WELLS & ASSOCIATES, LLC

TRAFFIC, TRANSPORTATION and PARKING CONSULTANTS

MEETING THE NEEDS OF A MOBILE SOCIETY

NEHEMIAH PUD
TRANSPORTATION IMPACT STUDY
WASHINGTON, D.C.

Prepared for:
Level 2 Development

Prepared by:
Wells & Associates, LLC

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NEHEMIAH PUD
TRANSPORTATION IMPACT STUDY
WASHINGTON, D.C.

TABLE OF CONTENTS

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LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

Section I
INTRODUCTION

This report presents the results of a revised transportation impact study of Level 2 Development's proposed redevelopment of the Nehemiah Shopping Center property, which is located in the northwest section of Washington, D.C. The subject site is bounded by 14th Street to the east, a public alley to the west, Chapin Street to the north and Belmont Street to the south, as shown on Figure 1-1. The original report was submitted on May 10, 2006.

The property is zoned C-2-B and is currently occupied by the Nehemiah Shopping Center. At the time of the traffic counts, the majority of the stores had already relocated to another site, and the remaining stores generated a small number of vehicle-trips.

Level 2 Development proposes to redevelop the subject site with a nine-story building that would contain 225 (±25) residential condominiums and 18,000 square feet (S.F.) of ground-floor retail space, and a 178-space underground parking garage for residents, as well as 18 surface retail parking spaces, as shown on Figure 1-2. All vehicular access to the two-level underground parking garage is proposed from the existing north-south public alley located between 14th and 15th Streets. The loading area will also be located in the existing alley and will be accessed either from Belmont Street or Chapin Street.

For purposes of this traffic analysis, the Nehemiah project was assumed to be completely built and occupied by 2009.

Tasks undertaken in this study included the following:

1. Review Level 2 Development's proposed development programs, plans prepared by Shalom Baranes 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 eleven (11) key intersections, including all access points to and from the public alley.

4. Analysis of existing levels of service at these intersections.

5. Identify the pipeline developments in the vicinity of the site and the anticipated regional growth in vehicular traffic within the study area.

6. Background future traffic volumes were forecasted for project buildout (2009).

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

8. The net 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 Metro Station, (3) experience with other comparable projects in Washington, D.C., and (4) existing shopping driveway traffic counts.

9. Total future traffic volumes were forecasted for 2009.

10. Total future levels of service were calculated at key intersections based on total future traffic forecasts, existing traffic controls, and existing intersection geometrics.

11. The adequacy of the proposed numbers of parking and loading spaces was evaluated.

12. Operational improvements required to adequately accommodate site traffic were identified.

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 the U.S. Census Bureau.

The conclusions of this study are as follows:

1. ***The majority of the key intersections currently operate at acceptable level of service (LOS) "D" or better during both the AM and the PM peak hours. It is important to note, however, that the eastbound movement at the intersection of 14th Street with Florida Avenue currently operates near capacity at LOS "E" during the PM peak hour. A slight modification of the existing traffic signal timings would improve the operation of the eastbound movement at this intersection.***

2. ***The eight (8) other developments in the study area will generate a total of 198 AM peak hour trips and 384 PM peak hour trips.***

3. ***These additional trips can be adequately accommodated at the majority of the key intersections in the study area, if the existing traffic signal timings at the intersection of 14th Street with Florida Avenue are slightly modified.***

4. ***The proposed redevelopment of the subject site will generate 72 AM peak hour trips (16 in and 56 out) and 106 PM peak hour trips (66 in and 40 out). This is 16 fewer AM peak hour trip and seven (7) fewer PM peak hour trips than generated by the existing Nehemiah Shopping Center at the time of the traffic counts.***

5. ***The site-generated trips can be adequately accommodated at the majority of the key intersections in the study area with slight traffic signal timing modifications at the intersection of 14th Street and Florida Avenue.***

6. ***The proposed residential parking supply will adequately meet anticipated residential parking demands. The proposed retail parking supply will adequately accommodate anticipated retail parking demands if the proposed retail tenants serve local neighborhood residents, not patrons who might otherwise drive from more distant neighborhoods in the District of Columbia or the suburbs.***

7. ***The proposed parking and loading/service facilities will adequately serve the proposed project.***

8. ***A total of 84 residential (at 2.0 FAR) and 59,987 S.F. of retail space (at 1.5 FAR) could be built by-right on the subject site. The uses would generate 20 percent additional AM peak hour trips and 61 percent additional PM peak hour trips. The proposed development, therefore, would have less traffic impact than the by-right development.***

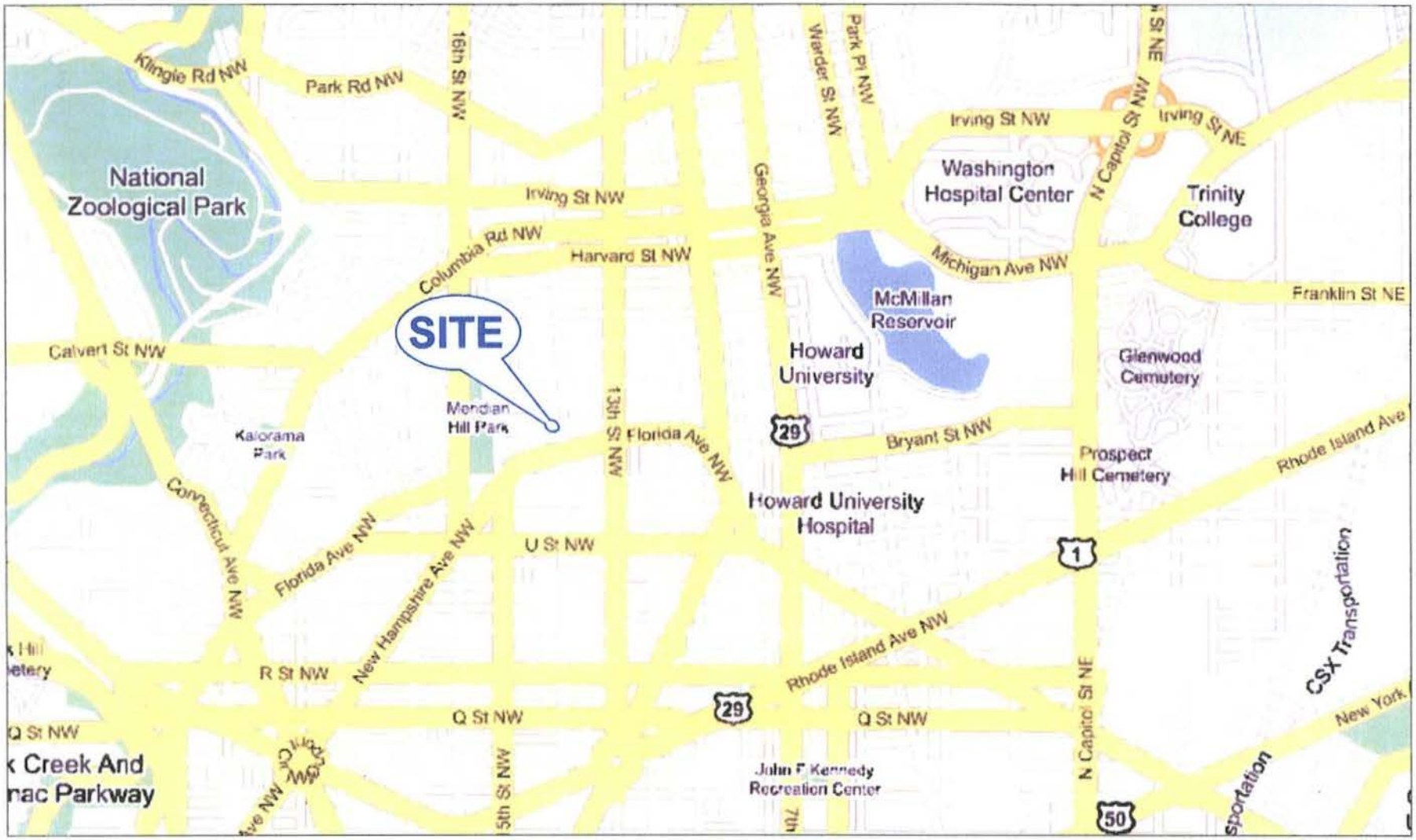

Figure 1–1
Site Location

North
Schematic

Nehemiah PUD
Washington, D.C.

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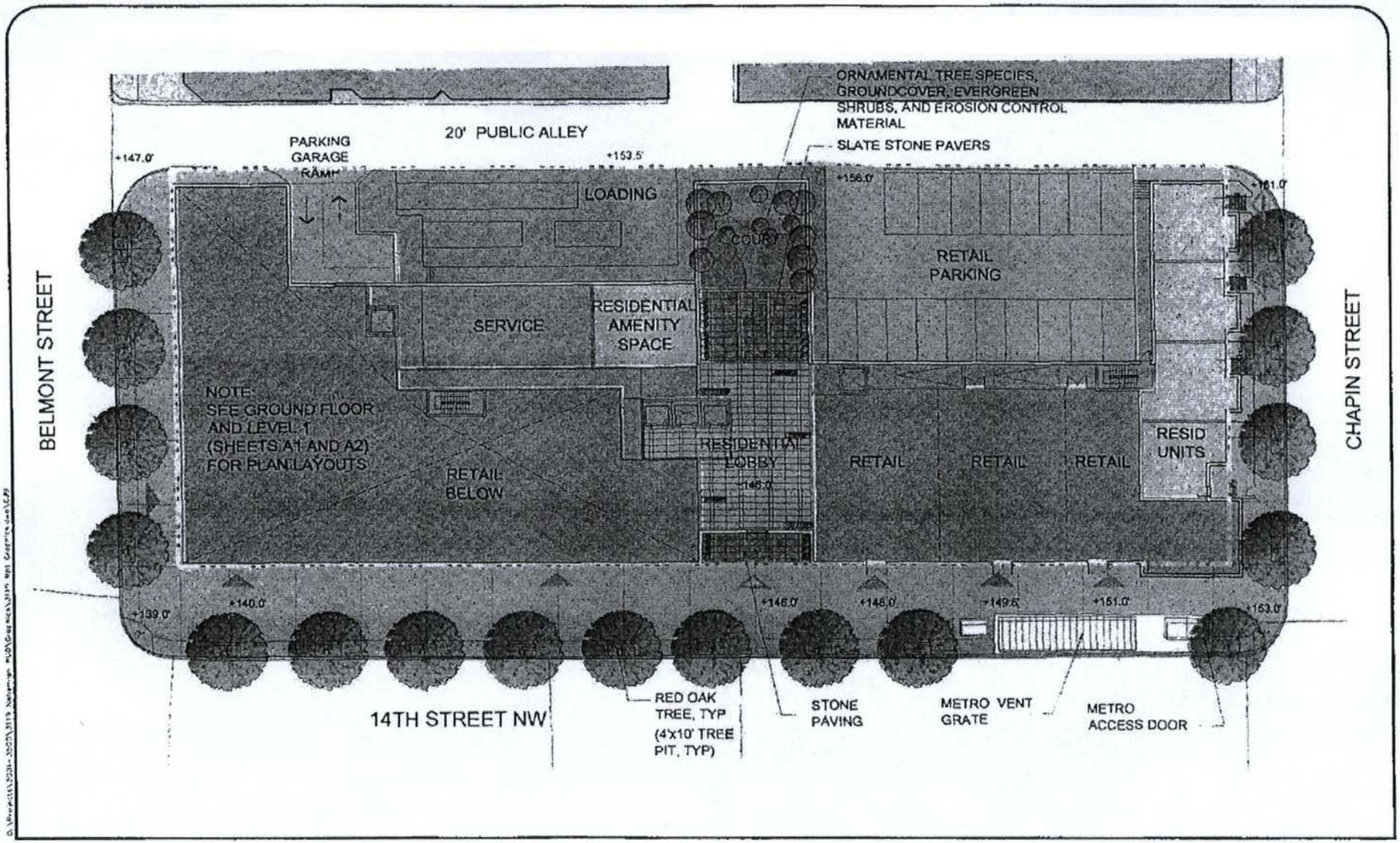

Figure 1–2
Proposed Site Plan

North Schematic

Section 2
BACKGROUND DATA

Study Scope

This study includes the following intersections:

1. 15th Street/Chapin Street
2. Chapin Street/Public Alley
3. 14th Street/Chapin Street
4. 14th Street/Belmont Street (east)
5. 14th Street/Belmont Street (west)/Existing Parking Garage Driveway
6. 14th Street/Florida Avenue
7. Belmont Street (west)/Public Alley
8. Belmont Street (west)/15th Street
9. 15th Street/Public Alley
10. Chapin Street/Nehemiah Shopping Center Driveway
11. Belmont Street (west)/Nehemiah Shopping Center Driveway

This study also includes the following eight (8) other development projects in the site vicinity. Field observations, the Local Initiatives Support Corporation (LISC), the Washington, D.C. Real Estate information website, and the Index of Projects for DC were used to identify these other developments.

1. ***The Flats at Union Row*** (approved). This 280 residential condominium project includes 24,000 S.F. of ground-level retail space. It is located on the northeast corner of 14th and V Streets between 13th and 14th Streets.

2. ***Gateway 34*** (approved). This 48-unit residential project includes 4,000 S.F. of ground-level retail space. It is located on the northwest corner of 14th Street and Florida Avenue.

3. ***View 14*** (approved). This recently-approved 171 residential condominium development and 26,884 S.F. of ground-floor retail space is located on the east side of 14th Street between Florida Avenue and Belmont Street (east).

4. ***The Belmont*** (approved). This 28-unit townhouse development is located just east of the north-south alley between 13th and 14th Streets. The site will be served by 14 off-street parking spaces accessible via the existing system.

5. ***The Fedora at Meridian Hill*** (approved). This 103-unit residential development is located at 1451 Belmont Street west of the public alley.

6. ***Meridian II*** (planned). This 16-unit residential development is planned to be constructed at the northeast corner of Chapin Street and 15th Street.

7. ***The Barcelona*** (planned). This 30-unit residential development is planned to be constructed at 1431-1435 Chapin Street.

8. ***1412 Chapin Street, N.W.*** (planned). This 33-unit residential development is planned to be constructed.

The impacts of these approved projects and the subject project were evaluated at project buildout, which is anticipated to occur in 2009.

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 from the Nehemiah project is provided by 14th and 15th Streets, Belmont Street, Chapin Street, and Florida Avenue. Existing intersection lane use and traffic control at key intersections in the site vicinity is shown on Figure 2-1.

14th Street is a north-south four-lane street with a posted speed limit of 25 miles per hour (mph). A bus stop is located on the east side of 14th Street just south of Belmont Street (east). The intersections of 14th Street with Belmont Street (west and east) are controlled by a stop sign, and the intersection of 14th Street with Florida Avenue is controlled by a traffic signal.

Three unrestricted curb parking spaces are located on the east side of 14th Street just north of Florida Avenue. Unrestricted curb parking is permitted on the west side of 14th Street north of Belmont Street, adjacent to the Nehemiah Center. No curb parking is permitted on the west side of 14th Street between Florida Avenue and Belmont Street.

15th Street is a one-lane and one-way northbound street with a posted speed limit of 15 mph in the vicinity of Belmont Street and the residential public alley. The posted limit increases to 30 mph in the vicinity of Chapin Street. Two-hour curb parking is allowed on the east side of 15th Street except from 9:30 AM to 11:30 AM on Mondays for street cleaning.

Florida Avenue is an east-west, two-lane street with a posted speed limit of 25 mph. Two-hour parking is permitted on the north side of Florida Avenue adjacent to the Comcast site between 14th Street and the existing north-south alley. One-hour parking is permitted on the south side of Florida Avenue east of 14th Street. Zone 1 Residential Permit Parking is allowed on both sides of the eastern portion of Florida Avenue adjacent to existing residences. Non-residents are allowed to park in these spaces for up to two hours between 7:00 AM and 8:30 PM Monday through Friday.

Belmont Street is an offset east-west two-lane street with a posted speed limit of 25 mph. Belmont Street (east) connects 13th and 14th Streets. Belmont Street (west) is located south of Belmont Street (east) and connects 14th and 15th Streets. Belmont Street is mostly posted as Zone 1 Residential Permit parking.

Chapin Street is a one-lane and one-way eastbound street between 15th Street and the public alley. Between the public alley and 14th Street, Chapin Street is a two-lane and two-way street. The posted speed limit along Chapin Street is 25 mph. For Zone 1 Residential Permit holders, two-hour curb parking is allowed from 7:00 AM to 8:30 PM between the public alley and 15th Street, and one-hour curb parking is allowed from 9:00 AM to 6:30 PM between the public alley and 14th Street.

Existing Traffic Counts

Vehicle Traffic Counts. Existing AM and PM peak period traffic counts were conducted on Tuesday, April 19, 2005, by Wells & Associates at the following intersections for the View 14 traffic impact study:

1. 14th Street/Belmont Street (east)
2. 14th Street/Belmont Street (west)/Existing Parking Garage Driveway
3. 14th Street/Florida Avenue

Additional AM and PM peak period traffic counts were conducted on Wednesday, January 25, 2006, by Wells & Associates at the following intersections:

4. 15th Street/Chapin Street
5. Chapin Street/Public Alley
6. 14th Street/Chapin Street
7. Belmont Street (west)/Public Alley
8. Belmont Street (west)/15th Street
9. 15th Street/Public Alley

To capture the existing trips at the Nehemiah Shopping Center, existing AM and PM peak period traffic counts also were conducted on Tuesday, January 31, 2006, by Wells at the following intersections:

10. Chapin Street/Nehemiah Shopping Center Driveway
11. Belmont Street (west)/Nehemiah Shopping Center Driveway

Vehicular traffic counts are presented in Appendix A and summarized on Figure 2-2. Pedestrian traffic counts were also conducted on the dates listed above and are presented in Appendix A and summarized on Figure 2-3.

During the traffic counts on January 25, 2006, Belmont Street (west) was closed to traffic during certain times of the day due to construction. Field observations indicated that only local residents were allowed to travel on Belmont Street (west). To compensate for the road closure, the traffic counts in the site vicinity were balanced using counts conducted at the 14th Street/Belmont Street (west) intersection on April 19, 2005 for the View 14 traffic impact study.

The AM peak hour generally occurred from 7:45 to 8:45 AM and the PM peak hour generally occurred from 5:45 to 6:45 PM.

Figure 2-2 indicates that 14th Street north of Florida Avenue presently carries 1,604 AM peak hour vehicle trips and 1,698 PM peak hour vehicle trips. During the AM peak hour, approximately 61 percent of the trips travel in the southbound direction and 39 percent travel

in the northbound direction. During the PM peak hour, approximately 40 percent of the trips travel in the southbound direction and 60 percent travel in the northbound direction.

Florida Avenue east of 14th Street presently carries 555 AM peak hour trips and 620 PM peak hour trips. During the AM peak hour, approximately 59 percent of the trips travel in the westbound direction and 41 percent travel in the eastbound direction. During the PM peak hour, approximately 44 percent of the trips travel in the westbound direction and 56 percent travel in the eastbound direction.

Existing Site Traffic. The Nehemiah Shopping Center, currently occupying the subject property, generates 88 AM peak hour trips (46 in and 42 out) and 113 PM peak hour trips (56 in and 57 out) based on the shopping center driveway counts conducted by Wells & Associates on January 31, 2006.

Public Transportation Facilities and Services

The subject site is directly served by one Metrobus line. The 52-53-54 Metrobus line (14th Street line) operates on 14th Street, and the closest bus stop to the subject property is located at the intersection of 14th Street/Chapin Street. The schedule for the 52-53-54 Metrobus line is contained in Appendix B. The U Street/African-American Civil War Memorial/Cardozo Metro Station is located at U Street/11th Street approximately 1,745 feet southeast of the Nehemiah development.

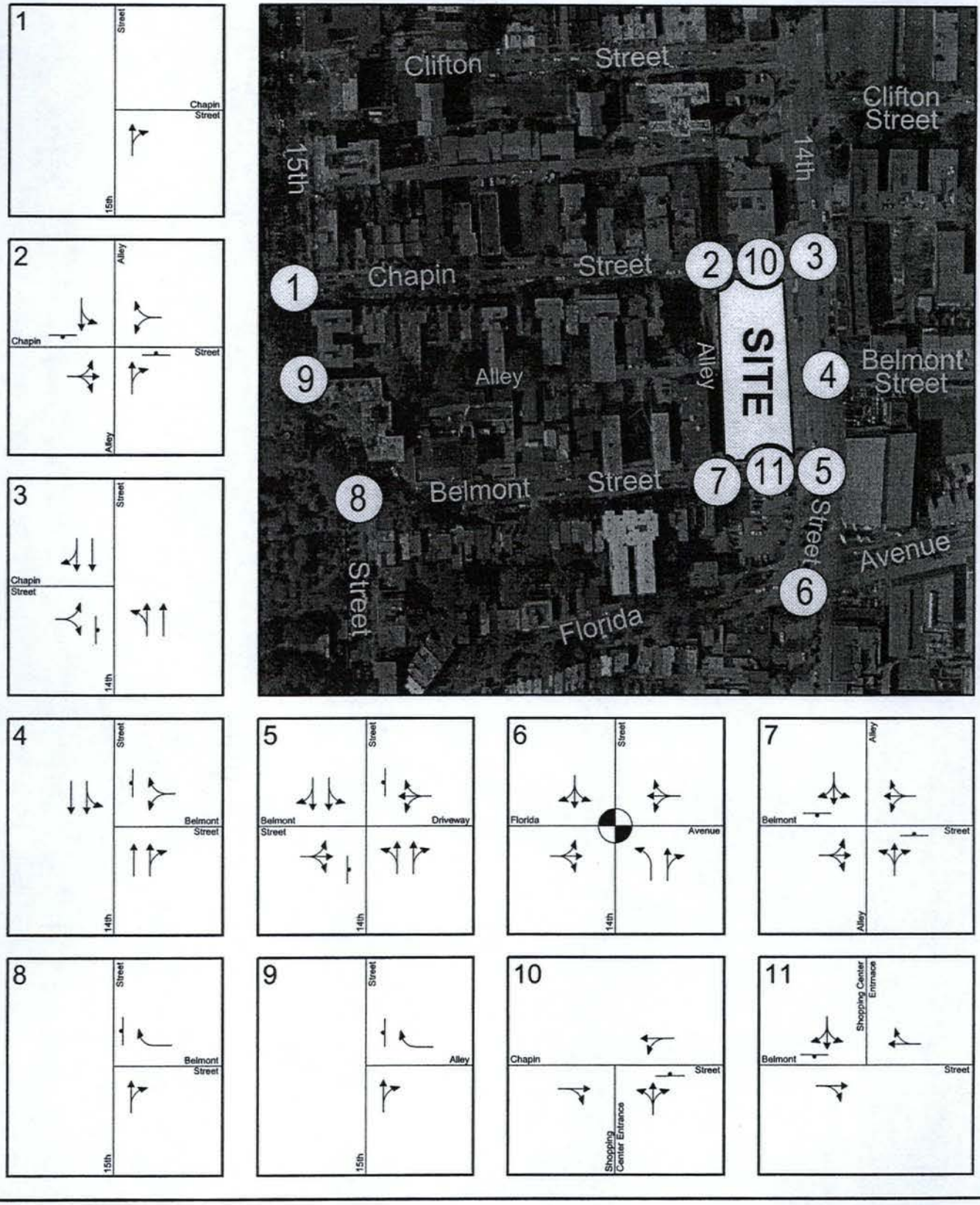

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Figure 2–1
Existing Lane Use And Traffic Control

← Represents One Travel Lane
Signalized Intersection
Stop Sign

North

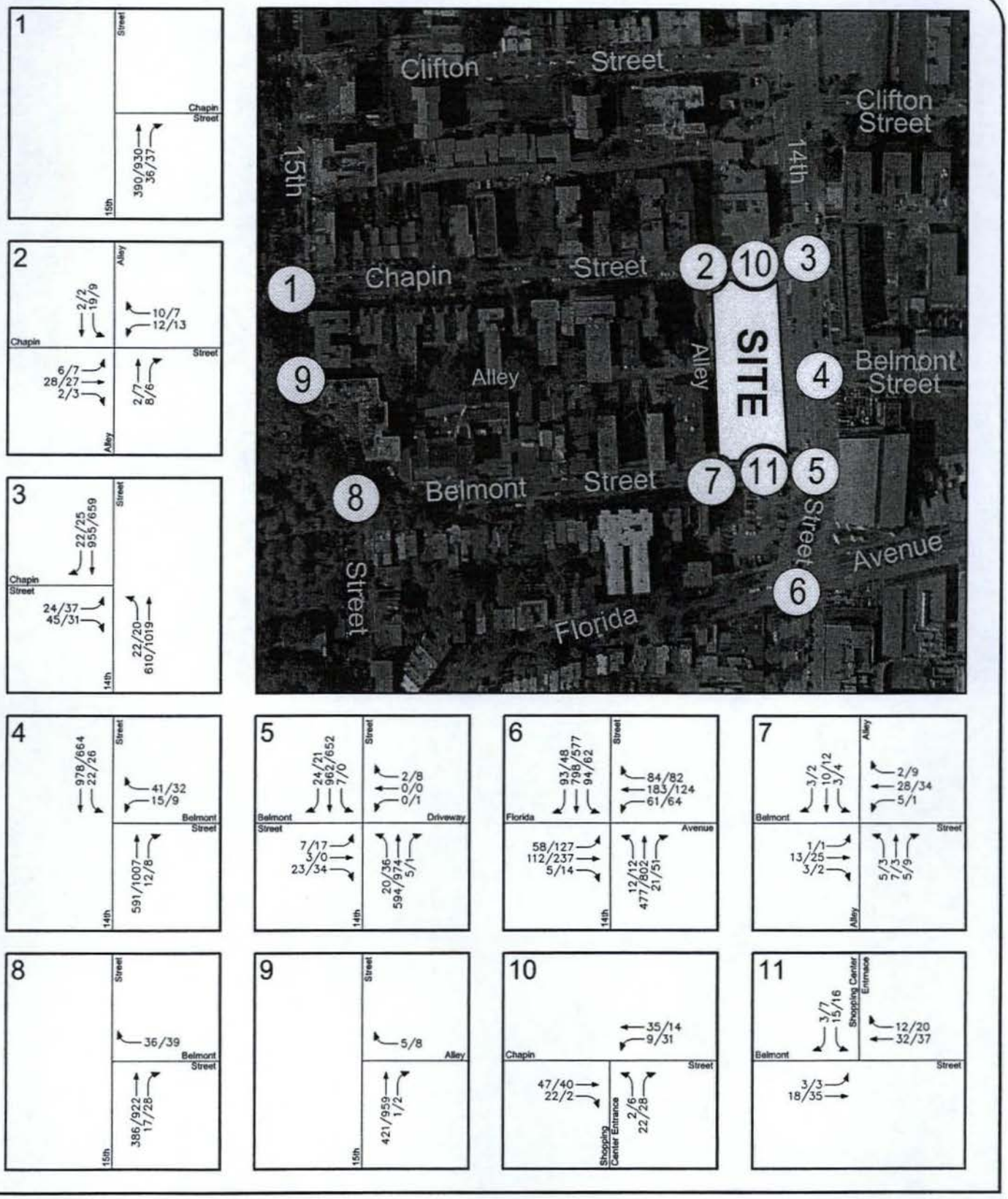

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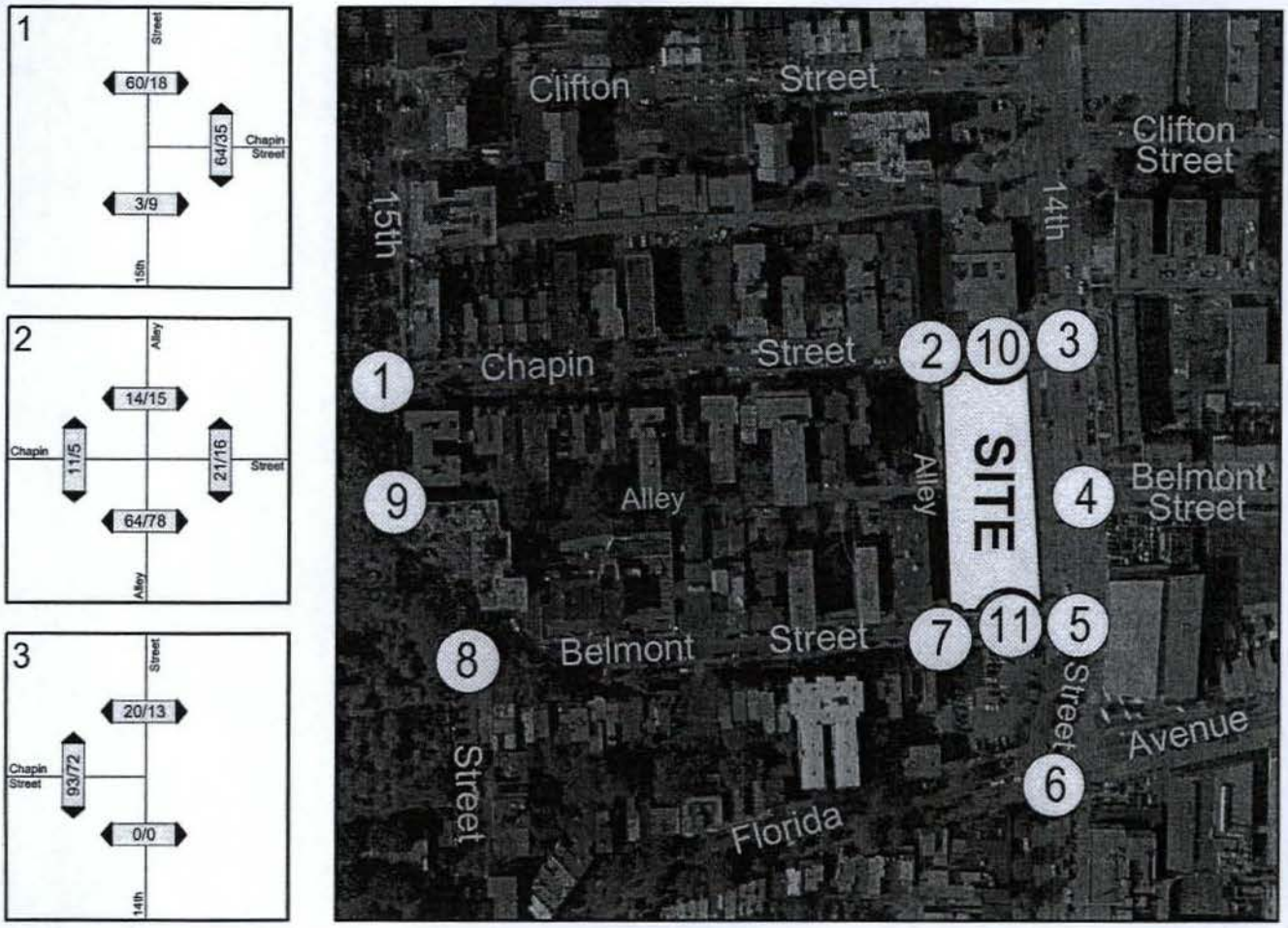
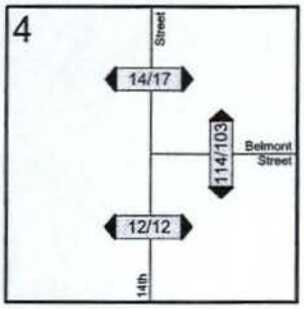
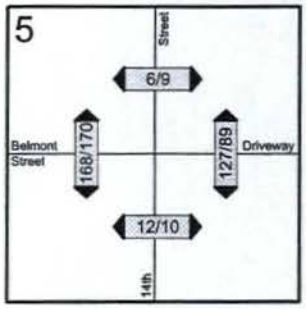
Figure 2–2
Existing Peak Hour Traffic Counts

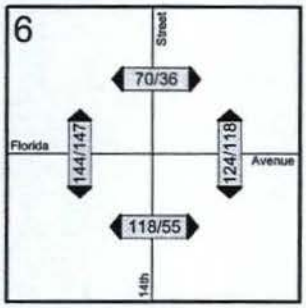
AM PEAK HOUR
PM PEAK HOUR
000/000

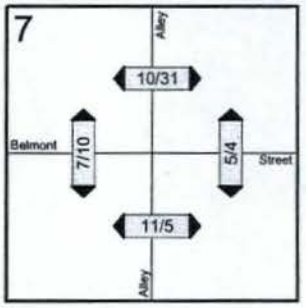
North

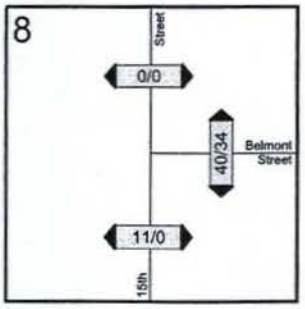


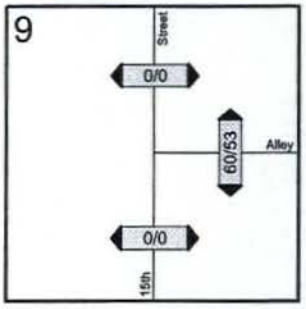


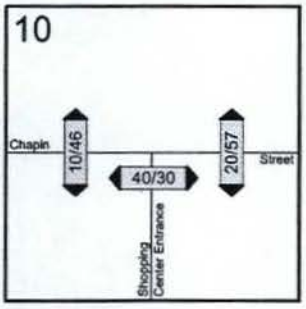












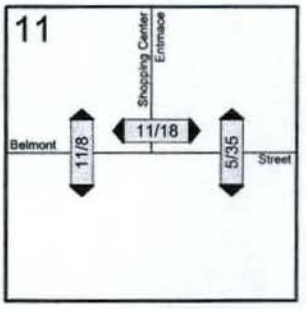


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Figure 2–3
Existing Peak Hour Pedestrian Traffic Counts

AM PEAK HOUR
PM PEAK HOUR
000/000

North

Section 3
ANALYSIS

Existing Levels of Service

Existing peak hour levels of service were estimated at the eleven (11) key intersections 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 C and summarized in Table 3-1.

Table 3-1 indicates that the majority of the key intersections currently operate at acceptable level of service (LOS) "D" or better during both the AM and PM peak hour. It is important to note, however, that the eastbound movement at the intersection of 14th Street with Florida Avenue operates near capacity at LOS "E" during the PM peak hour. A slight modification of the existing traffic signal timings would improve the operation of the eastbound movement at this intersection.

The eastbound movement at 14th Street/Belmont Street (west) theoretically operates at capacity at LOS "F" during both the AM and PM peak hours. In practice, the motorists turning onto 14th Street rely on gaps in the northbound and southbound 14th Street traffic created by nearby upstream and downstream traffic signals.

Other Development Trip Generation

The peak hour trips that will be generated by the eight (8) other development projects in the site vicinity were estimated based on their respective development programs, peak hour equations included in the Institute of Transportation Engineers' (ITE) Trip Generation Manual, 7th Edition, transit mode split estimates based on the WMATA Development Ridership Survey II (December 1989), and/or approved transportation impact studies.

As shown in Table 3-2, it is estimated that these projects will generate a total of 198 AM peak hour trips (42 in and 156 out) and 384 PM peak hour trips (234 in and 150 out) upon completion.

Table 3-1
Intersection Levels of Service Summary[1]

Type of Control	Intersection	Existing Conditions		2009 Background Conditions		2009 Total Future Conditions	
		AM	PM	AM	PM	AM	PM
1. 15th Street/Chapin Street							
Free	Northbound TR	N/A	N/A	N/A	N/A	N/A	N/A
2. Chapin Street/Public Alley							
Stop Sign	Eastbound LTR	A [1.2]	A [1.4]	A [0.8]	A [1.1]	A [1.0]	A [1.2]
	Westbound LR	A [4.0]	A [4.8]	A [4.3]	A [5.7]	A [5.1]	A [6.8]
	Northbound TR	A [8.7]	A [9.1]	A [8.7]	A [9.1]	A [8.7]	A [9.0]
	Southbound TL	A [9.2]	A [9.2]	A [9.5]	A [9.5]	A [9.8]	B [10.3]
3. 14th Street/Chapin Street							
Stop Sign	Eastbound RL	D [27.0]	D [29.0]	E [44.1]	E [45.5]	F [66.0]	E [44.6]
	Northbound RTL	A [1.5]	A [0.8]	A [1.6]	A [1.1]	A [1.4]	A [0.7]
4. 14th Street/Belmont Street (east)							
Stop Sign	Westbound RL	C [21.3]	D [27.5]	C [24.7]	E [48.5]	C [24.3]	E [45.7]
	Southbound	A [1.0]	A [2.1]	A [1.1]	A [3.2]	A [1.2]	A [3.3]
5. 14th Street/Belmont Street (west)/Existing Parking Garage Driveway							
Stop Sign	Eastbound LTR	F [55.2]	F [53.2]	F [69.2]	F [83.2]	F [59.4]	F [70.8]
	Westbound LTR	B [11.7]	C [23.9]	DRIVEWAY CLOSED		DRIVEWAY CLOSED	
	Northbound LTR	A [1.5]	A [1.6]	A [2.6]	A [3.5]	A [2.8]	A [4.3]
	Southbound LTR	A [0.3]	A [0.0]	N/A	N/A	N/A	N/A

[1] Analysis performed using Synchro/SimTraffic Version 6.0.

Table 3-1 (continued)
Intersection Levels of Service Summary[1]

Type of Control	Intersection	Existing Conditions		2009 Background Conditions		2009 Total Future Conditions	
		AM	PM	AM	PM	AM	PM
6. 14th Street/Florida Avenue							
Signal	Eastbound	C (27.9)	E (61.9)	C (29.1)	F (99.0)	C (29.5)	F (115.3)
	Westbound	C (33.5)	C (32.9)	D (39.1)	D (39.6)	D (39.4)	D (40.6)
	Northbound	B (11.0)	B (13.3)	B (11.4)	B (14.5)	B (11.4)	B (14.5)
	Southbound	B (16.2)	B (13.3)	B (19.6)	B (15.1)	C (20.4)	B (15.5)
	Overall	**B (18.7)**	**C (24.1)**	**C (21.6)**	**C (32.1)**	**C (22.1)**	**D (35.4)**
Improvement – Modify Traffic Signal Timings (same overall cycle length of 100 seconds)[2]							
Signal	Eastbound	C (22.2)	D (35.5)	C (22.9)	D (45.9)	C (26.0)	C (33.5)
	Westbound	C (26.4)	C (25.5)	C (29.0)	C (28.9)	C (33.5)	C (23.5)
	Northbound	B (14.4)	B (17.4)	B (14.9)	B (19.2)	B (13.1)	C (23.8)
	Southbound	C (22.1)	B (17.8)	C (29.3)	C (20.9)	C (24.9)	C (29.1)
	Overall	**C (20.9)**	**C (21.6)**	**C (25.1)**	**C (25.5)**	**C (23.5)**	**C (27.1)**
7. Belmont Street (west)/Public Alley							
Stop Sign	Eastbound RTL	A [0.4]	A [0.3]	A [0.2]	A [0.2]	A [0.2]	A [0.5]
	Westbound RTL	A [1.1]	A [0.2]	A [1.5]	A [1.5]	A [1.3]	A [1.2]
	Northbound RT	A [9.0]	A [8.8]	A [9.0]	A [8.9]	A [9.0]	A [9.0]
	Southbound TL	A [9.2]	A [9.3]	A [9.5]	B [10.0]	A [9.7]	B [10.3]
8. Belmont Street (west)/15th Street							
Stop Sign	Westbound R	B [11.1]	C [19.6]	B [11.4]	C [22.5]	B [11.3]	C [21.9]

[1] Analysis performed using Synchro/SimTraffic Version 6.0.
[2] Improvements transfer green time from the east/west movement to the north/south movement.

Table 3-1 (continued)
Intersection Levels of Service Summary[1]

Type of Control	Intersection	Existing Conditions		2009 Background Conditions		2009 Total Future Conditions	
		AM	PM	AM	PM	AM	PM
9. 15th Street/Public Alley							
Stop Sign	Westbound R	B [11.0]	C [18.3]	B [11.3]	C [19.9]	B [11.2]	C [19.7]
10. Chapin Street/Nehemiah Shopping Center Driveway							
Stop Sign	Westbound LT	A [1.5]	A [5.1]	A [1.6]	A [4.3]	INTERSECTION CLOSED	
	Northbound LR	A [8.7]	A [8.8]	A [8.9]	A [8.9]		
11. Belmont Street (west)/Nehemiah Shopping Center Driveway							
Stop Sign	Eastbound LT	A [1.1]	A [0.6]	A [0.4]	A[0.4]	INTERSECTION CLOSED	
	Southbound LR	A [8.9]	A [9.0]	A [9.2]	A [9.4]		

[1] Analysis performed using Synchro/SimTraffic Version 6.0.

Table 3-2
Trips Generated by Other Approved Developments[1,2]

Development/ Land Use	Amount	AM Peak Hour			PM Peak Hour			ADT
		In	Out	Total	In	Out	Total	
1. The Flats at Union Row								
Retail	24,000 S.F.	40	26	66	117	127	244	2,686
Transit Reduction	*35%*	14	9	23	41	44	85	940
Net New Trips		26	17	43	76	83	159	1,746
Residential	280 DU	20	98	118	94	46	140	1,833
Transit Reduction	*50%*	10	49	59	47	23	70	917
Net New Trips		10	49	59	47	23	70	917
2. Gateway 34								
Retail	4,000 S.F.	14	9	23	36	39	75	838
Transit Reduction	*85%*	12	8	20	31	33	64	712
Net New Trips		2	1	3	5	6	11	126
Residential	48 DU	5	24	29	22	11	33	439
Transit Reduction	*40%*	2	10	12	9	4	13	176
Net New Trips		3	14	17	13	7	20	263
3. View 14[3]								
Retail	26,884 S.F.	43	28	71	126	137	263	2,891
Transit Reduction	*85%*	37	24	61	107	116	223	2,457
Net New Trips		6	4	10	19	21	40	434
Residential	171 DU	13	66	79	62	31	93	1,178
Transit Reduction	*40%*	5	26	31	25	12	37	471
Net New Trips		8	40	48	37	19	56	707
Existing Trips		25	31	56	21	37	58	N/A
4. The Belmont								
Residential	28 DU	3	16	19	14	7	21	319
Transit Reduction	*40%*	1	6	7	6	3	9	128
Net New Trips		2	10	12	8	4	12	191

Notes: [1] Traffic estimates based on Trip Generation, 7th Edition, The Institute of Transportation Engineers

[2] The transit usage percentages were calculated based on information provided in the Development Related Ridership Survey II, published by the Washington Metropolitan Area Transit Authority.

[3] Based on the transportation impact report, View 14, performed by Wells & Associates, dated July 8, 2005.

Table 3-2 (continued)
Trips Generated by Other Approved Developments[1,2]

Development/ Land Use	Amount	AM Peak Hour			PM Peak Hour			ADT
		In	Out	Total	In	Out	Total	
5. The Fedora at Meridian Hill								
Residential	103 DU	9	44	53	42	20	62	769
Transit Reduction	*40%*	4	18	22	17	8	25	308
Net New Trips		5	26	31	25	12	37	461
6. Meridian II								
Residential	16 DU	2	10	12	9	4	13	247
Transit Reduction	*35%*	1	4	5	3	1	4	86
Net New Trips		1	6	7	6	3	9	161
7. The Barcelona								
Residential	30 DU	3	17	20	15	7	22	331
Transit Reduction	*40%*	1	7	8	6	3	9	132
Net New Trips		2	10	12	9	4	13	199
8. 1412 Chapin Street, N.W.								
Residential	33 DU	4	17	21	16	8	24	349
Transit Reduction	*40%*	2	7	9	6	3	9	140
Net New Trips		2	10	12	10	5	15	209
Total Pipeline Development Trips		**42**	**156**	**198**	**234**	**150**	**384**	**5,413**

Notes: [1] Traffic estimates based on Trip Generation, 7th Edition, The Institute of Transportation Engineers

[2] The transit usage percentages were calculated based on information provided in the Development Related Ridership Survey II, published by the Washington Metropolitan Area Transit Authority.

[3] Based on the transportation impact report, View 14, performed by Wells & Associates, dated July 8, 2005.

Trip Distribution Analysis

The residential and retail space trip distributions of View 14 were determined based on a previously-approved traffic study. The distribution of the residential and/or retail space for the other developments and the subject site was based on existing traffic patterns as follows:

To/From:	Residential	Retail
North along Florida Avenue	25%	40%
East along Florida Avenue	15%	10%
West along Florida Avenue	10%	15%
South along 14th Street	45%	30%
West along Belmont Street	2%	2%
North along 15th Street	3%	3%
Total	100%	100%

Other Development Project Traffic Assignments

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

Background Traffic Growth

Annual background traffic growth was estimated at 2.0 percent per year compounded for three (3) years to the project buildout year (2009). This growth rate was applied to all movements on Florida Avenue, 14th Street, 15th Street, Chapin Street, and Belmont Street.

Background Traffic Forecasts

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

Background Future Levels of Service

The background peak hour levels of service (without the development of Nehemiah PUD) were estimated at the eleven (11) key intersections in the study area for the project buildout year 2009 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 D and are summarized in Table 3-1.

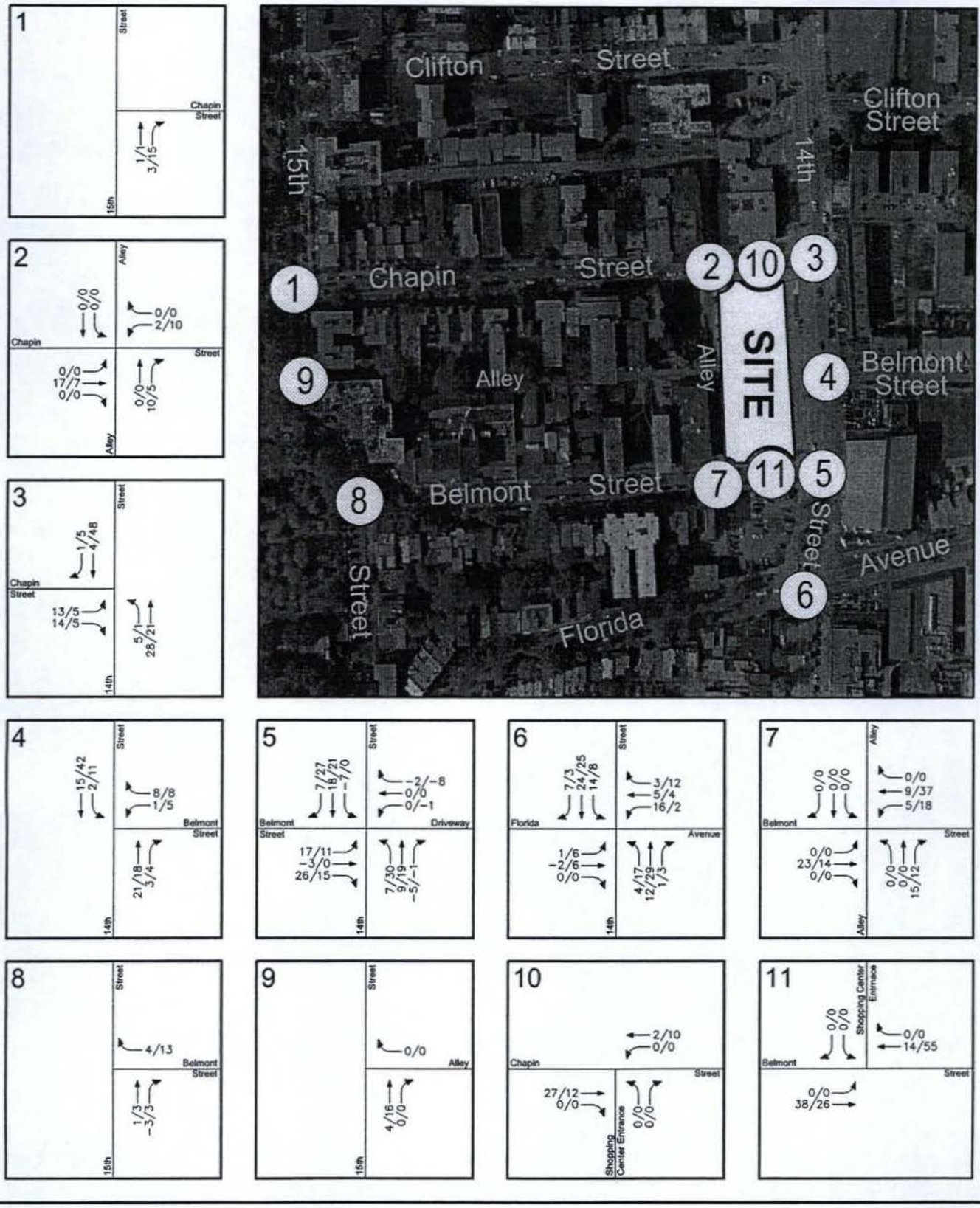

Figure 3–1
Other Development Peak Hour Traffic Assignments

AM PEAK HOUR
PM PEAK HOUR
000/000

North

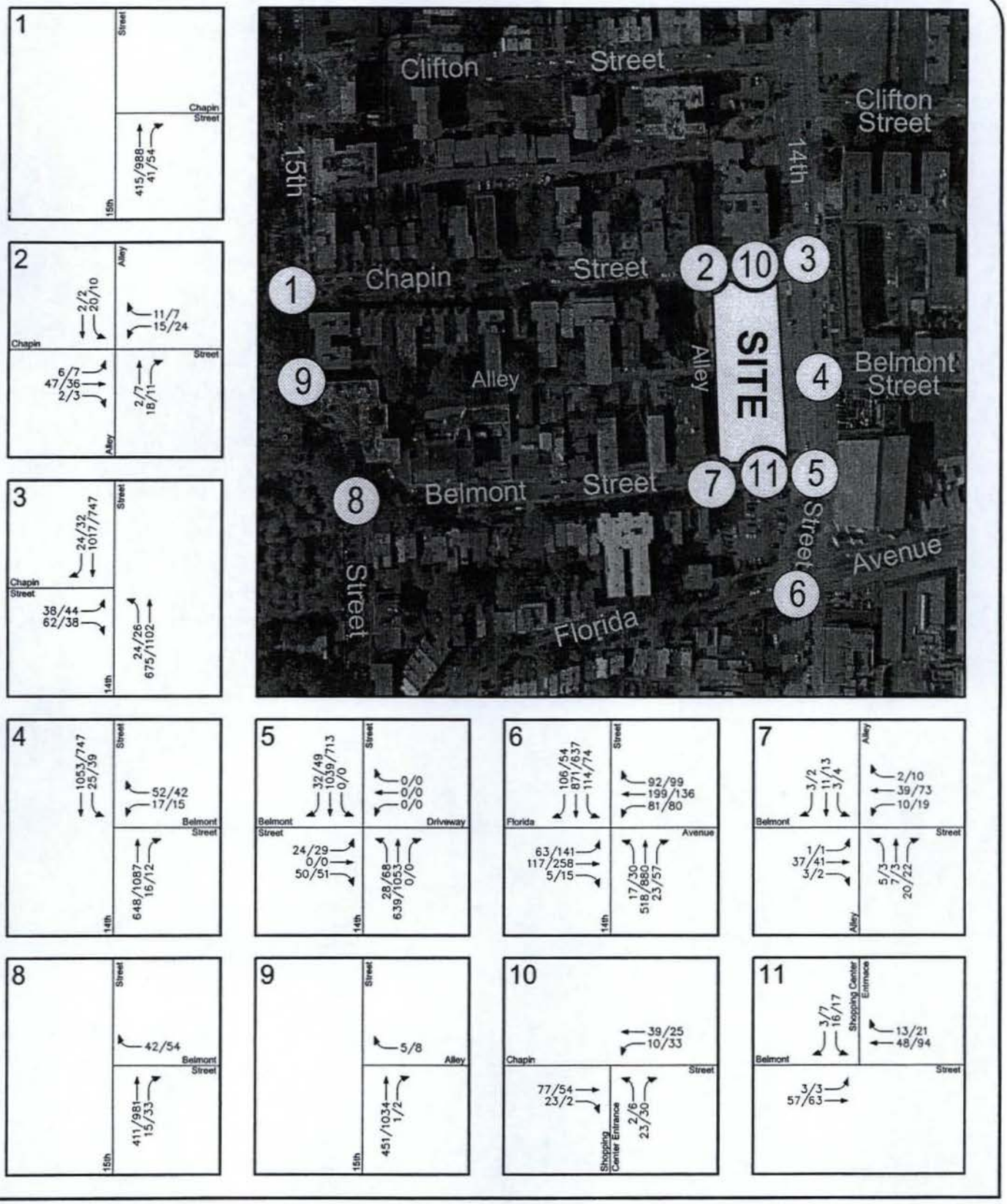

Figure 3–2
Background Future Peak Hour Traffic Forecasts

AM PEAK HOUR
PM PEAK HOUR
000/000

North

Table 3-1 indicates that the intersections of Chapin Street/Public Alley, Belmont Street/Public Alley, Belmont Street/15th Street, 15th Street/Public Alley, and both driveways providing access to the Nehemiah Shopping Center will continue to operate at an overall acceptable LOS "D" or better during both the AM and the PM peak hours.

The eastbound movement at 14th Street/Florida Avenue will operate at capacity at LOS "F" during the PM peak hour. As previously discussed, the slight modification of the existing traffic signal timings would improve the operation of the eastbound movement at this intersection.

The eastbound movement at 14th Street/Belmont Street (west) will continue to operate at capacity at LOS "F" during both the AM and PM peak hours.

Due to the addition of the regional growth and the other developments in the vicinity of the subject site, the eastbound movement at 14th Street/Chapin Street will operate near capacity at LOS "E" during both the AM and PM peak hours, and the westbound movement at 14th Street/Belmont Street (east) will operate near capacity at LOS "E" during the PM peak hour.

Site Trip Generation Analysis

The proposed Nehemiah project will include 225 dwelling units (±25). For the purposes of the traffic analysis, 250 units were analyzed. Additionally, the development will include 18,000 square feet of retail development. The net number of trips that will be generated by the development of the Nehemiah 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 Metro Station, (3) experience with other comparable projects in Washington, D.C., and (4) existing Shopping Center driveway traffic counts.

The proposed uses are anticipated to generate 72 AM peak hour trips (16 in and 56 out) and 106 PM peak hour trips (66 in and 40 out) at project build out as shown in Table 3-3. This estimate assumes that 40 percent of all site-generated residential trips and 85 percent of all site-generated retail trips would be made by Metro or some other non-auto mode or on foot by project residents and neighbors. The prevailing mode split for work trips in this neighborhood is approximately 65 percent according to the 2000 U.S. Census. This information is contained in Appendix E.

The Nehemiah Shopping Center presently generates 88 AM peak hour trips (46 in and 42 out) and 113 PM peak hour trips (56 in and 57 out). The development of the Nehemiah PUD, therefore, would generate 16 *fewer* AM peak hour trip and seven (7) *fewer* PM peak hour trips.

Table 3-3
Site Trip Generation Analysis[1]

Land Use	Amount	AM Peak Hour			PM Peak Hour			ADT
		In	Out	Total	In	Out	Total	
Nehemiah PUD								
Retail	18,000 S.F.	34	22	56	97	105	202	2,228
Transit Reduction[2]	*85%*	29	19	48	82	90	172	1,894
Net New Trips		5	3	8	15	15	30	334
Residential	250 DU	18	89	107	85	42	127	1,653
Transit Reduction[2]	*40%*	7	36	43	34	17	51	661
Net New Trips		11	53	64	51	25	76	992
Subtotal		16	56	72	66	40	106	1,326
Existing Site Trips		46	42	88	56	57	113	N/A
Total Net New Site Trips		**(30)**	**14**	**(16)**	**10**	**(17)**	**(7)**	**N/A**

Notes: [1] Traffic estimates based on Trip Generation, 7th Edition, The Institute of Transportation Engineers

[2] The transit usage percentages were calculated based on information provided in the Development Related Ridership Survey II, published by the Washington Metropolitan Area Transit Authority.

Site Traffic Assignments

The new residential and retail trips were assigned to the public road network according to the directional distribution described above. The site traffic assignments are shown on Figure 3-3 and demonstrate the removal of the existing site trips before the addition of the new site trips.

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 Nehemiah PUD 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 F and summarized in Table 3-1.

Table 3-1 indicates that the intersections of Chapin Street/Public Alley, Belmont Street/Public Alley, and 15th Street/Public Alley will continue to operate at acceptable LOS "D" or better during both the AM and PM peak hours.

The eastbound movement at 14th Street/Florida Avenue will continue to operate at LOS "F" during the PM peak hour. Slight modifications to the existing traffic signal timings would improve the operation of the eastbound movement at this intersection.

The eastbound movement at 14th Street/Belmont Street (west) will continue to operate at capacity at LOS "F" during both the AM and PM peak hours.

As previously described under background conditions, the eastbound movement at 14th Street/Chapin Street will operate near or over capacity during both the AM and PM peak hours, and the westbound movement at 14th Street/Belmont Street (east) will operate at LOS "E" during the PM peak hour.

Access to the underground parking garage is proposed via the existing north-south alley, which is anticipated to operate at LOS "A" and "B" during both the AM and PM peak hours.

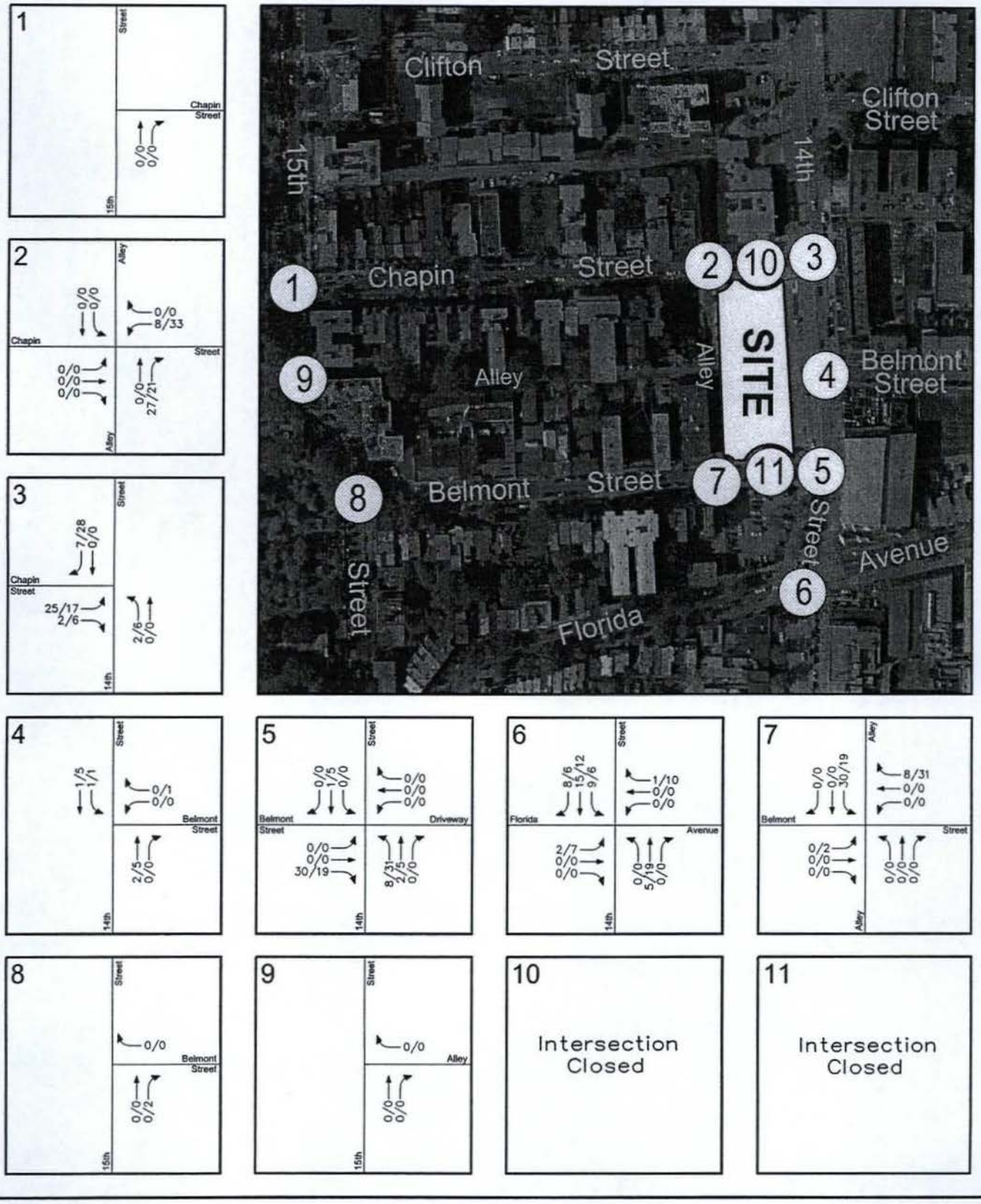

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Figure 3–3
Site–Generated Traffic Assignments

AM PEAK HOUR
PM PEAK HOUR
000/000

North

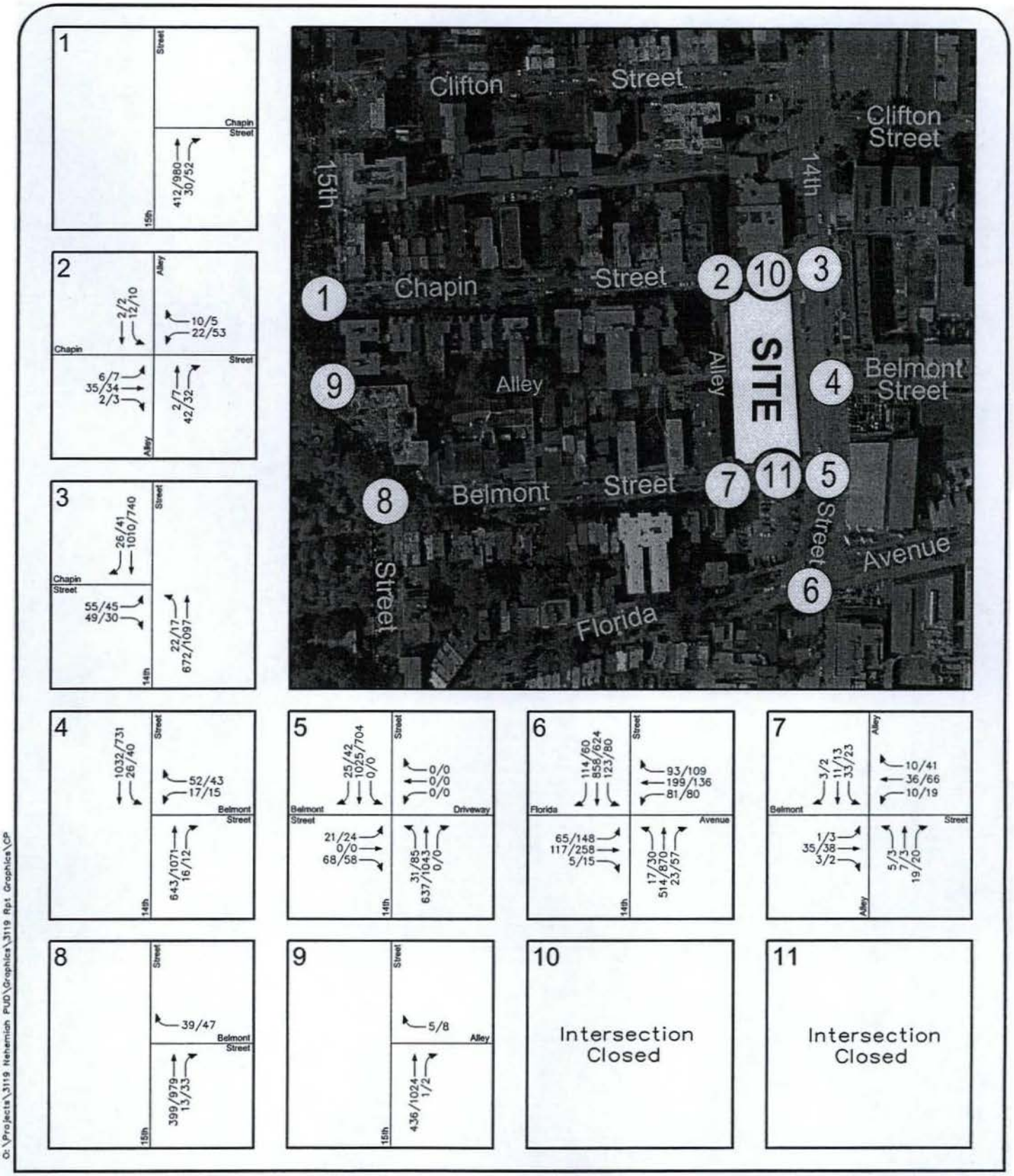

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Figure 3–4
Total Future Peak Hour Traffic Forecasts

AM PEAK HOUR
PM PEAK HOUR
000/000

North

Parking Analysis

The subject site is zoned C-2-B. The District of Columbia zoning regulations minimum parking requirement in this zone for apartment houses or multiple dwellings is one (1) space for every three (3) units and one (1) space for each additional 750 S.F. in excess of 3,000 S.F. (FAR basis) for retail. Accordingly, the subject site would require 84 residential parking spaces and 20 retail parking spaces.

The subject site will be served by two (2) levels of underground parking with approximately 178 residential parking spaces (or 0.71 spaces per unit) and surface parking providing 18 retail parking spaces. This is 94 more residential spaces than the minimum number of spaces required by the zoning ordinance. Curb parking is available in the immediate vicinity of the subject site, and the majority of the retail patrons are expected to use non-auto transit modes.

Auto availability for owner-occupied residential units in Census Tract 37, in which the subject site is located, is 1.24 vehicles per unit according to the 2000 U.S. Census. Approximately 17 percent of all owner-occupied households owned no vehicle; 48 percent owned one (1) vehicle; and 32 percent owned two (2) or more vehicles. Recent experience with other comparable residential condominium projects indicates that the proposed 178 residential parking spaces (or 0.71 spaces per unit) will adequately meet anticipated residential parking demands.

The limited retail parking supply will adequately accommodate anticipated retail parking demands if the proposed retail tenants serve local neighborhood residents, not patrons who might otherwise drive from more distant neighborhoods in the District of Columbia or the suburbs.

Loading Analysis

The District of Columbia zoning ordinance requires one (1) 55-foot-deep loading berth and one (1) 20-foot-deep service/delivery loading space for the residential site component. For the retail component, the zoning ordinance requires one (1) 30-foot-deep loading berth.

The proposed loading dock will include two (2) 30-foot-deep loading berths and one (1) 20-foot service/delivery space. Relief is sought to reduce the 55-foot-deep berth requirement to 30 feet based on the fact that 55-foot trucks are not expected to service the residential units given the unit size. Furthermore, the public street network does not provide adequate maneuvering geometry for a 55-foot tractor trailer to access the loading dock; therefore, 30-foot single unit trucks or smaller are expected to be the vehicles that will deliver to the site.

Figures 3-5 through 3-8 show the maneuvering patterns for 30-foot single unit trucks into and out of the loading berths. Service vehicles will approach the site via 14th Street and enter the alley from Belmont Street. Exiting vehicles will depart the site to 14th Street via Chapin Street. To better accommodate the truck maneuvering, it is recommended that the one (1) parking

space nearest the alley intersection on the north side of Belmont Street and the two (2) spaces nearest the alley intersection on the south side of Chapin Street be removed. The loss of these on-street spaces will be mitigated by the creation of two (2) new spaces on Belmont Street and two (2) new spaces on Chapin Street that result from closing the existing site driveways. A net of one (1) new on-street space will be gained.

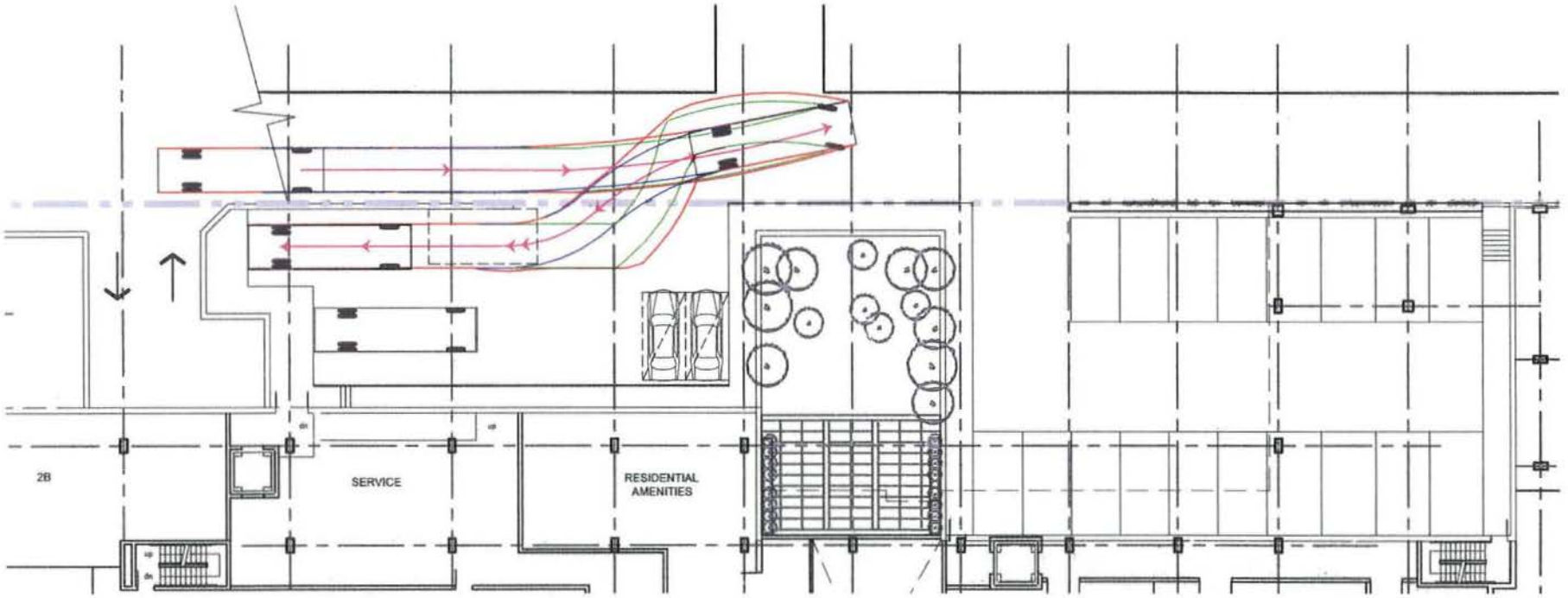

Figure 3–5
Single Unit Truck (SU–30) Inbound to Dock A

Vehicle Body
Front Tire Tread
Rear Tire Tread
Directional Path

North

Nehemiah PUD
Washington, D.C.

Wells + Associates, LLC

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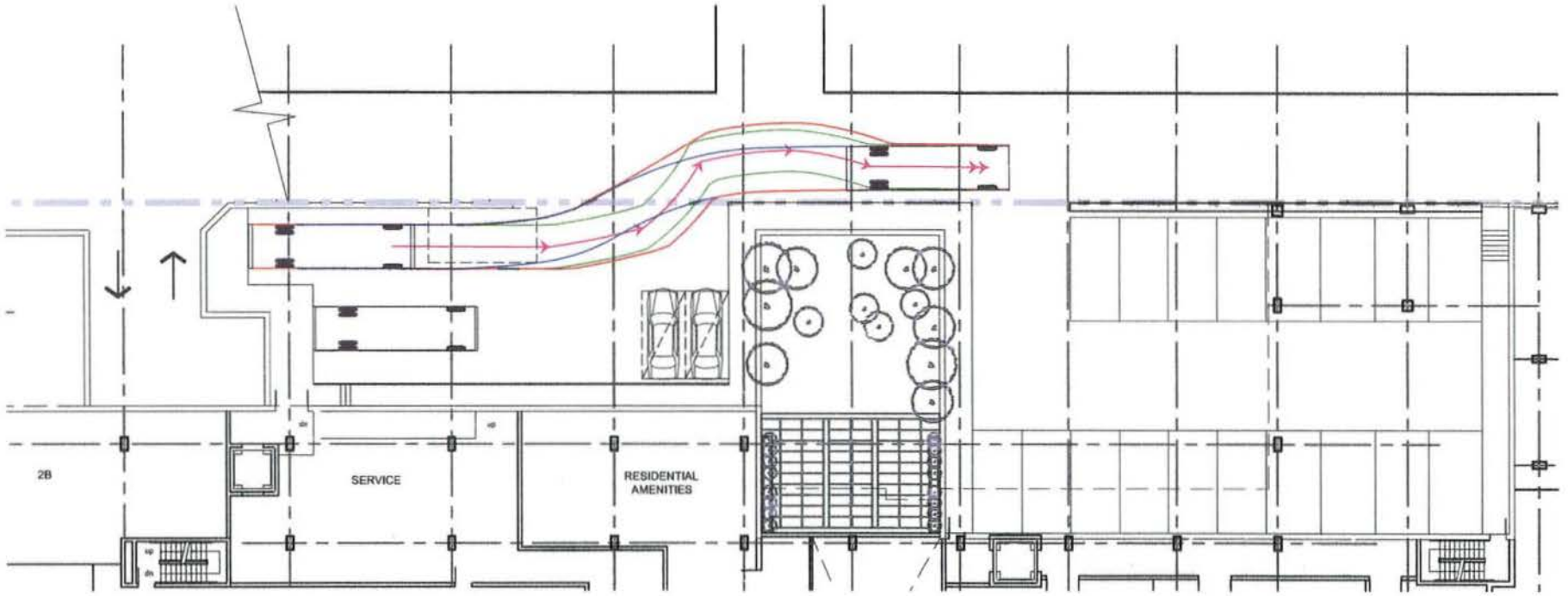

Figure 3–6
Single Unit Truck (SU–30) Outbound from Dock A

Vehicle Body
Front Tire Tread
Rear Tire Tread
Directional Path

North

Nehemiah PUD
Washington, D.C.

Wells + Associates, LLC

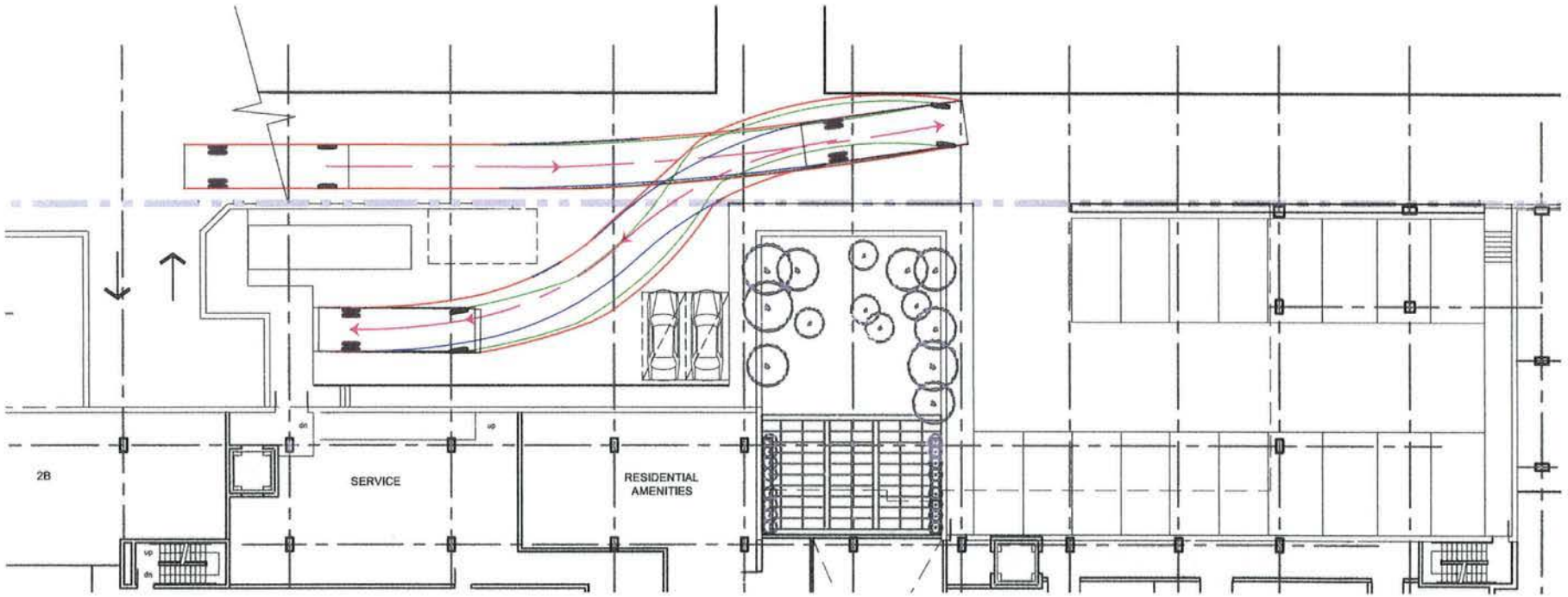

Figure 3–7
Single Unit Truck (SU–30) Inbound to Dock B

Vehicle Body
Front Tire Tread
Rear Tire Tread
Directional Path

North

Nehemiah PUD
Washington, D.C.

Wells + Associates, LLC

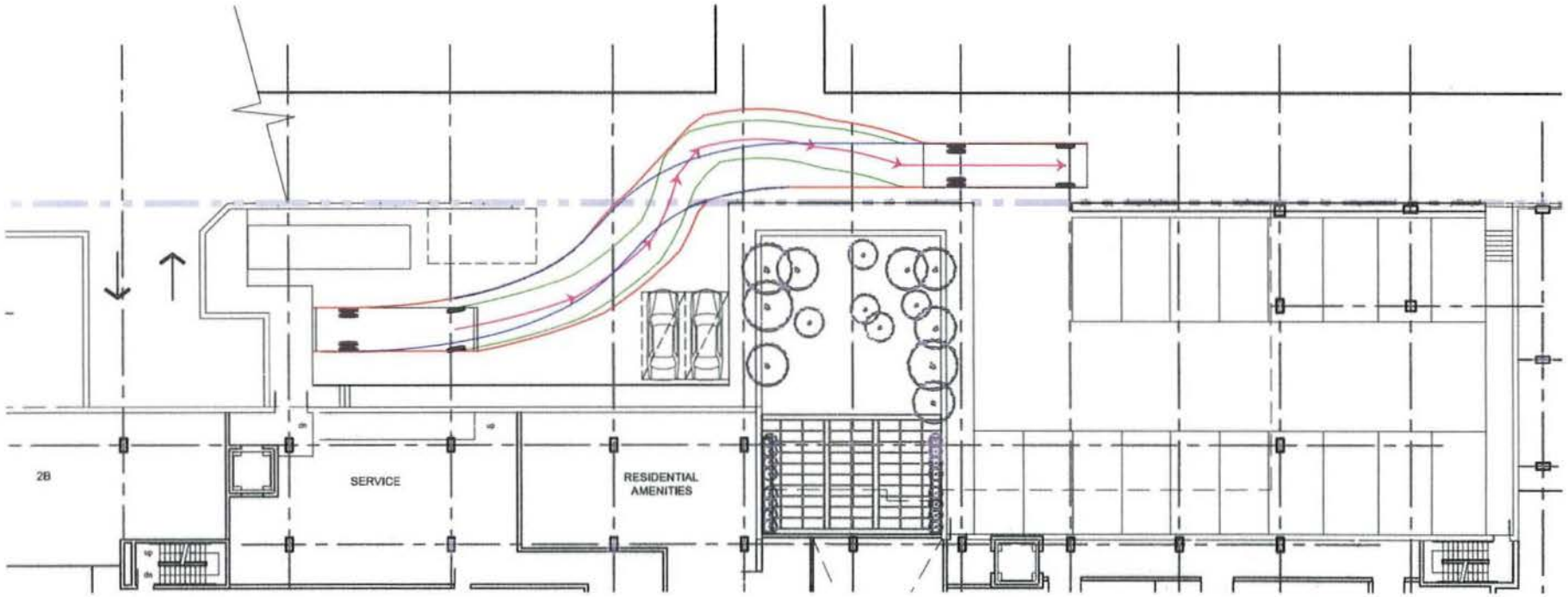

Figure 3–8
Single Unit Truck (SU–30) Outbound from Dock B

Nehemiah PUD
Washington, D.C.

Wells + Associates, LLC

Section 4
CONCLUSIONS

The conclusions of this study are as follows:

1. The majority of the key intersections currently operate at acceptable level of service (LOS) "D" or better during both the AM and the PM peak hours. It is important to note, however, that the eastbound movement at the intersection of 14th Street with Florida Avenue currently operates near capacity at LOS "E" during the PM peak hour. A slight modification of the existing traffic signal timings would improve the operation of the eastbound movement at this intersection.

2. The other developments in the study area will generate a total of 198 AM peak hour trips and 384 PM peak hour trips.

3. These additional trips can be adequately accommodated at the majority of the key intersections in the study area if the existing traffic signal timings at the intersection of 14th Street with Florida Avenue are slightly modified.

4. The proposed redevelopment of the subject site will generate 72 AM peak hour trips (16 in and 56 out) and 106 PM peak hour trips (66 in and 40 out). This is 16 fewer AM peak hour trip and seven (7) fewer PM peak hour trips than generated by the existing Nehemiah Shopping Center at the time of the traffic counts.

5. The site-generated trips can be adequately accommodated at the majority of the key intersections in the study area with slight traffic signal timing modifications at the intersection of 14th Street and Florida Avenue.

6. The proposed residential parking supply will adequately meet anticipated residential parking demands. The proposed retail parking supply will adequately accommodate anticipated retail parking demands if the proposed retail tenants serve local neighborhood residents, not patrons who might otherwise drive from more distant neighborhoods in the District of Columbia or the suburbs.

7. The proposed parking and loading/service facilities will adequately serve the proposed project.

8. A total of 84 residential (at 2.0 FAR) and 59,987 S.F. of retail space (at 1.5 FAR) could be built by-right on the subject site. The uses would generate 20 percent additional AM peak hour trips and 61 percent additional PM peak hour trips. The proposed development, therefore, would have less traffic impact than the by-right development.