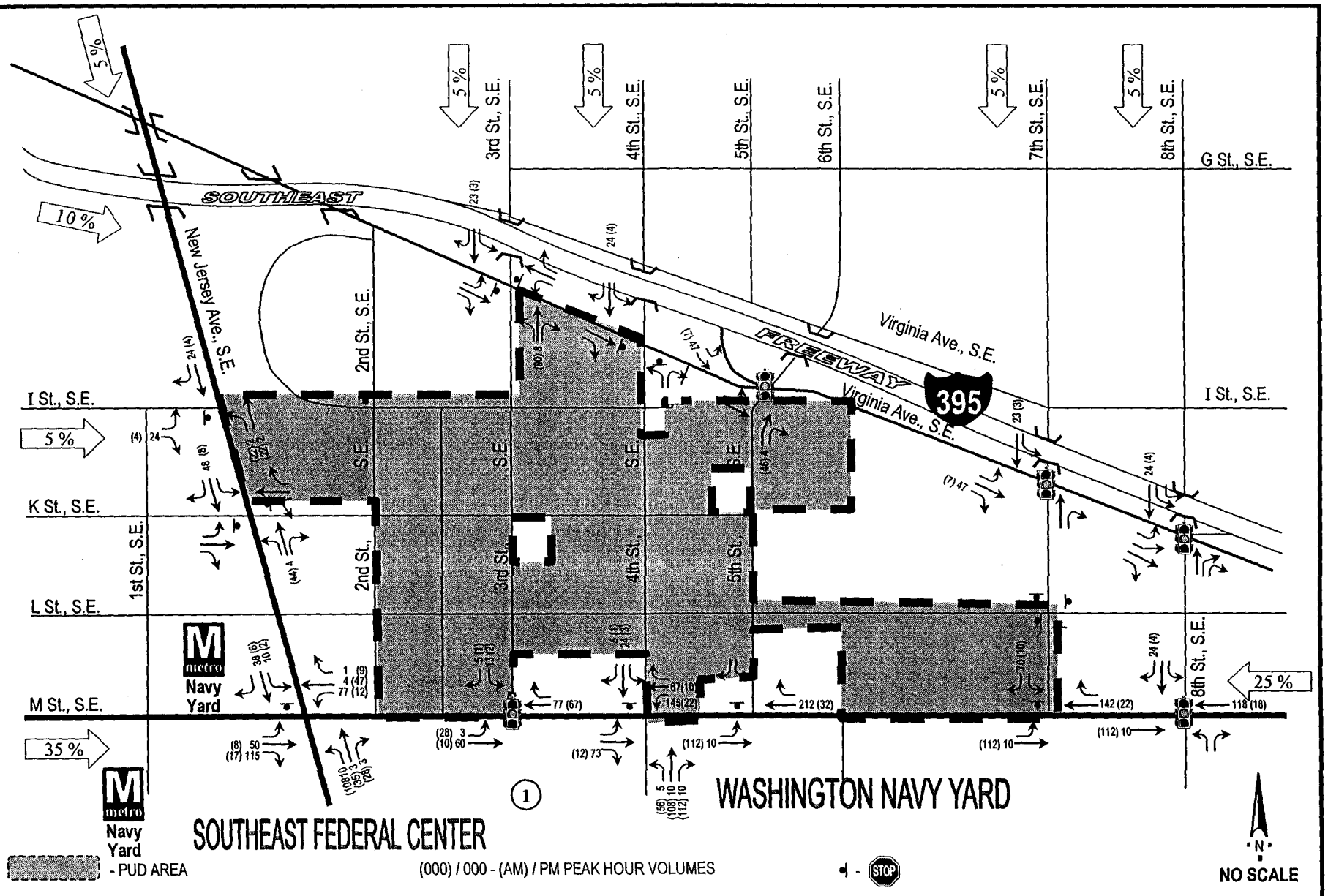
Appendix E
Year 2007 Base Traffic Situation
Arthur Capper / Carrollsburg Dwellings - Planned Unit Development

E-7

APPENDIX

F

TRAFFIC ASSIGNMENT SHEETS
BACKGROUND DEVELOPMENTS

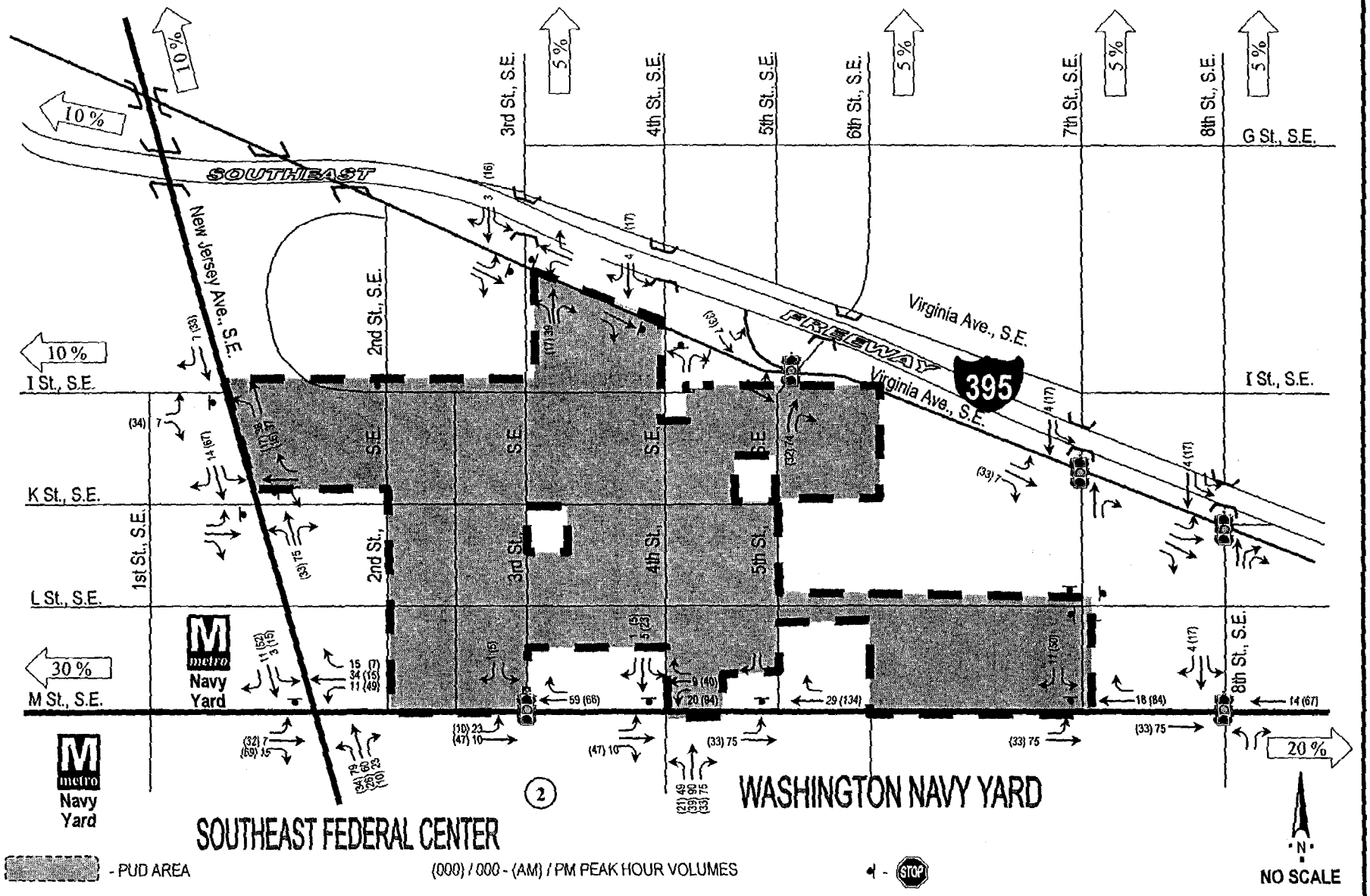


O. R. GEORGE & ASSOCIATES, INC.
Traffic Engineers – Transportation Planners

APPENDIX F-1

Site No. 1: US Department of Transportation

F-1

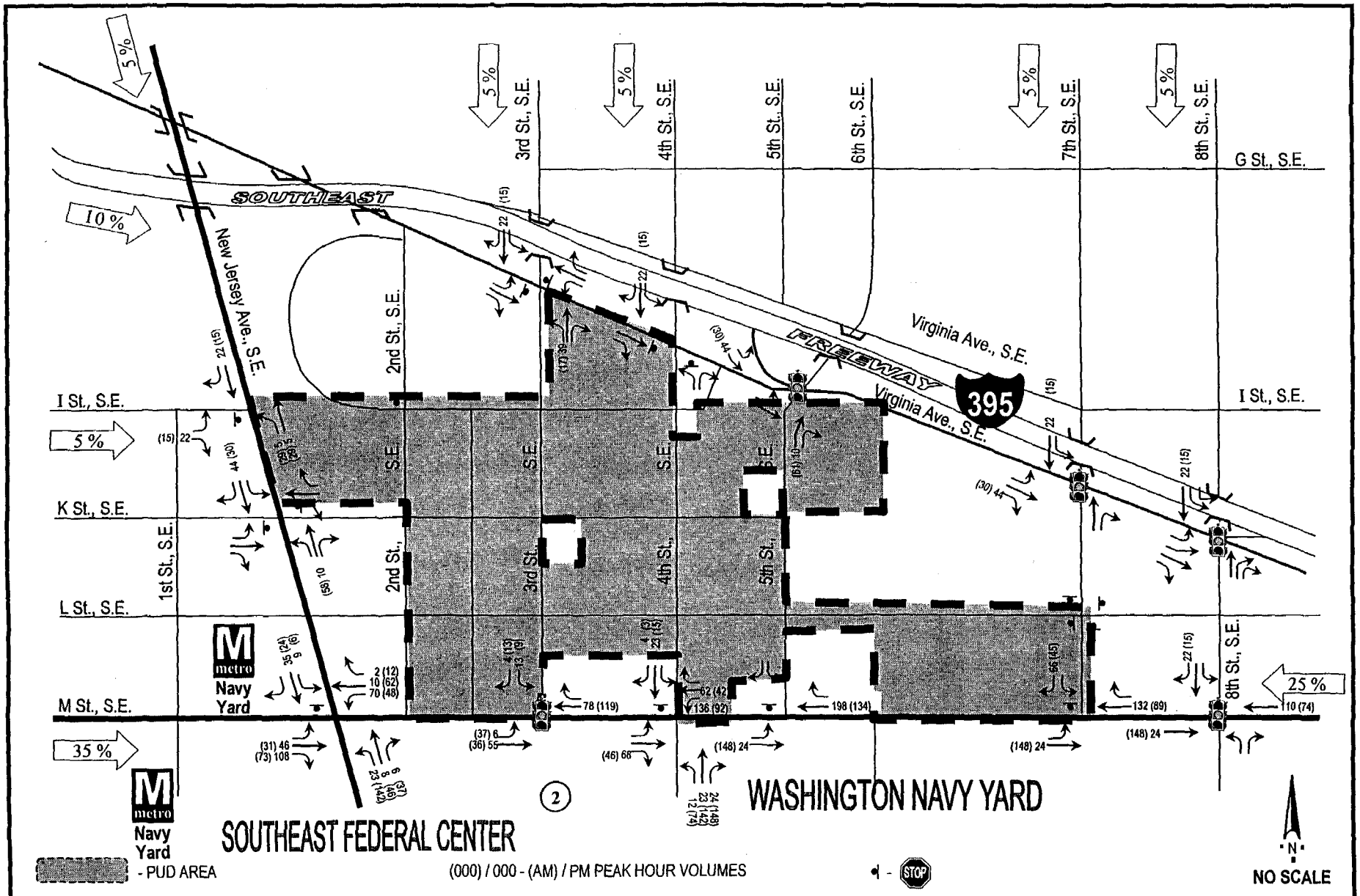


O. R. GEORGE & ASSOCIATES, INC.
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APPENDIX F-2

Site No. 2: Southeast Federal Center (Residential)

F-2



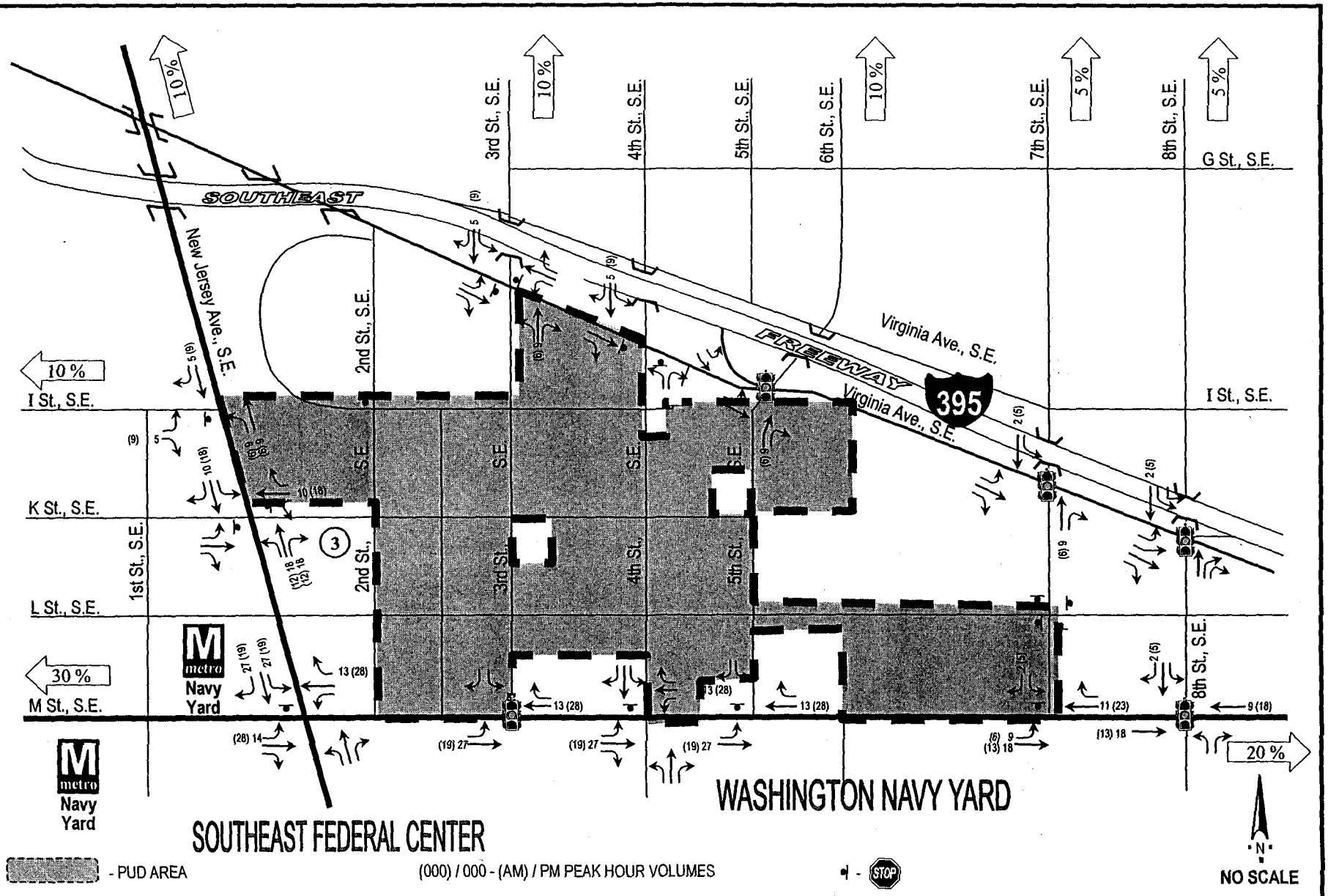
F-24

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APPENDIX F-2A

Site No. 2: Southeast Federal Center (Office & Retail)

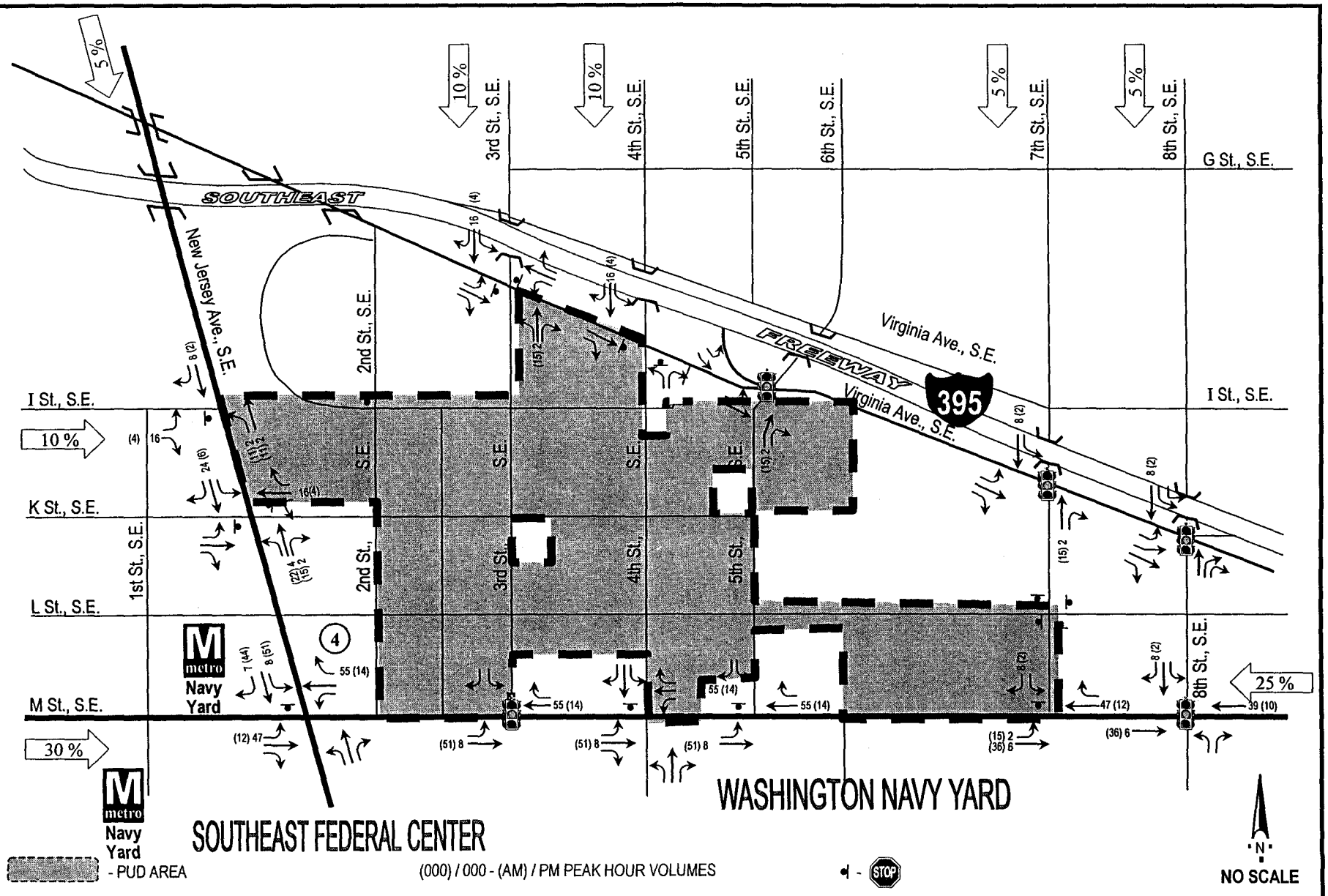


F-3

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Traffic Engineers – Transportation Planners

APPENDIX F-3

Site No. 3: Capitol Hill Towers

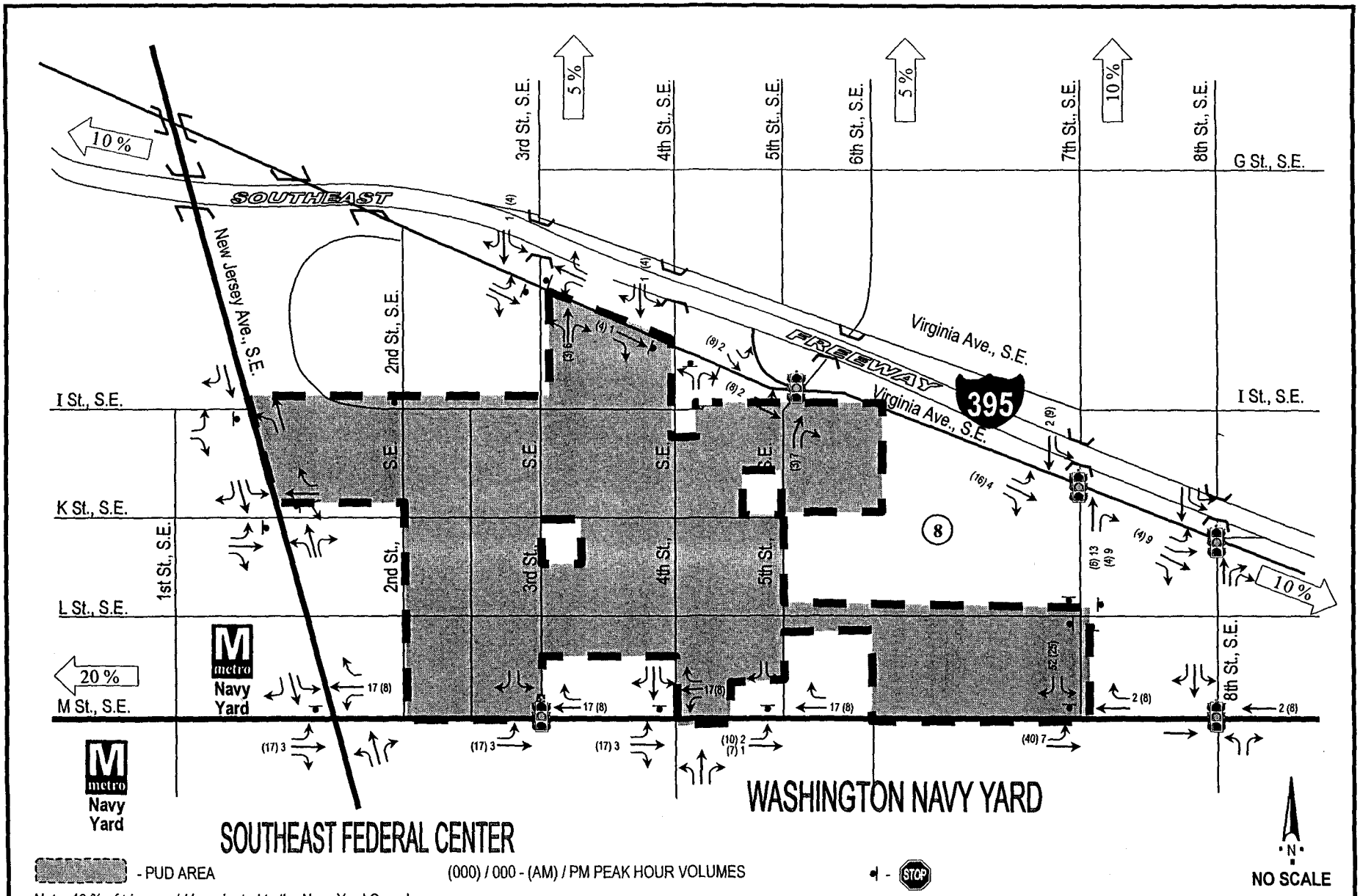


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APPENDIX F-4

Site No. 4: Federal Gateway



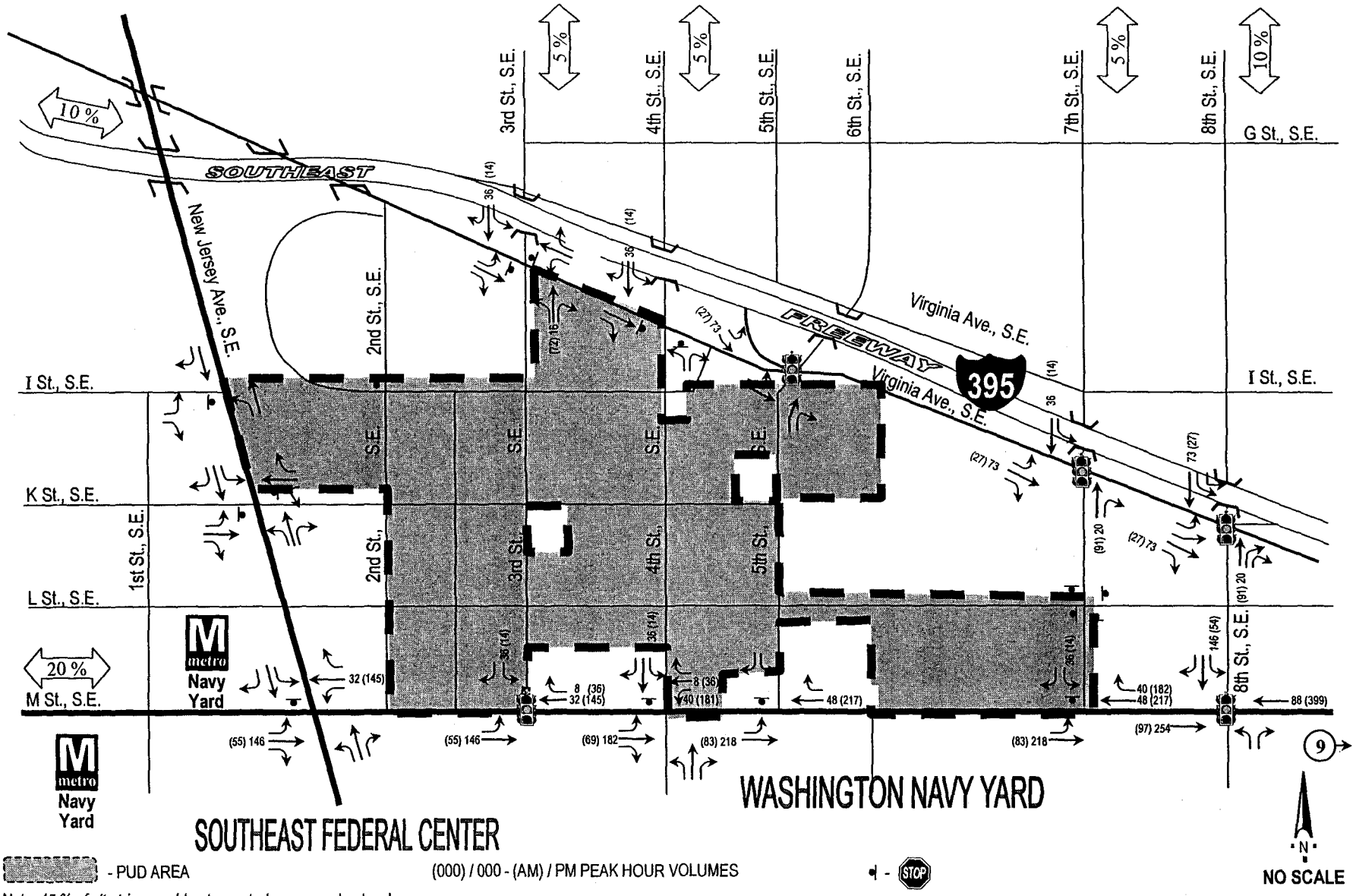
5-4

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Traffic Engineers – Transportation Planners

APPENDIX F-5

Site No. 8: Marine Barracks



Note: 45 % of site trips would not use study area road network

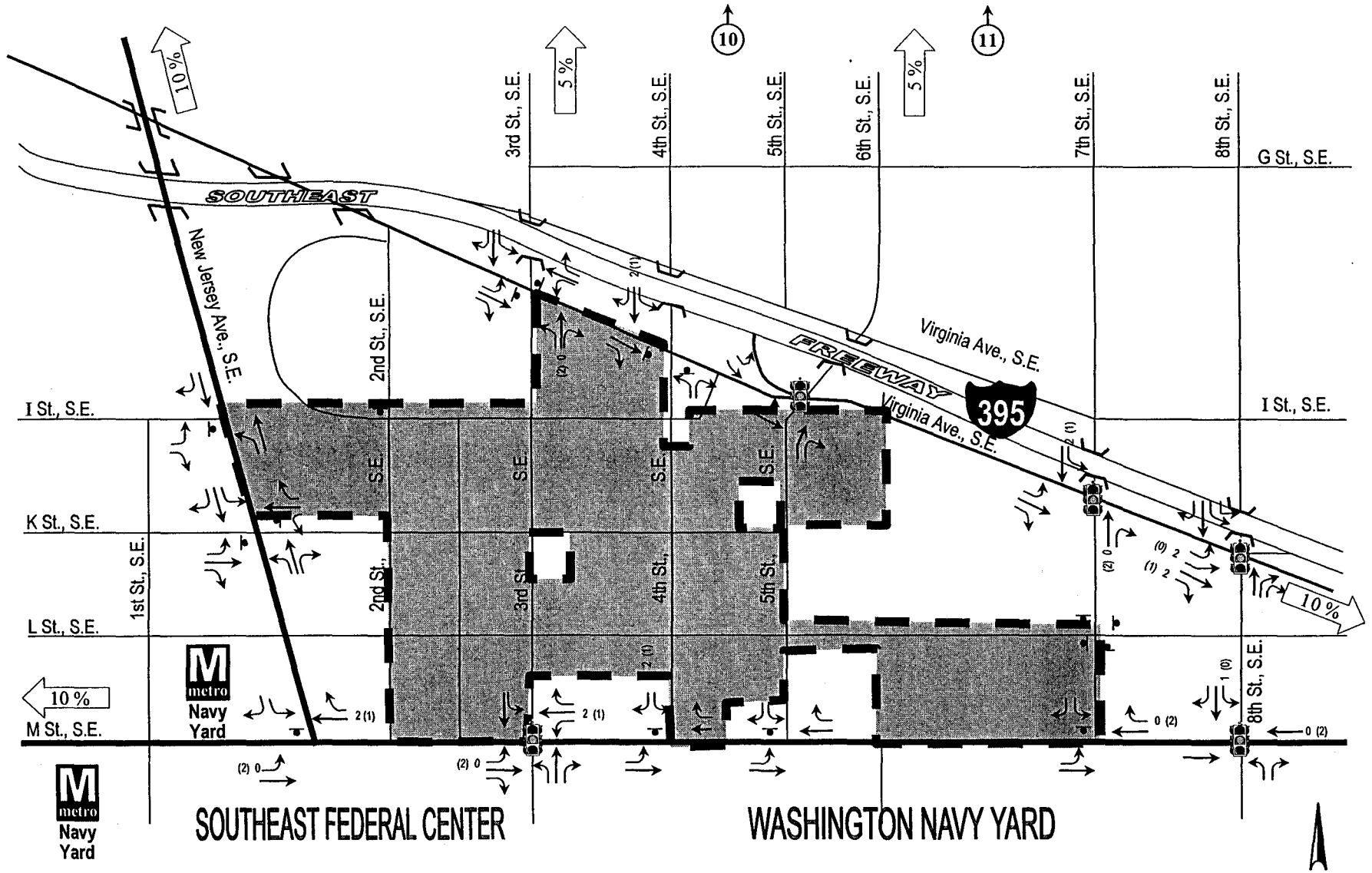
9-1

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APPENDIX F-6

Site No. 9: Maritime Plaza II & III

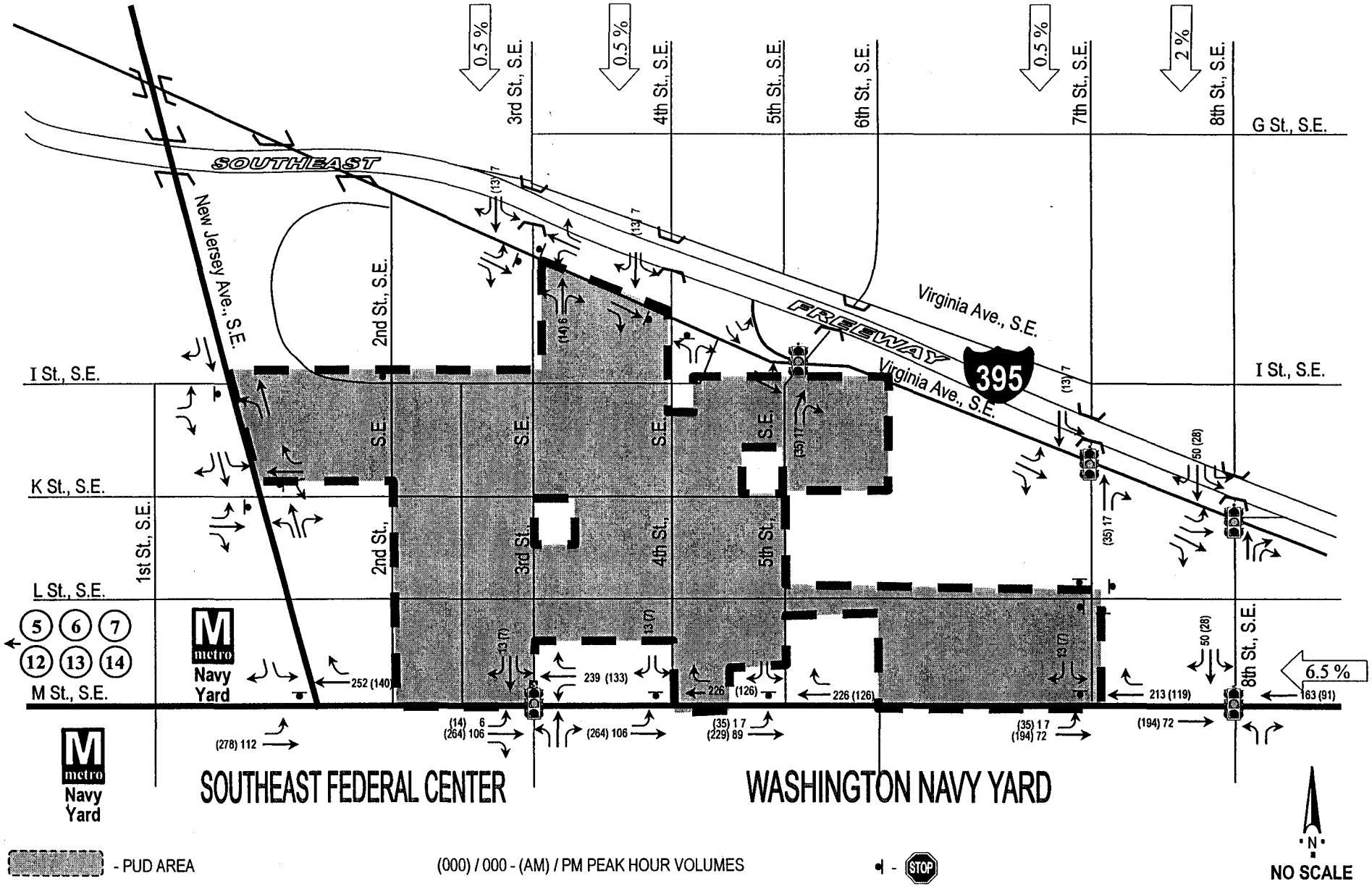


Note: 80 % of trips would not use study area road network

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Traffic Engineers – Transportation Planners

APPENDIX F-7

Sites No. 10 & 11: Lenox School & Polk Court



B-1

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APPENDIX F-8

Sites No. 5, 6, 7, 12, 13 & 14: See Table 2 of Traffic Study