

**ATLANTIC SOUTH
TRANSPORTATION IMPACT STUDY
WASHINGTON, D.C.**

Prepared for:
The Broadway Group

Prepared by:
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Section I

INTRODUCTION

This report presents the results of a transportation impact study of Broadway Atlantic One LLC's proposed residential condominium project, Atlantic South, located at 800-801 V Street (Parcels A and D) and 2047 9th Street, N.W. (Parcel B), in the northwest section of Washington, D.C., as shown on Figure I-1.

The subject site consists of three parcels: (1) Parcel A, which is located in the northwest quadrant of the 8th Street/V Street intersection, (2) Parcel B, which is located in the southwest quadrant of the 8th Street/V Street intersection, and (4) Parcel D, which is located just west of Parcel A. Currently, Parcel A is occupied by an Atlantic Plumbing warehouse, Parcels B is occupied by a storage warehouse, and Parcel D is a gated lot containing garbage dumpsters.

Broadway Atlantic One LLC proposes to re-develop the sites as follows and as shown on Figures I-2 and I-3:

Parcel A is proposed to be re-developed with a building that would contain approximately 303 residential condominiums and 6,245 S.F of ground level retail space. Access to the parking garage with approximately 328 parking spaces (includes 10 spaces for Parcel D) and the loading area will be provided via an existing alley to the west of the site on V Street between 8th and 9th Streets.

Parcel B is proposed to be re-developed with a building that would contain approximately 71 residential condominiums and 4,306 S.F. of ground level retail space. Access to the loading dock and to the parking garage with approximately 73 parking spaces will be provided via V Street.

Parcel D is proposed to be re-developed with a residential building that would contain approximately 10 residential condominiums and 1,444 S.F of ground level retail space. Parking will be provided in the parking garage located beneath Parcel A.

For purposes of this traffic analysis, this development was assumed to be completely built and occupied by 2007.

Tasks undertaken in this study included the following:

- I. Review of Broadway Atlantic One LLC's development program, plans prepared by Esocoff & Associates, and other background data.

2. A field reconnaissance of existing roadway and intersection geometrics, traffic controls, traffic signal phasing/timings, and speed limits.
3. Counts of existing vehicular and pedestrian traffic at sixteen (16) key intersections (including the existing site driveways.)
4. Analysis of existing levels of service at these intersections.
5. Background future traffic volumes were forecasted for project buildout (2007).
6. Background levels of service were calculated at key intersections based on background traffic forecasts, existing traffic controls, and existing intersection geometrics.
7. The number of AM and PM peak hour vehicle-trips that would be generated by the proposed project were estimated based on: (1) Institute of Transportation Engineers (ITE) trip generation rates, (2) the proximity of the project to the U Street/African-American Civil War Memorial/Cardozo and the Shaw-Howard University Metro stations, and (3) experience with other comparable projects in Washington, D.C.
8. Total future traffic volumes were forecasted for 2007.
9. Total future levels of service were calculated at key intersections based on total future traffic forecasts, existing traffic controls, and existing intersection geometrics.
10. Operational improvements required to adequately accommodate site traffic were identified.
11. Feasibility analysis of the proposed extension of Bryant Street and W Streets as an east/west cut-through to connect the Howard University Campus and Florida Avenue.

Sources of data for this analysis included traffic counts conducted by Wells & Associates, ITE, the Washington Metropolitan Area Transit Authority (WMATA), the District of Columbia, and U. S. Census Bureau.

The conclusions of this traffic impact study are as follows:

1. ***The majority of the key intersections currently operate at an overall acceptable level of service (LOS) "D" or better during both the AM and the PM peak hours, with exceptions at the intersections of Georgia***

Avenue/Barry Place, Florida Avenue/8th Street, Barry Place/Sherman Avenue, Florida Avenue/Sherman Avenue, and Florida Avenue/W Street which operate near or at capacity.

- 2. Four other approved developments in the site vicinity were identified and will generate 124 AM peak hour trips and 180 PM peak hour trips.**
- 3. These additional trips can be adequately accommodated at the key intersections in the study area. The addition of the background growth rate and the other approved developments will not significantly impact the intersections that are currently operating near or at capacity.**
- 4. The proposed development of Atlantic South will generate 86 net additional AM peak hour trips and 151 net additional PM peak hour trips.**
- 5. These additional site-generated trips can be adequately accommodated at the key intersections in the study area. The development of Atlantic South will not significantly further impact the intersections that are currently operating near or at capacity. The driveways to access the underground parking garage for Atlantic South (Parcels A and B) will operate at acceptable LOS "A" and "B" during both the AM and PM peak hour under stop sign control.**
- 6. The proposed on-site parking supply would exceed the minimum zoning parking requirements and prevailing parking demands for this neighborhood. The proposed loading/delivery/service facilities would adequately meet the project and DC minimum zoning requirements.**
- 7. The proposed construction of a traffic circle at the Florida Avenue/Sherman Avenue/Bryant Street Extension/University Dorms intersection greatly improves the overall existing, background, and total future levels of service.**

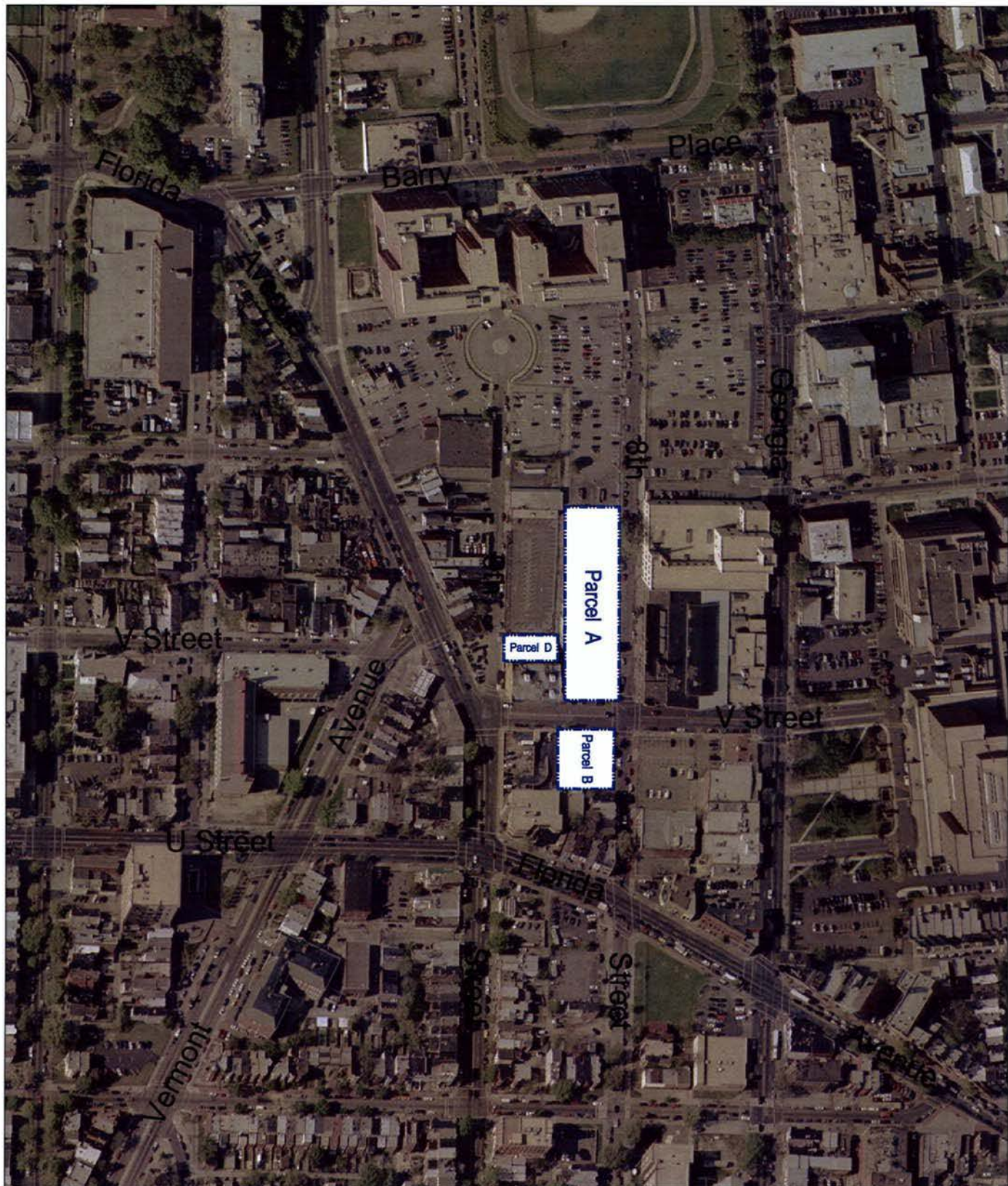
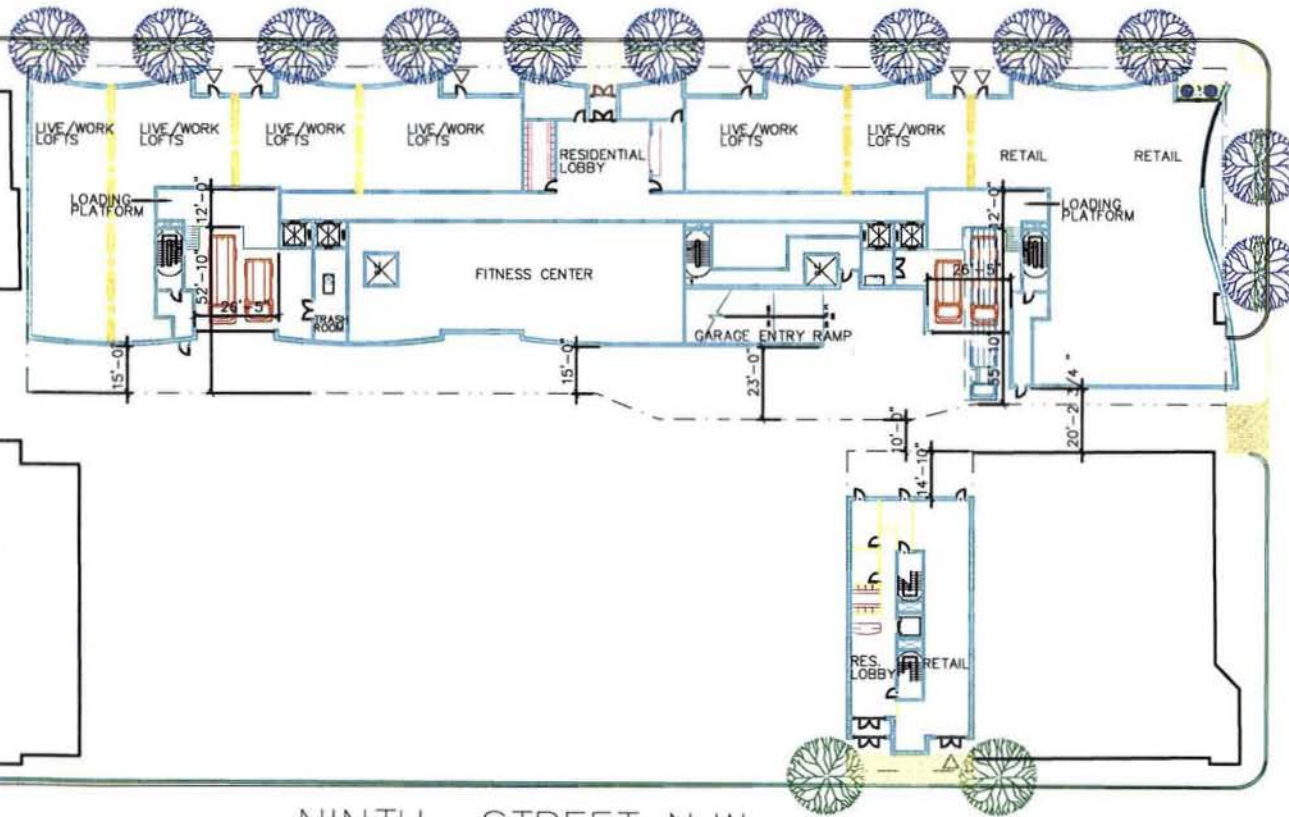


Figure 1-1
Site Location
(Atlantic South)

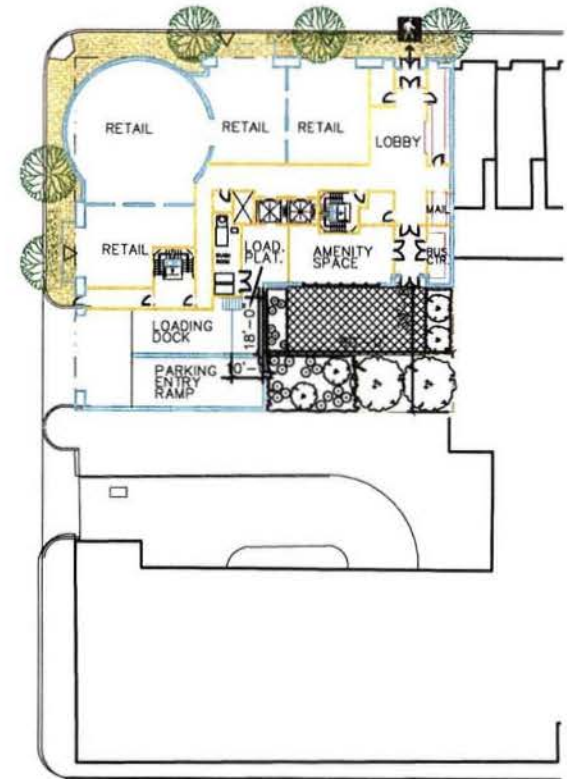


EIGHTH STREET N.W.



NINTH STREET N.W.

V STREET N.W.



Section 2 BACKGROUND DATA

Study Scope

This traffic study includes the following intersections:

1. 8th Street/U Street,
2. 9th Street/U Street,
3. 8th Street/V Street,
4. 9th Street/V Street/Florida Avenue,
5. 8th Street/Barry Place,
6. 9th Street/Barry Place,
7. Bryant Street/Georgia Avenue,
8. W Street/Georgia Avenue,
9. V Street/Georgia Avenue,
10. W Street/Florida Avenue,
11. Barry Place/Sherman Avenue,
12. Florida Avenue/Sherman Avenue,
13. Sherman Avenue/Howard University Driveway,
14. Barry Place/10th Avenue/Florida Avenue,
15. Existing site driveway counts for Parcel A, and
16. Existing site driveway counts for Parcel B.

This study also includes the following approved, but un-built or incomplete developments in the vicinity of the subject site:

1. **Lincoln Condominiums** is located at U and 12th Streets and consists of 156 residential units; nine units were built at the time of the traffic counts and the remaining 147 units are planned to be completed by June 2005.
2. **The Rhapsody** is located at 2120 Vermont Avenue, N.W., and consists of 162 residential condominiums and 162 underground parking spaces, with a build out year of 2006.
3. **The Floridian** is located on Florida and Vermont Avenue and consists of 118 loft-style condominiums in two 8-story towers, with a build out planned for spring 2007.
4. **The Brandon** is located at 1407 W Street, N.W., and consists of approximately 12 residential condominiums.
5. **Atlantic North** (to be submitted concurrently with this application for approval) is located at 945 Florida Avenue, N.W., and consists of approximately 248 residential condominiums and 8,839 SF of ground level retail space.

The impacts of this approved project and the subject project were evaluated at project buildout, which is anticipated to occur by 2007.

Level of service (LOS) "D" is considered the minimum acceptable level of service in urban areas such as Washington, D.C.

Public Road Network

Vehicular access/egress to/from the Atlantic Plumbing sites is provided by Georgia Avenue, Barry Place, 8th, 9th, V, and U Streets, and Florida Avenue. Existing intersection lane use and traffic control at key intersections in the site vicinity are shown on Figure 2-1.

Georgia Avenue is a major north/south, four-lane road with a posted speed limit of 30 miles per hour (mph). Curb parking is available on both sides of the street. The intersections of Georgia Avenue with Barry Place, Bryant Place, W Street, and V Street are controlled by traffic signals.

Barry Place is an east/west, two-lane street with a posted speed limit of 25 mph. The intersection of Barry Place with Sherman Avenue is controlled by a traffic signal and its intersection with Florida Avenue is controlled by a 4-way stop sign.

8th Street is a north-south, two-lane street with a posted speed limit of 25 mph. Curb parking is provided on both sides of the street. The intersections of 8th Street with Florida Avenue, V Street, and Barry Place are controlled by stop signs.

9th Street is a north-south, four-lane street with a posted speed limit of 25 mph. Curb parking is available for two or three hours from 9:30AM to 6:30PM, Monday through Friday. The intersection of 9th Street with Florida Avenue is controlled by a traffic signal, and the intersections of 9th Street with V Street and Barry Place are controlled by stop signs.

U Street is an east-west, four-lane street with a posted speed limit of 35 miles per hour. No parking is permitted on either side of U Street from 7:00AM to 9:30AM and 4:00PM to 6:30PM, Monday through Friday.

V Street is an east-west, two-lane street with a posted speed limit of 35 mph. Two hour parking is permitted just east of the intersection of V Street/8th Street from 7:00AM to 6:30PM, Monday through Friday, except on Wednesdays from 9:30AM to 11:30AM for street-cleaning.

Florida Avenue is an east-west, four-lane street with a posted speed limit of 35 mph. Just east of the intersection of Florida Avenue and 8th Street, the westbound movement is comprised of three lanes with shared right and left turn lanes. Two-hour parking is permitted just east of the intersection of Florida Avenue and 8th Street from 9:30AM to 4:00PM, Monday through Friday.

Existing Traffic Counts

Vehicle Traffic Counts. Existing AM and PM peak period vehicular and pedestrian traffic counts were conducted on Tuesday, April 12, 2005, Wednesday, November 2, 2005, and Tuesday, December 20, 2005, by Wells & Associates at the following intersections:

1. 8th Street/U Street (April 12, 2005),
2. 9th Street/U Street (April 12, 2005),

3. 8th Street/V Street (April 12, 2005),
4. 9th Street/V Street/Florida Avenue (April 12, 2005),
5. 8th Street/Barry Place (April 12, 2005),
6. 9th Street/Barry Place (April 12, 2005),
7. Bryant Street/Georgia Avenue (November 2, 2005),
8. W Street/Georgia Avenue (November 2, 2005),
9. V Street/Georgia Avenue (December 20, 2005),
10. W Street/Florida Avenue (November 2, 2005),
11. Barry Place/Sherman Avenue (November 2, 2005),
12. Florida Avenue/Sherman Avenue (November 2, 2005),
13. Sherman Avenue/Howard University Driveway (December 20, 2005),
14. Barry Place/10th Avenue/Florida Avenue (November 2, 2005),
15. Existing site driveway counts for Parcel A (April 12, 2005), and
16. Existing site driveway counts for Parcel B (April, 12, 2005).

Vehicular traffic counts are presented in Appendix A and summarized on Figure 2-2. Pedestrian traffic counts also are presented in Appendix A and summarized on Figure 2-3.

The AM peak hour generally occurred at 8:00 to 9:00 AM; the PM peak hour generally occurred at 5:00 to 6:00 PM.

Figure 2-2 indicates that Florida Avenue/9th Street, between U and V Streets, presently carries 1,851 AM peak hour vehicle trips and 1,923 PM peak hour vehicle trips. Approximately 73 percent of all AM peak hour trips travel in the southbound direction and 27 percent travel in the northbound direction. Approximately 55 percent of all PM peak hour trips travel in the eastbound direction and 45 percent travel in the westbound direction.

V Street, between 8th and 9th Streets, presently carries 281 AM peak hour trips and 373 PM peak hour trips. 8th Street, between Florida Avenue and V Street, carries only 121 AM peak hour trips and 152 PM peak hour trips.

Existing Site Traffic. Parcel A currently generates 18 AM peak hour trips (13 in and 5 out) and 13 PM peak hour trips (1 in and 12 out). Parcel B currently generates 3 AM peak hour trips (1 in and 2 out) and 3 PM peak hour trips (2 in and 1 out). No traffic is generated by Parcel D.

Public Transportation Facilities and Services

The subject site is served by numerous Metrobus lines: the 66, 68 (Petworth-11th Street), the 90, 92, and 93 (U Street-Garfield) line, the 96 (East Capitol Street-Cardozo) line, the 98 (Adams Morgan-U Street) line, and the X3 (Benning Road-Potomac Park) line. All Metrobus lines serve the U-Street/African-American Civil War Memorial/Cardozo Metro station, which is located four (4) blocks (or approximately 1,520 feet) west of Parcels A, B, and D. In addition, the Shaw-Howard University Metro station is located three (3) blocks (or approximately 1,280 feet) south of Parcel B.

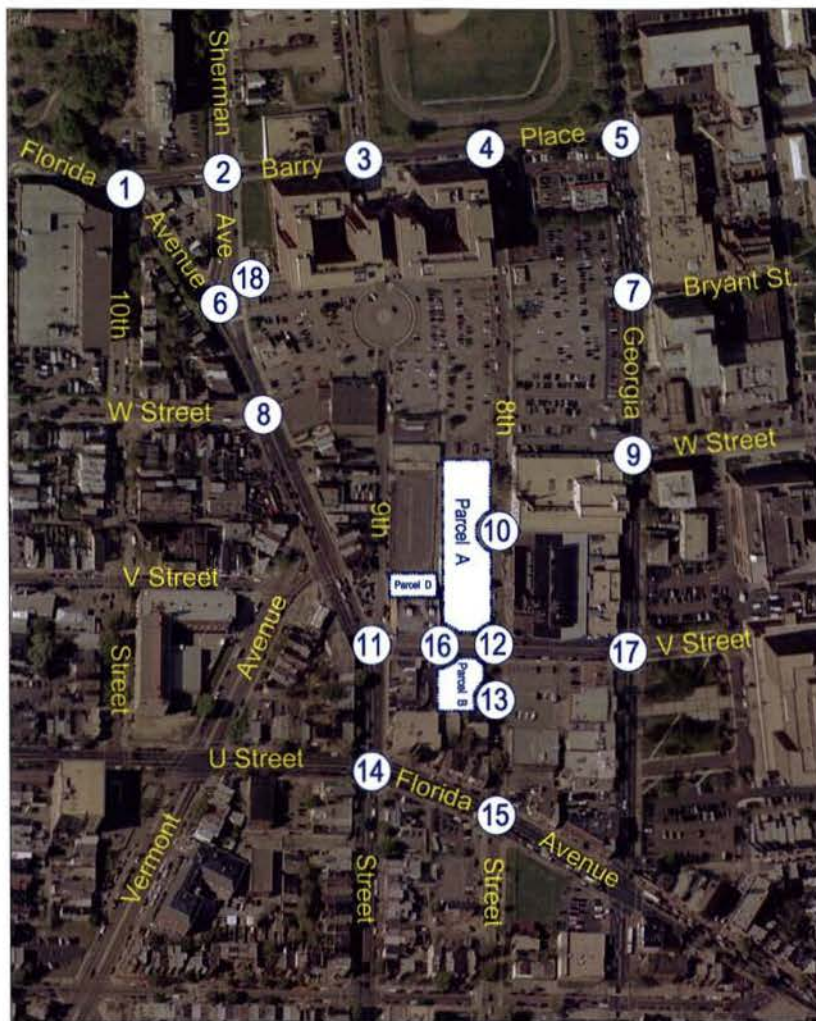
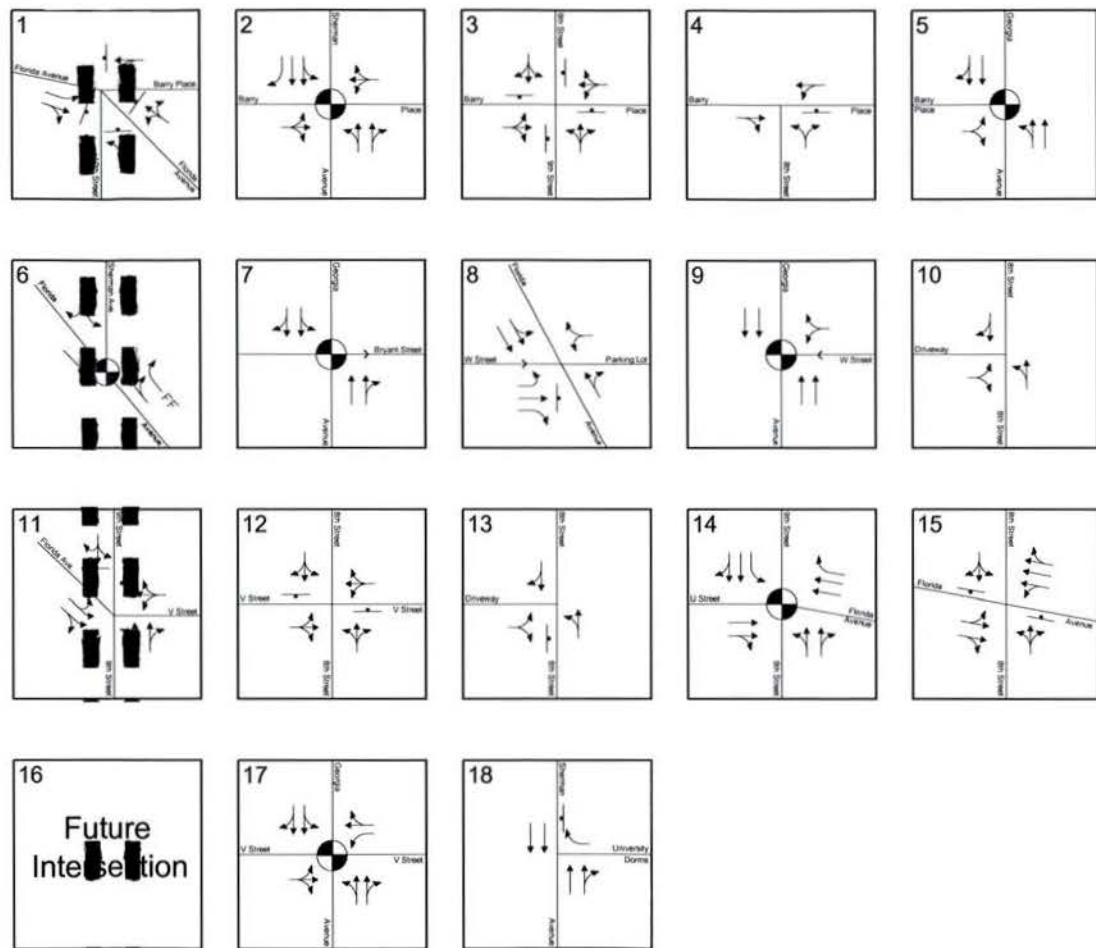


Figure 2-1
Existing Lane Use and Traffic Control
(Atlantic South)

← Represents One Travel Lane
● Signalized Intersection
— Stop Sign
FF Free Flow



Atlantic Plumbing Site
Washington, D.C.

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

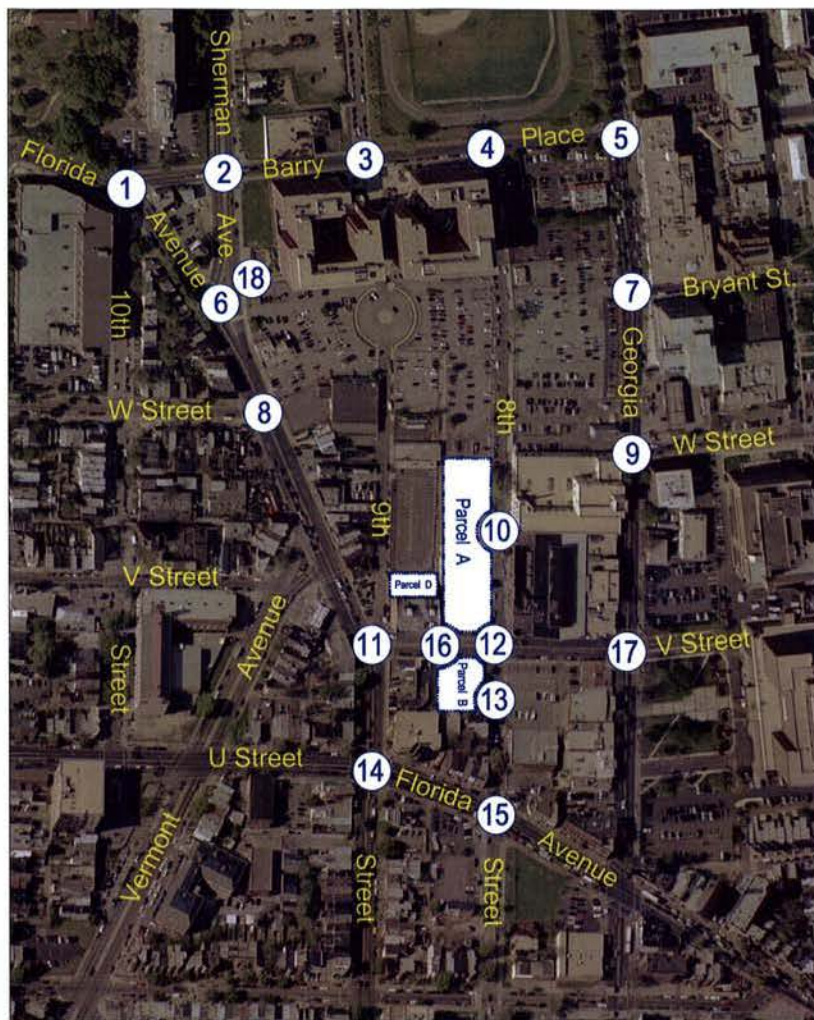
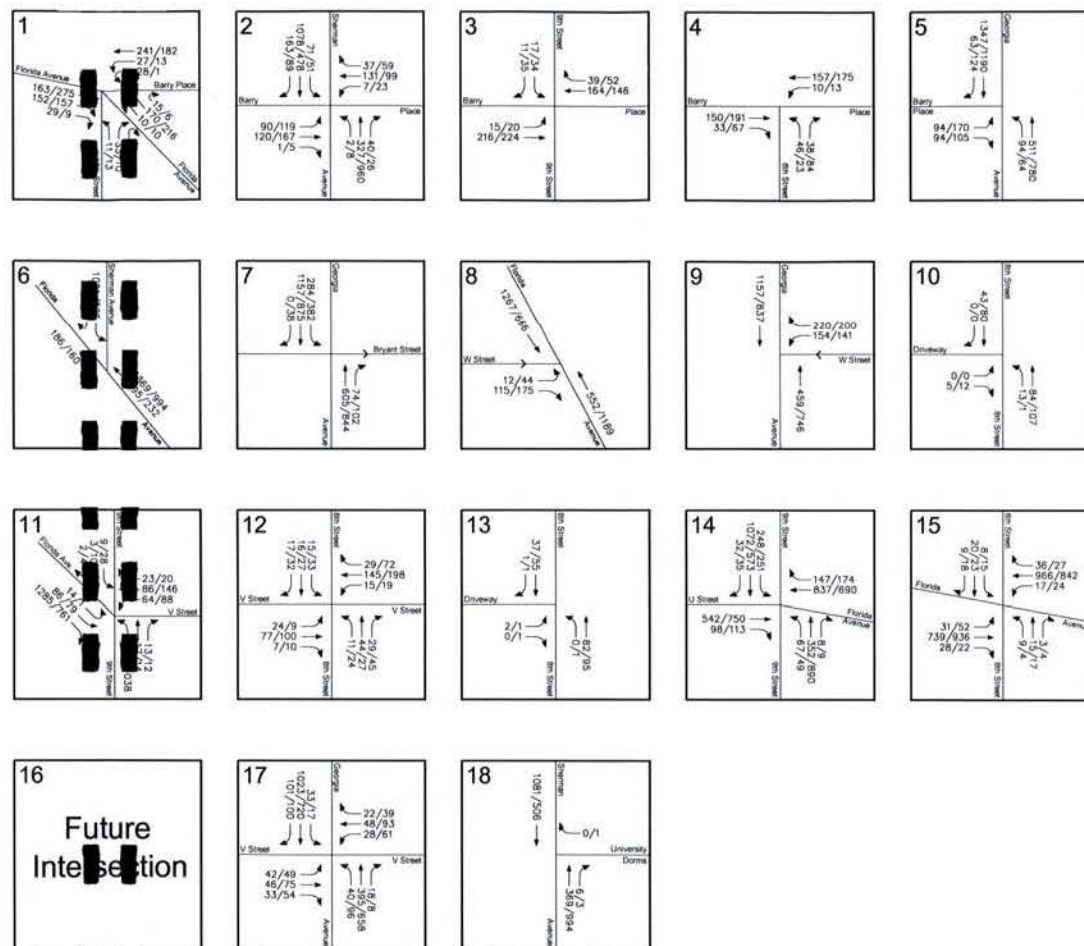


Figure 2-2
Existing Peak Hour Traffic Volumes
(Atlantic South)

Atlantic Plumbing Site
Washington, D.C.

AM PEAK HOUR
PM PEAK HOUR
000/000



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

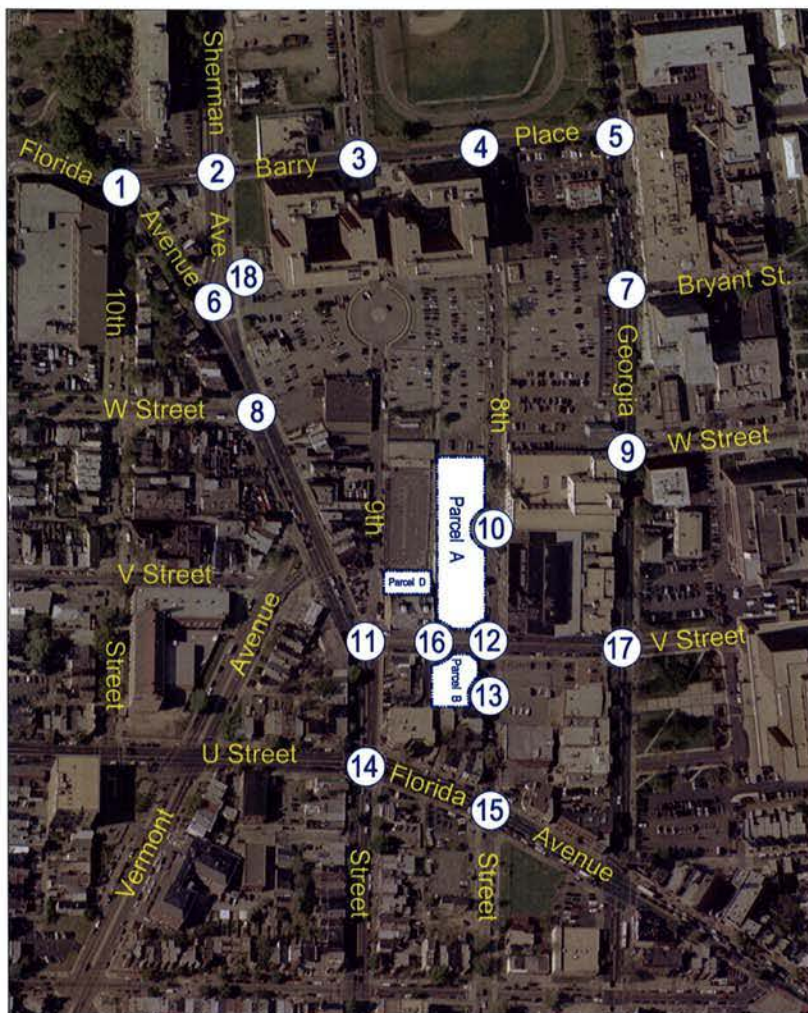
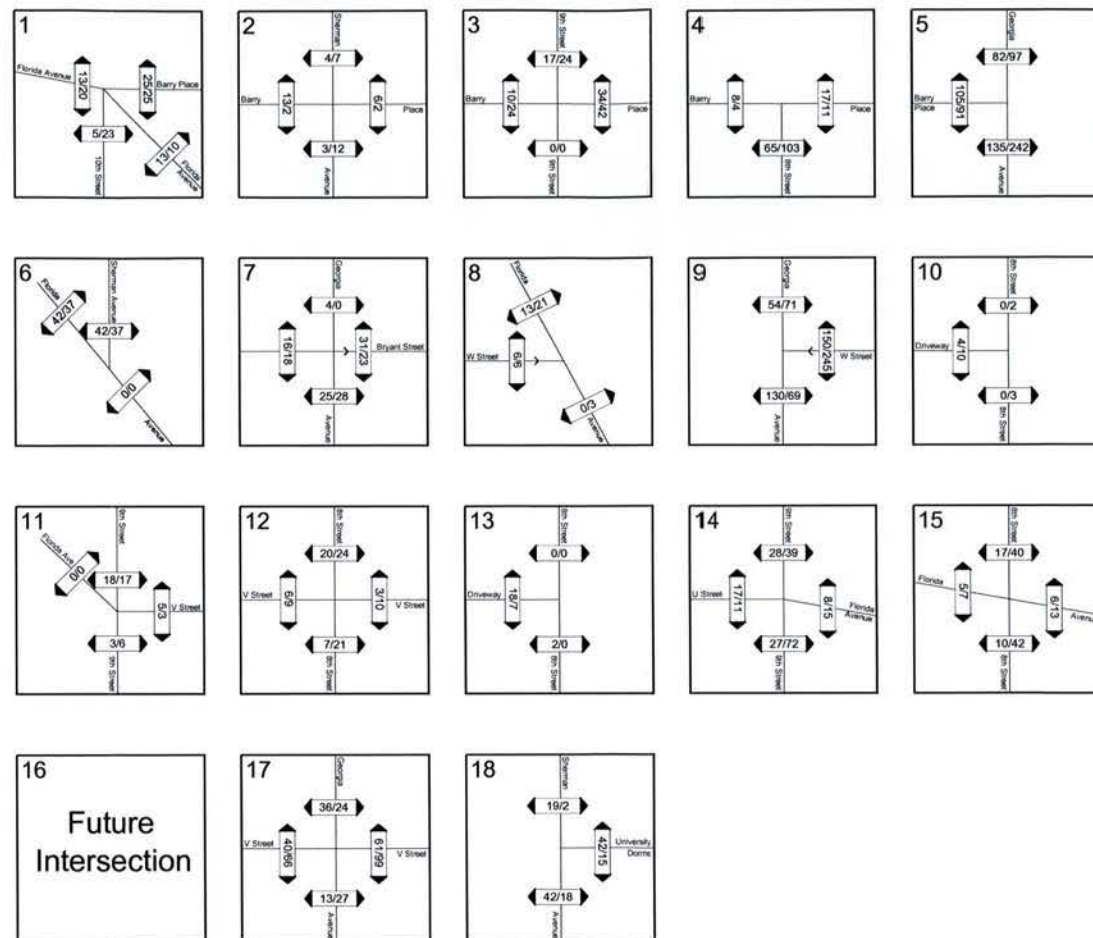


Figure 2-3
Existing Pedestrian Volumes
(Atlantic South)

Section 3 ANALYSIS

Existing Levels of Service

Existing peak hour levels of service were estimated at the sixteen (16) key intersections (including the existing site driveways) in the study area based on the existing lane usage and traffic control shown on Figure 2-1, the existing traffic volumes shown on Figure 2-2, and the Highway Capacity Manual. The results are presented in Appendix B and summarized in Table 3-1.

Table 3-1 indicates that the majority of the key intersections currently operate at an overall acceptable level of service (LOS) "D" or better during both the AM and the PM peak hours, with a few exceptions.

The eastbound movement at the Georgia Avenue/Barry Place intersection operates at LOS "E" and "F" during the AM and PM peak hours, respectively, due to the high volume of traffic turning on northbound and southbound Georgia Avenue. The northbound and southbound movements at the Florida Avenue/8th Street intersection theoretically operate at capacity at LOS "F" during the AM and PM peak hours. In practice, this traffic relies on gaps in the eastbound and westbound through traffic created by adjacent traffic signals. The intersection of Barry Place/Sherman Avenue operates at LOS "F" during both the AM and PM peak hours, due to high northbound and southbound through volumes. The intersection of Florida Avenue/Sherman Avenue operates at a LOS "F" during the AM peak hour, due to the high volume of traffic traveling southbound on Sherman Avenue and turning left onto Florida Avenue. Lastly, the eastbound movement at the intersection of Florida Avenue/W Street operates at LOS "F" during the PM peak hour, because the traffic on W Street must rely on gaps in the through traffic on Florida Avenue to enter the mainstream.

Other Development Trip Generation

The number of peak hour trips that will be generated by the other approved developments were estimated based on peak hour equations included in the Institute of Transportation Engineers' (ITE) Trip Generation manual, 7th Edition and the proximity of the development to the U Street/African-American Civil War Memorial/Cardozo Metro station.

As shown in Table 3-2, it is estimated that the other approved developments will generate 1524 AM peak hour trips and 280 PM peak hour trips, upon completion.

Trip Distribution Analysis

The distributions of the other approved developments and the subject site were determined based on existing AM peak hour traffic patterns.

Table 3-1
Atlantic South
Peak Hour Intersection Levels of Service¹

Intersection	Type of Control	2005 Existing Conditions		2007 Background Conditions		2007 Total Future Conditions	
		AM	PM	AM	PM	AM	PM
1 Florida Ave./10th Ave./Barry Place Eastbound LTR Westbound LTR Northbound LTR Southbound LTR	Stop Sign	A[9.6] B[12.3] B[11.3] B[10.6]	A[9.5] B[10.5] B[11.3] B[12.0]	A[9.9] B[12.9] B[12.5] B[11.0]	A[9.7] B[10.9] B[12.4] B[12.4]	A[9.8] B[12.7] B[12.1] B[10.9]	A[9.7] B[10.8] B[12.1] B[12.3]
2 Barry Place/Sherman Street Eastbound Westbound Northbound Southbound Overall	Signal	A(7.4) A(6.7) D(30.4) F(392.9) F(205.9)	A(8.2) A(6.9) F(169.5) E(126.2) F(120.0)	A(7.4) A(6.7) D(49.4) E(212.3) F(211.8)	A(8.2) A(6.9) F(174.5) E(129.2) F(123.5)	A(7.4) A(6.7) C(34.7) E(127.3) F(209.1)	A(8.2) A(6.9) F(160.0) F(129.2) F(116.4)
3 9th Street/Barry Place Eastbound LTR Westbound LTR Southbound LTR	Stop Sign	A[9.0] A[8.6] A[7.5]	A[9.5] A[8.7] A[7.6]	A[9.1] A[8.4] A[7.5]	A[9.5] A[8.7] A[7.6]	A[9.1] A[8.4] A[7.3]	A[9.5] A[8.7] A[7.4]
4 8th Street/Barry Place Westbound TL Northbound LR	Stop Sign	A[0.5] B[10.8]	A[0.6] B[10.9]	A[0.5] B[10.8]	A[0.6] B[10.9]	A[0.5] B[10.8]	A[0.6] B[10.9]
5 Barry Place/Georgia Avenue Eastbound Northbound Southbound Overall	Signal	E(57.4) A(5.2) C(22.5) C(20.7)	F(148.6) A(5.9) C(20.2) C(30.0)	E(58.1) A(5.3) C(22.9) C(31.0)	F(153.1) A(5.9) C(21.0) C(30.7)	E(58.1) A(5.3) C(22.9) C(31.0)	F(153.1) A(6.0) C(21.1) C(30.7)
6 Florida Avenue/Sherman Street Northbound Southbound Southwestbound Overall	Signal	D(41.3) C(27.5) E(28.2) F(79.4)	D(45.7) C(26.7) E(29.6) C(32.3)	D(41.7) C(27.9) E(100.6) F(81.7)	D(44.1) C(27.9) E(29.2) C(33.7)	D(42.0) C(28.1) E(100.0) F(81.1)	D(44.3) C(28.7) E(29.2) C(34.1)
7 Bryant Street/Georgia Avenue Northbound Southbound Overall	Signal	A(9.6) A(2.1) A(4.6)	B(11.1) A(2.4) A(4.1)	A(9.7) A(2.1) A(4.7)	B(11.2) A(2.5) A(4.1)	A(9.7) A(2.4) A(4.7)	B(11.2) A(2.3) A(4.3)
8 Florida Avenue/Parcel C/W Street Eastbound LR Westbound LR	Stop Sign	D[31.3] E[43.0]	F[103.6] A[0.0]	D[27.3] N/A	F[70.6] N/A	D[27.9] N/A	F[79.5] N/A
9 W Street/Georgia Avenue Westbound Northbound Southbound Overall	Signal	C(32.4) A(8.8) B(15.1) B(14.9)	C(30.8) A(9.3) B(12.6) B(14.5)	C(32.9) A(8.8) B(15.2) B(17.0)	C(30.8) A(9.3) B(12.4) B(14.5)	C(32.9) A(8.8) B(15.2) B(17.0)	C(30.8) A(9.2) B(12.2) B(14.5)
10 8th Street/Parcel A Driveway Eastbound LR Northbound TL	Stop Sign	A[8.5] A[1.0]	A[8.8] A[0.1]	N/A N/A	N/A N/A	N/A N/A	N/A N/A
11 9th Street/V Street/Florida Avenue ² Eastbound LTR Westbound LTR Northbound LTR Southbound LTR	Stop Sign	C[17.53] B[11.51] B[12.80] A[9.92]	C[15.56] C[17.52] D[28.25] B[11.40]	C[21.23] B[12.42] E[13.61] B[10.73]	C[18.15] C[21.94] E[40.39] B[12.07]	C[22.92] B[13.53] B[13.81] B[10.96]	C[20.00] D[26.17] E[43.31] B[13.57]
12 8th Street/V Street Eastbound LTR Westbound LTR Northbound LTR Southbound LTR	Stop Sign	A[1.8] A[0.7] B[11.5] B[11.4]	A[0.7] A[0.6] B[12.2] B[13.3]	A[1.7] A[0.6] B[11.4] B[11.2]	A[0.6] A[0.6] B[12.4] B[12.9]	A[1.2] A[0.6] B[12.4] B[11.4]	A[0.5] A[0.6] C[15.1] B[13.3]
13 8th Street/Parcel B Driveway Eastbound LR	Stop Sign	A[9.3]	A[9.0]	N/A	N/A	N/A	N/A
14 9th Street/U Street/Florida Avenue Eastbound Westbound Northbound Southbound Overall	Signal	C(22.8) C(24.4) C(28.6) B(11.6) B(19.5)	C(26.1) C(22.5) D(44.4) C(33.8) C(32.0)	C(22.9) C(24.5) C(29.1) B(19.8) C(22.9)	C(24.2) C(22.5) D(48.3) D(41.1) C(34.9)	C(23.0) C(24.8) C(29.6) B(12.0) C(20.3)	C(26.4) C(22.6) E(57.3) D(41.5) D(37.5)
15 8th Street/Florida Avenue Eastbound LTR Westbound LTR Northbound LTR Southbound LTR	Stop Sign	A[0.8] A[0.2] F[111.3] F[140.0]	A[1.1] A[0.4] F[239.3] F[374.2]	A[0.8] A[0.2] F[127.8] F[162.3]	A[1.1] A[0.4] F[494.3] F[460.9]	A[0.9] A[0.2] F[150.8] F[327.6]	A[1.0] A[0.4] F[11.9] B[12.7]
16 New Parcel A and D/V Street/ New Parcel B Driveway Eastbound LTR Westbound LTR Northbound LR Southbound LR	Stop Sign	N/A N/A N/A N/A	N/A N/A N/A N/A	N/A N/A N/A N/A	N/A N/A N/A N/A	A[0.5] A[0.2] B[10.1] B[11.0]	A[1.4] A[0.4] B[11.9] B[12.7]
17 Georgia Avenue/V Street Eastbound Westbound Northbound Southbound Overall	Signal	D(42.9) D(36.1) A(4.4) A(2.1) A(7.3)	D(47.5) D(41.4) A(5.8) A(2.2) B(11.5)	D(42.8) D(36.1) A(4.4) A(2.1) A(7.3)	D(50.9) D(41.9) A(5.8) A(2.2) B(12.0)	D(44.5) E(74.9) A(4.4) A(2.1) A(7.7)	E(60.3) E(74.9) A(5.8) A(2.1) B(16.4)
18 Sherman Avenue/University Dorms Eastbound R	Stop Sign	-- A[0.0]	B[12.4]	A[0.0]	B[12.5]	A[0.0]	B[12.5]

Notes: ¹ Analysis performed using Synchro/Interlock Version 6.0
² An asterisk (*) indicates delay greater than 999.9 seconds.
³ Intersection analyzed using HCM version 4.0 as a four-way stop sign.

Table 3-2
Atlantic South
Pipeline Developments Site Trip Generation Analysis ¹

Land Use	Land Use Code	Size	Units	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
The Lincoln Condominium									
Condominiums	230	147	D.U.	12	58	70	55	27	82
Reduction for Transit Use ²		67%		8	39	47	37	18	55
Net New Residential Trips				4	19	23	18	9	27
The Floridian									
Condominiums	230	118	D.U.	10	49	59	46	23	69
Reduction for Transit Use ²		67%		7	33	39	31	15	46
Net New Residential Trips				3	16	20	15	8	23
The Rhapsody									
Condominiums	230	162	D.U.	13	63	76	60	29	89
Reduction for Transit Use ²		67%		9	42	51	40	20	59
Net New Residential Trips				4	21	25	20	9	30
The Brandon									
Condominiums	230	12	D.U.	2	7	9	7	4	11
Reduction for Transit Use ²		67%		1	5	6	5	2	7
Net New Residential Trips				1	2	3	2	2	4
Atlantic South									
Parcel C									
Existing Atlantic Plumbing Warehouse ³				7	5	12	5	0	5
Proposed Residential Condominium	230	248	D.U.	18	89	107	85	42	127
Reduction for Transit Use ³		50%		9	44	54	43	21	64
Net New Residential Trips				9	45	54	42	21	64
Proposed Retail	820	8,839	S.F.	23	14	37	60	66	126
Reduction Transit Use ³		70%		16	10	26	42	46	88
Net New Residential Trips				7	4	11	18	20	38
Net New Parcel C Site Trips				9	44	53	56	41	96
Total Pipeline Site Generated Trips				21	103	124	112	69	180

Notes: ¹ Based on Trip Generation, 7th Edition, Institute of Transportation Engineers.
² Transit reduction based on "Development-Related Ridership Survey II", by JHK & Associates, 1989.
³ Trips observed during peak hour traffic counts conducted on Tuesday, April 12, 2005.

Wells & Associates, LLC
McLean, Virginia

It is estimated that approximately 5 percent of all trips would approach from the north along Georgia Avenue, 5 percent would approach from the east along V Street, 20 percent would approach from the southeast along Florida Avenue, 5 percent would approach from the south along 8th Street, 20 percent would approach from the south along 9th Street, 25 percent would approach from the west along U Street, and 20 percent would approach from the northwest along Florida Avenue.

The distributions of the retail portion of the subject site were determined based on existing PM peak hour traffic patterns.

It is estimated that approximately 5 percent of all trips would approach from the north along Georgia Avenue, 5 percent would approach from the east along V Street, 23 percent would approach from the southeast along Florida Avenue, 2 percent would approach from the south along 8th Street, 15 percent would approach from the south along 9th Street, 20 percent would approach from the west along U Street, and 30 percent would approach from the northwest along Florida Avenue.

Other Development Project Traffic Assignments

The trips shown in Table 3-2 were assigned to the public road network based on previously-described trip distributions. The results are shown on Figure 3-1.

Background Traffic Growth

Annual background traffic growth was estimated at 0.5 percent per year compounded for two (2) years for project buildout (2007). This growth rate was applied to all movements on Georgia Avenue, Florida Avenue, Barry Place, Sherman Street, Bryant Street, U, V, W, 8th, and 9th, and 10th Streets.

Background Traffic Forecasts

Background peak hour traffic forecasts, without the development of Atlantic South, were estimated based on existing traffic counts, traffic generated by the other approved developments and background traffic growth. The background traffic forecasts for the year of project buildout (2007) are shown on Figure 3-2.

Background Future Levels of Service

Future peak hour levels of service, without the development of Atlantic South, were estimated at the sixteen (16) key intersections in the study area for the year of project buildout (2007) based on: the intersection lane usage and traffic control shown on Figure 2-1; the background traffic forecasts shown on Figure 3-2; and the Highway Capacity Manual. The results are presented in Appendix C, and are summarized in Table 3-1.

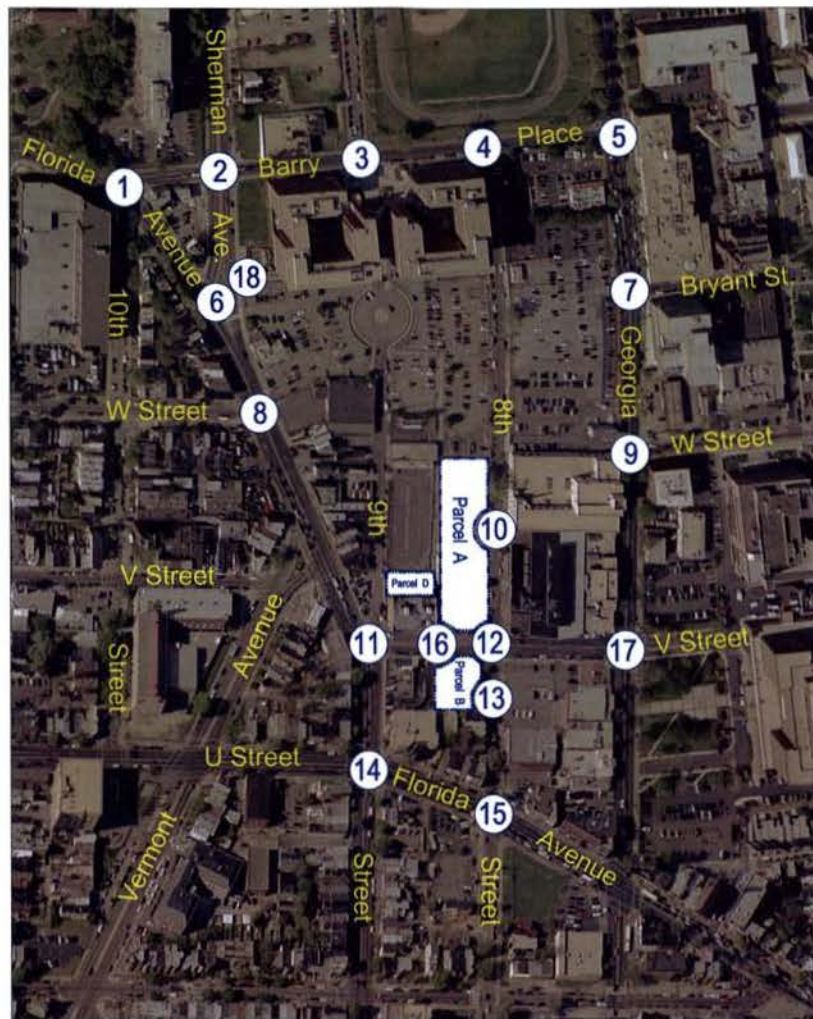
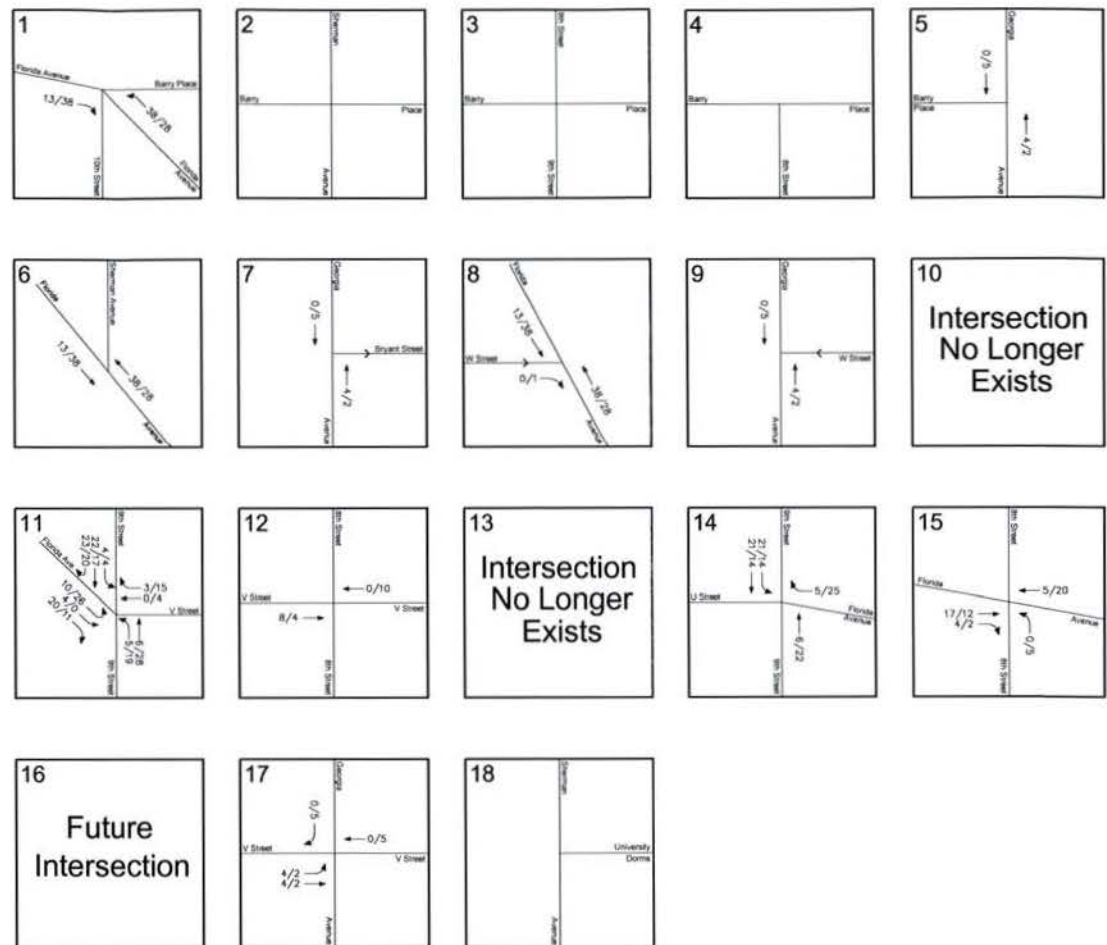


Figure 3-1
Approved Pipeline Developments
(Atlantic South)

Atlantic Plumbing Site
Washington, D.C.

AM PEAK HOUR
PM PEAK HOUR
000/000
North

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

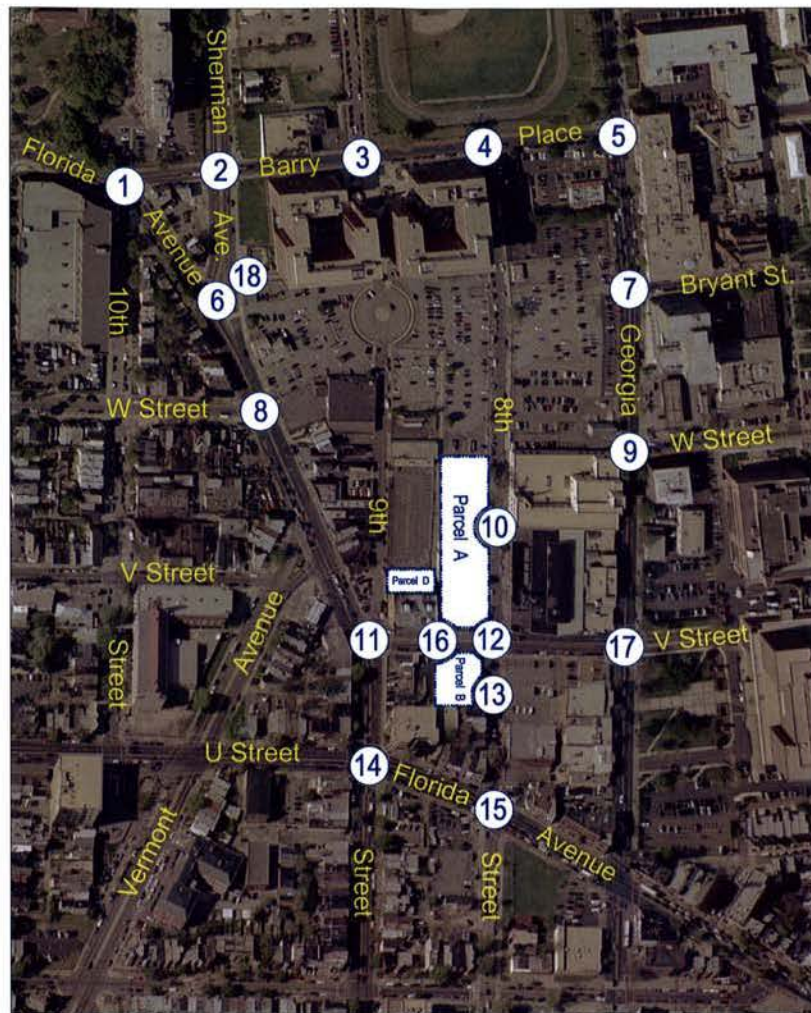
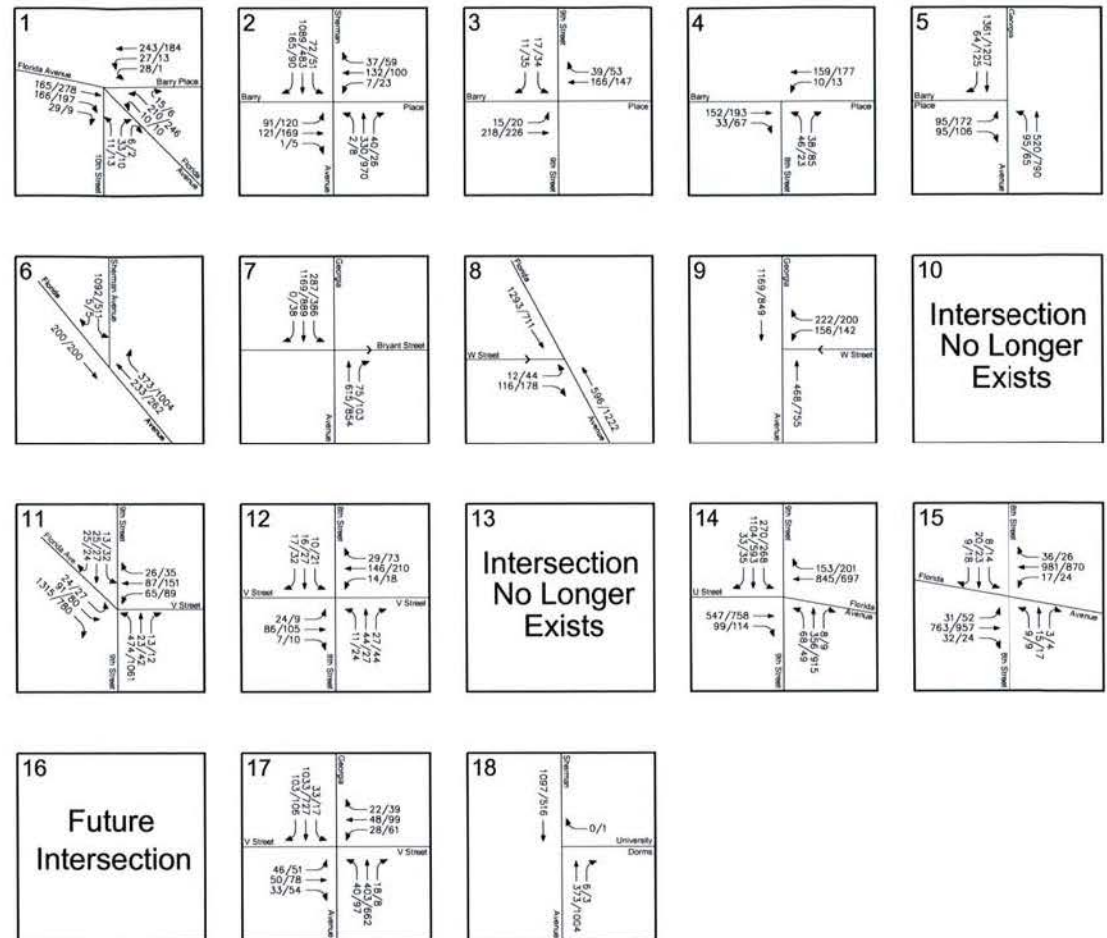


Figure 3-2
Background Peak Hour Traffic Volumes
(Atlantic South)

Table 3-1 indicates that the majority of the key intersections will continue to operate at an overall acceptable level of service (LOS) "D" or better during both the AM and the PM peak hours. The addition of the background growth rate and the other approved developments will not significantly impact the intersections that are currently operating near or at capacity.

Site Trip Generation Analysis

The number of trips that will be generated by the development of Atlantic South were estimated based on: (1) Institute of Transportation Engineers (ITE) trip generation rates, (2) the proximity of the project to the U Street/African-American Civil War Memorial/Cardozo Metro stations, and (3) experience with other comparable projects in Washington, D.C.

As shown in Table 3-3, Parcel A is anticipated to generate 72 AM peak hour trips (16 in and 56 out), and 105 PM peak hour trips (65 in and 40 out), at project buildout. Parcel B is anticipated to generate 27 AM peak hour trips (8 in and 19 out), and 47 PM peak hour trips (26 in and 20 out), at project buildout. Parcel D is anticipated to generate 8 AM peak hour trips (3 in and 5 out), and 16 PM peak hour trips (8 in and 8 out), at project buildout.

These estimates assume that 50 percent of all site-generated residential person-trips and 70 percent of all site-generated retail person-trips would be made on foot, by Metro, or by some other non-auto mode. The prevailing mode splits for work trips in this neighborhood is 71 percent, according to the 2000 U.S. Census.

Presently, Parcel A generates 18 AM peak hour trips (13 in and 5 out) and 13 PM peak hour trips (1 in and 2 out), Parcel B generates 3 AM peak hour trips (1 in and 2 out) and 3 PM peak hour trips (2 in and 1 out), and Parcel D does not generate traffic.

Therefore, re-development of Parcel A would generate 54 net additional AM peak hour trips and 92 net additional PM peak hour trips, and Parcel B would generate 24 net additional AM peak hour trips and 43 net additional PM peak hour trips.

Site Traffic Assignments

The site-generated traffic volumes were assigned to the public road network according to the directional distribution described above. The resulting site traffic assignments are shown on Figure 3-3.

Total Future Traffic Forecasts

These site traffic assignments were added to the future background traffic volumes shown on Figure 3-2 to yield the total future traffic forecasts shown on Figure 3-4.

Total Future Levels of Service

Future peak hour levels of service with the development of Atlantic South were estimated at the key intersections in the study area based on: the lane usage and traffic controls shown on Figure 2-1; the total future traffic forecasts shown on Figure 3-4; and the Highway Capacity Manual. The results are presented in Appendix D and summarized in Table 3-1.

Table 3-1 indicates that the majority of the key intersections will continue to operate at an overall acceptable level of service (LOS) "D" or better during both the AM and the PM peak hours. The development of Atlantic South will not significantly further impact the intersections that are currently operating near or at capacity.

The driveways to access the underground parking garage for Parcels A and B will operate at acceptable LOS "A" and "B" during both the AM and PM peak hours.

Parking Analysis

Parcels A and D are zoned CR and Parcel B is zoned ARTS/C-2-B. The District of Columbia zoning ordinance minimum parking requirement in these zones for apartment houses or multiple dwellings are one (1) space for every three (3) units and for the retail are one (1) space for each additional 750 S.F. in excess of 3,000 S.F.

Auto availability for owner-occupied residential units in Census Tract 35, in which the subject sites are located, is 1.01 vehicles per unit, according to the 2000 U.S. Census. Approximately 29 percent of all owner-occupied households owned no vehicle; 42 percent owned one (1) vehicle; 30 percent owned two (2) or more vehicles.

Per the District of Columbia zoning ordinance minimum parking requirements, Parcel A would require 106 parking spaces (101 residential spaces and 5 retail spaces), Parcel B would require 26 parking spaces (24 residential spaces and 2 retail spaces), and Parcel D would require 4 residential parking spaces.

Parcels A and D will be served by underground parking with approximately 328 parking spaces. This is 222 more spaces than the minimum number of spaces required by the zoning ordinance. Parcel B will be served by underground parking with approximately 73 parking spaces. This is 47 more spaces than the minimum number of spaces required by the zoning ordinance.

In summary, the proposed on-site parking supply would exceed the minimum zoning parking requirements and prevailing parking demands for this neighborhood.

Loading Analysis

For residential developments, the District of Columbia zoning ordinance requires one (1) 55-foot-deep loading berth, one (1) 200-square-foot loading platform, and one (1) 20-foot-deep service/delivery loading space for the subject site. For retail developments with more than

5,000 S.F. to 20,000 S.F. of gross floor area, the District of Columbia zoning ordinance requires one (1) 30-foot-deep loading berth and one (1) 100-square-foot loading platform.

The proposed loading/delivery/service facilities would adequately meet the project and DC minimum zoning requirements. The truck turning maneuvers for Atlantic North are shown on Figure 3-5 and 3-6.

Table 3-3
Atlantic South Plumbing Site
Site Trip Generation Analysis ¹

Land Use	Land Use Code	Size	Units	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Existing Development²									
Parcel A									
Existing Atlantic Plumbing Warehouse				13	5	18	1	12	13
Parcel B									
Existing Building				1	2	3	2	1	3
Parcel D									
Dumpster Gated Area				0	0	0	0	0	0
Proposed Development									
Parcel A									
Residential Condominium	230	303 D.U.		21	104	125	100	49	149
Reduction for Transit Use ³		50%		11	52	63	50	25	75
Net New Residential Trips				10	52	63	50	24	75
Retail	820	6,245 S.F.		18	12	30	48	52	100
Reduction Transit Use ³		70%		13	8	21	34	36	70
Net New Residential Trips				5	4	9	14	16	30
Total Net New Site-Generated Trips for Parcel A				3	51	54	63	28	92
Parcel B									
Residential Condominium	230	71 D.U.		7	32	39	30	15	45
Reduction for Transit Use ³		50%		3	16	20	15	7	23
Net New Residential Trips				4	16	20	15	8	23
Retail	820	4,306 S.F.		15	9	24	38	41	79
Reduction Transit Use ³		70%		10	7	17	27	29	55
Net New Residential Trips				4	3	7	11	12	24
Total Net New Site-Generated Trips for Parcel B				7	17	24	24	19	43
Parcel D									
Residential Condominium	230	10 D.U.		1	7	8	6	3	9
Reduction for Transit Use ³		50%		1	3	4	3	1	5
Net New Residential Trips				0	4	4	3	2	5
Retail	820	1,444 S.F.		7	5	12	18	20	38
Reduction Transit Use ³		70%		5	3	8	13	14	27
Net New Residential Trips				2	1	4	5	6	11
Total Net New Site-Generated Trips for Parcel D				3	5	8	8	7	16

Notes: ¹ Based on Trip Generation, 7th Edition, Institute of Transportation Engineers.

² Trips observed during peak hour traffic counts conducted on Tuesday, April 12, 2005.

³ Transit reduction based on "Development-Related Ridership Survey II", by JHK & Associates, 1989 and the 2000 US Census.

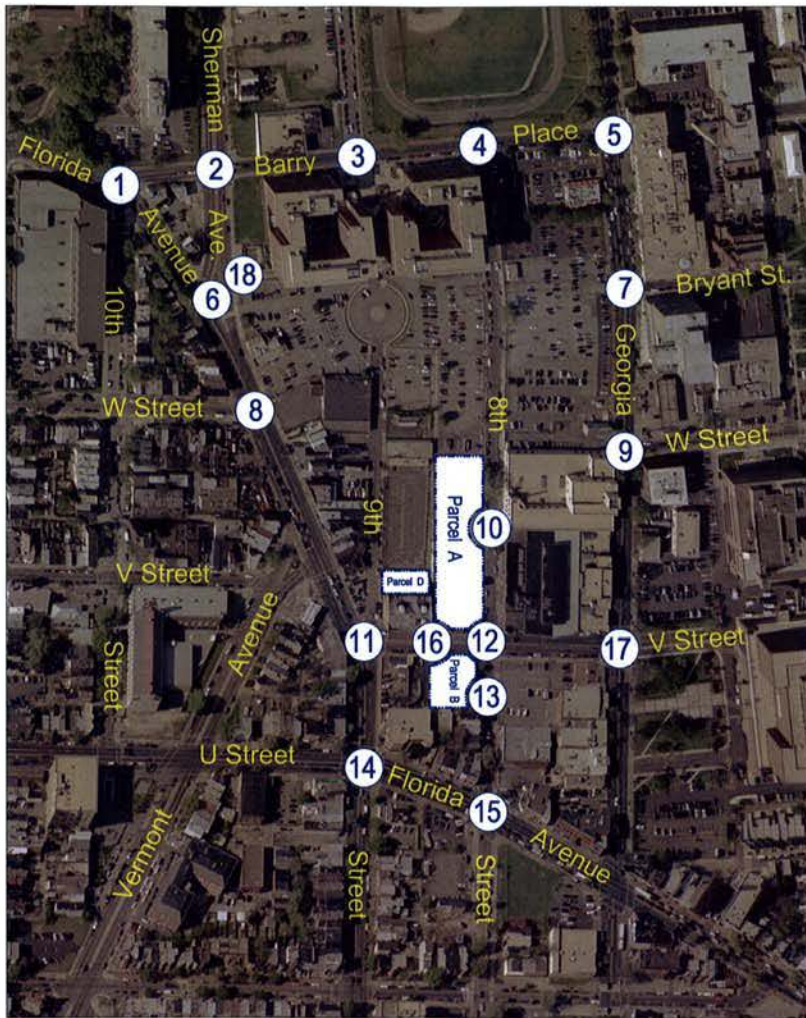
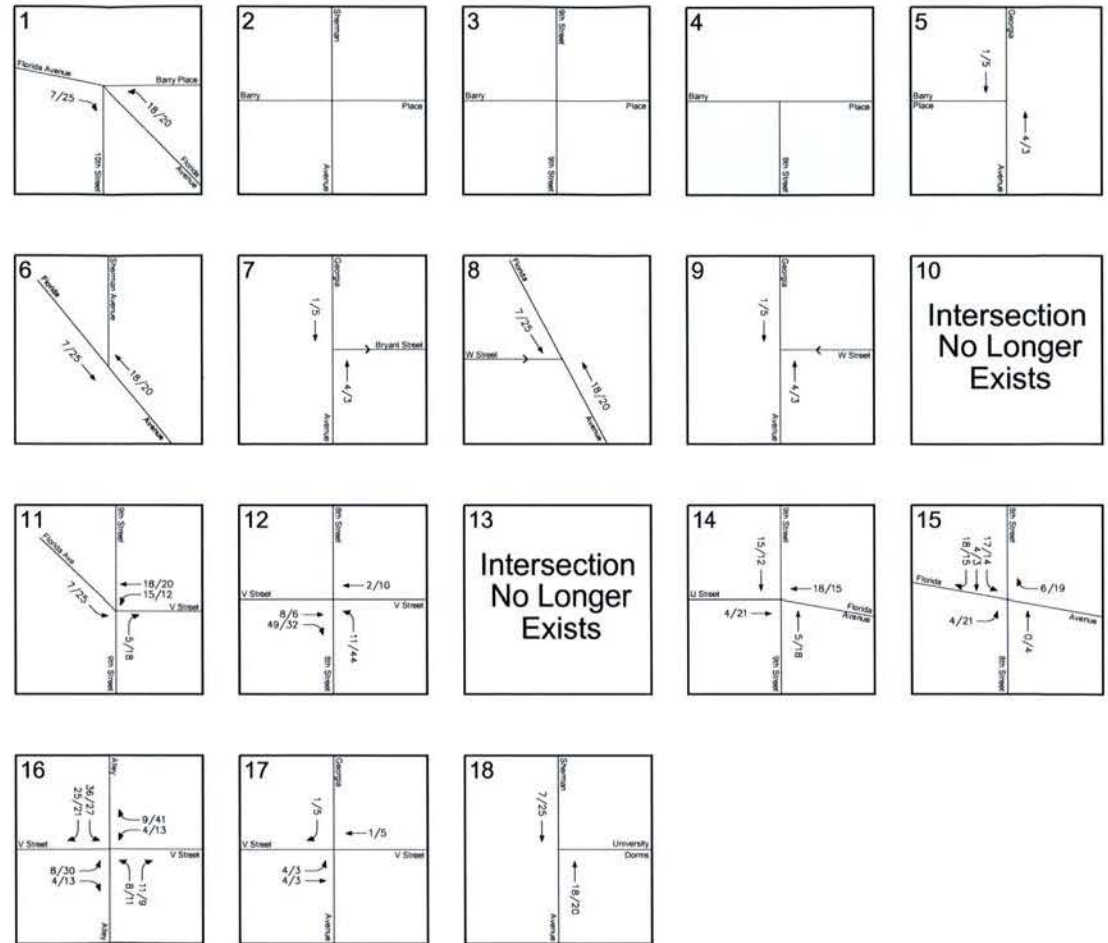


Figure 3-3
Site-Generated Trips
(Atlantic South)

AM PEAK HOUR
PM PEAK HOUR
000/000



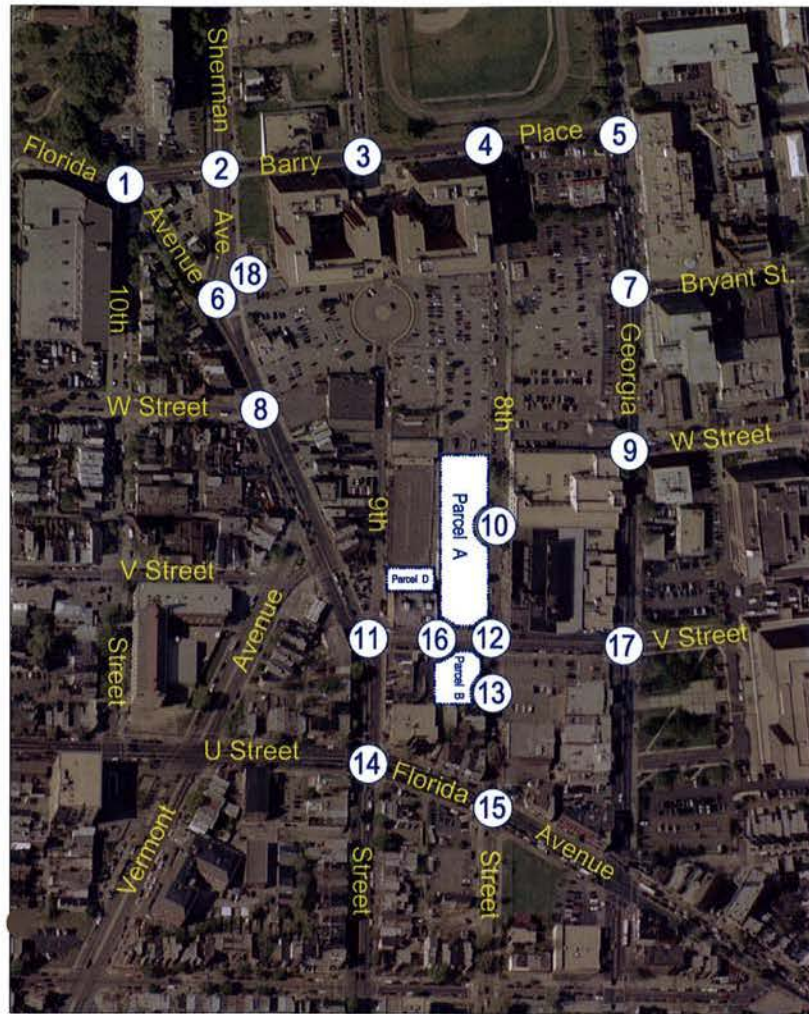
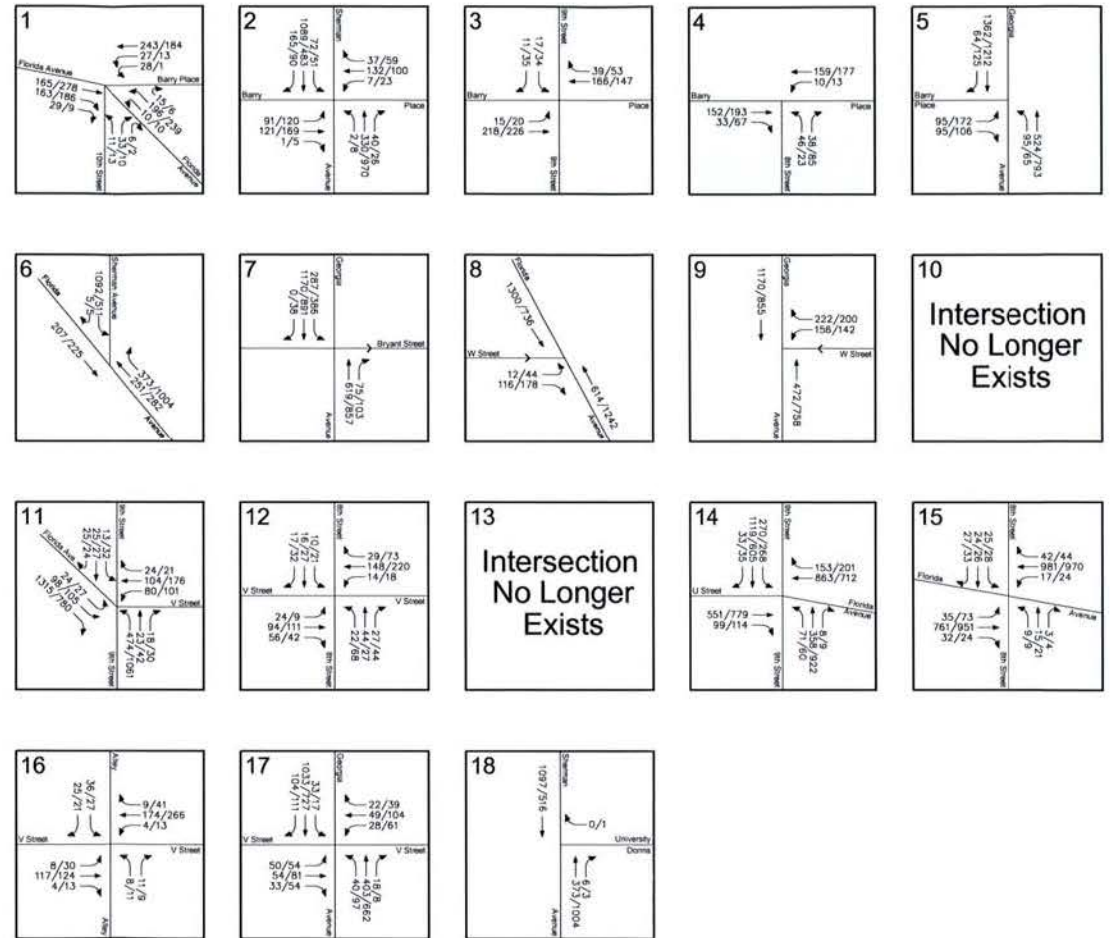
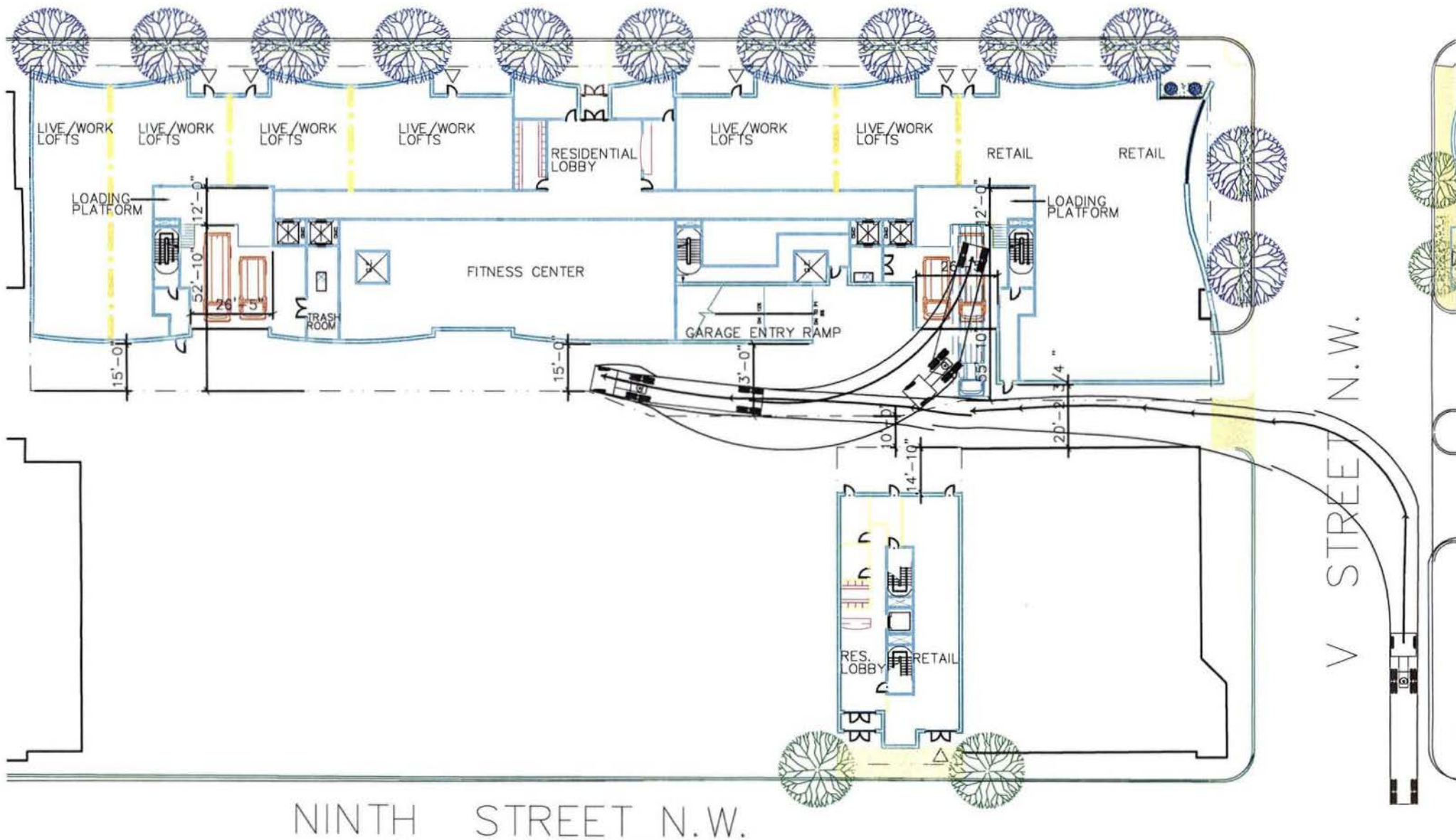
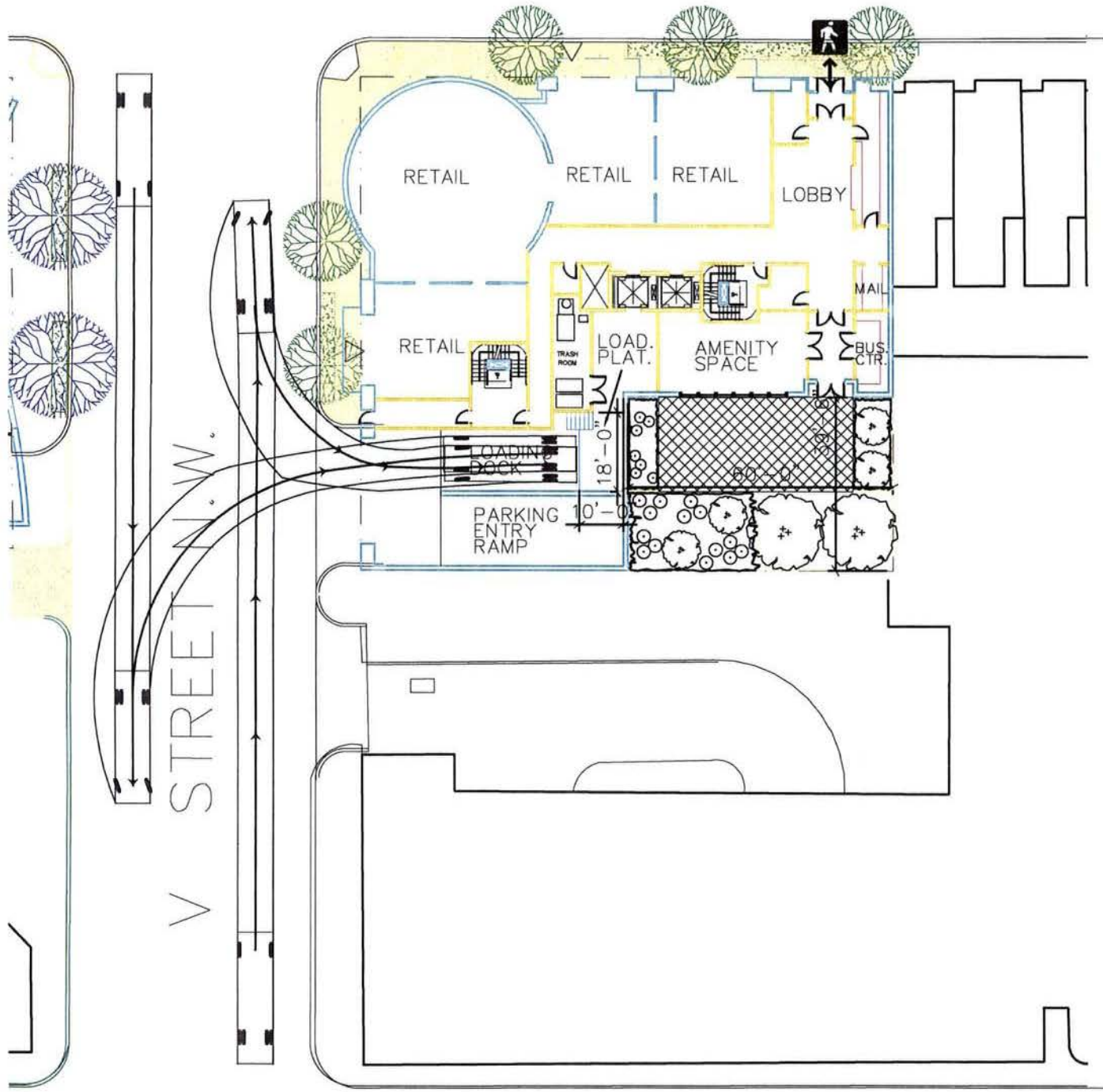


Figure 3-4
Total Future Peak Hour Traffic Volumes
(Atlantic South)

EIGHTH STREET N.W.





Section 4

FEASIBILITY ANALYSIS

Bryant Street and W Street Proposed Extension

The DC Department of Transportation (DDOT) and Office of Planning (OP) is considering extending Bryant Street from Georgia Avenue to the Florida Avenue/Sherman Avenue intersection, and W Street from Georgia Avenue to 9th Street which will provide a new connection through and to the Howard University campus.

The extension of Bryant and W Streets is anticipated to result in greater accessibility to the Howard University Campus and the new residential developments. It is also anticipated to improved east/west traffic flow between Georgia Avenue and Florida Avenue.

Proposed Design of Bryant Street and W Street Extension

Bryan Street is proposed to be extended from Georgia Avenue westbound to the intersection of Florida Avenue and Sherman Avenue. Bryant Avenue is currently a one-way, one-lane eastbound street originating at Georgia Avenue. The extension is proposed to be a two-way and two-lane street, with shared turn lanes at 8th and 9th Streets, which would operate under stop sign control. On-street parking would be provided on Bryant Street between Georgia Avenue and 9th Street. The existing traffic signal at the Bryant Street/Georgia Avenue is proposed to be modified to compensate for the new movement, without modifying the existing cycle length of 100 seconds.

Currently, the intersection of Florida Avenue/Sherman Avenue operates at a LOS "F" during the morning peak hour and at a LOS "C" during the PM peak hour. A traffic circle (roundabout) is proposed at the intersection of Florida Avenue/Sherman Avenue/University Dorms/Bryant Street Extension which will improve the existing capacity constraints. This traffic circle is proposed to contain two 15-foot lanes, with an island diameter of approximately 80 feet (for a total circle diameter of 140 feet). To accommodate Metrobuses within the traffic circle, it is recommended that the inner lane be widened to 20-feet, which would result in slightly better levels of service during both the AM and PM peak hours.

W Street is proposed to be extended from Georgia Avenue westbound to 9th Street. W Street is currently a one-way, one-lane westbound street at Georgia Avenue. The extension is proposed to be a two-way, two-lane road with shared turn lanes, which would operate under stop sign control at the intersections of 8th and 9th Streets. On-street parking is proposed to be provided on W Street from Georgia Avenue to 9th Street. The existing traffic signal at the Georgia Avenue/W Street would be modified to compensate for the new movement, without modifying the existing cycle length of 100 seconds.

Redistribution of Existing Travel Patterns, Approved Developments and Site Generated Trips

Existing travel patterns were studied to determine the redistribution of traffic for the Bryant Street and W Street extensions. The following movements were modified accordingly:

- A portion of the southbound left turn volume on Florida Avenue at the intersection with Barry Place and 10th Street was reassigned to the proposed traffic circle and continue traveling eastbound along the Bryant Street Extension.
- A portion of the northbound right turning movement along 8th Street at the intersection with Barry Place was reassigned to the right turn at the Bryant Street Extension, followed by a left turn at the Georgia Avenue intersection.
- A portion of the southbound left turning movement along 8th Street at the intersection with V Street was reassigned to the left turn at the Bryant Street Extension, followed by a right turn at the Georgia Avenue intersection.
- A portion of the southbound right turning movement along Georgia Avenue at the intersection with V Street was reassigned to the right turn at the Bryant Street Extension, followed by a through movement at 8th Street.
- The portion of the southbound Florida Avenue movement that continues onto V Street to make a left turn onto Georgia Avenue was reassigned to the traffic circle instead, and continue along the Bryant Street Extension to make a left turn onto Georgia Avenue.
- The southbound right turning traffic along 8th Street at the intersection with V Street was modified to allow a portion of the traffic to make a right turn at the Bryant Street Extension, followed by a left turn at the Georgia Avenue intersection.

The approved development trips and site generated traffic from Atlantic Plumbing were also redistributed based on the extension of Bryant and W Streets, and were added to the redistributed existing traffic. Appendix E contains figures showing the redistributed existing, background and total future peak hour volumes.

Existing, Background and Total Future Levels of Service

Using AASidra, the traffic circle was analyzed under existing, background and total future conditions using the redistributed peak hour volumes. The results are shown on Table 4-1 and indicate that the traffic circle will operate at overall acceptable LOS "B" and "A" during the AM and PM peak hours for existing and background conditions, and at LOS "C" and "A" during total future conditions. The proposed traffic circle will, therefore, improve the existing, background, and total future levels of service significantly. In addition, a traffic circle is considered a reliable traffic calming device, so the number of traffic accidents occurring at this existing intersection is anticipated to be greatly reduced.

The intersections of 8th and 9th Streets with the Bryant Street Extension and the W Street Extension are anticipated to operate at acceptable levels of service during both the AM and PM peak hours, due to the small amount of local traffic anticipated to utilize these roads.

Table 4-1
Atlantic South
Peak Hour Intersection Levels of Service ¹

Intersection	Type of Control	2005 Existing Conditions		2007 Background Conditions		2007 Total Future Conditions	
		AM	PM	PM	PM	PM	PM
Florida Avenue/Sherman Avenue/ University Dorns/Bryant Street Extension	Roundabout						
Southeastbound		D[37.9]	B[10.9]	D[51.1]	B[10.8]	F[85.4]	B[11.3]
Northwestbound		A[6.2]	A[6.4]	A[6.2]	A[6.5]	A[6.3]	A[6.5]
Southwestbound		B[11.3]	B[12.8]	B[11.4]	B[12.9]	B[11.5]	B[12.9]
Westbound		B[10.6]	B[12.1]	B[10.6]	B[11.4]	A[9.3]	B[10.9]
Southbound		B[16.7]	B[12.2]	B[18.9]	B[12.6]	C[23.6]	B[12.6]
Overall		B[16.7]	A[8.7]	B[19.8]	A[8.8]	C[27.7]	A[9.0]

Notes: ¹ Analysis performed using ssSidra 2.1.3.356

Section 5 CONCLUSIONS

The conclusions of this traffic impact study are as follows:

1. The majority of the key intersections currently operate at an overall acceptable level of service (LOS) "D" or better during both the AM and the PM peak hours, with exceptions at the intersections of Georgia Avenue/Barry Place, Florida Avenue/8th Street, Barry Place/Sherman Avenue, Florida Avenue/Sherman Avenue, and Florida Avenue/VV Street which operate near or at capacity.
2. Four other approved developments in the site vicinity were identified and will generate 124 AM peak hour trips and 180 PM peak hour trips.
3. These additional trips can be adequately accommodated at the key intersections in the study area. The addition of the background growth rate and the other approved developments will not significantly impact the intersections that are currently operating near or at capacity.
4. The proposed development of Atlantic South will generate 86 net additional AM peak hour trips and 151 net additional PM peak hour trips.
5. These additional site-generated trips can be adequately accommodated at the key intersections in the study area. The development of Atlantic South will not significantly further impact the intersections that are currently operating near or at capacity. The driveways to access the underground parking garage for Atlantic South (Parcels A and B) will operate at acceptable LOS "A" and "B" during both the AM and PM peak hour under stop sign control.
6. The proposed on-site parking supply would exceed the minimum zoning parking requirements and prevailing parking demands for this neighborhood. The proposed loading/delivery/service facilities would adequately meet the project and DC minimum zoning requirements.
7. The proposed construction of a traffic circle at the Florida Avenue/Sherman Avenue/Bryant Street Extension/University Dorms intersection greatly improves the overall existing, background, and total future levels of service.