



WELLS + ASSOCIATES

MEMORANDUM

TO: Allan Fye, DDOT

FROM: Jami L. Milanovich, P.E.
Amber N. Mikec, P.E.

DATE: May 19, 2009

CC: Eric Price, Abdo Development
Jyh-Mei Lee, Abdo Development
Allison Prince, Pillsbury Winthrop Shaw Pittman
David Aitable, Pillsbury Winthrop Shaw Pittman

RE: Transportation Impact Analysis for Arbor Place (Zoning Commission Case No. 09-06)
Consolidated Planned Unit Development and Map Amendment
Land in Square 4268 at New York Avenue and Montana Avenue

OVERVIEW

In July 2006, Wells + Associates submitted a Transportation Impact Study (TIS) in support of a Planned Unit Development (PUD) application (Zoning Commission Order No. 06-15) filed by Abdo New York for a 16-acre site generally bounded by New York Avenue to the north, Montana Avenue to the west and south, and Bladensburg Road to the south and east in the northeast section of Washington, DC (see Figure 1). The PUD application at that time requested the property be rezoned from the C-M-1 (Low Bulk Commercial and Light Manufacturing) District to the CR (Mixed Use Commercial Residential) District.

Due to changes in the market conditions since that time, a new PUD application (Zoning Commission Case No. 09-06), which proposes construction of a scaled-back but still very substantial mixed-use/mixed-income project, has been submitted by Abdo New York. This application requests consolidated review and approval to construct a 2.46 FAR mixed-use project that would contain approximately 1,714,182 gross square feet (SF), consisting of up to 1,420 residential units, 69,883 SF of commercial space, a 3,936 SF daycare and a 4,006 SF health club for the on-site residents. With the new PUD application, the Applicant is requesting a zoning map amendment to the C-3-A (Medium Bulk Major Business and Employment Center) District. Figures 2A and 2B show the layout of the site as now proposed.

This transportation impact analysis was requested by the Applicant to determine the impact the changes in the development program would have on the roadway network as analyzed in the July 2006 TIS. On March 13, 2009, Wells + Associates met with representatives from DDOT to determine the appropriate scope of work for updating the traffic analyses. As agreed upon during that meeting, Wells + Associates has prepared this memorandum to supplement the July 2006 TIS. This memorandum includes the future conditions **without** any new development on the site as was presented in the July 2006 TIS, and it includes the future conditions **with** the development as approved by Zoning

Commission Order No. 06-15 and as presented in the July 2006 TIS. The future conditions **with the new development program** as outlined in the PUD application associated with Zoning Commission Case No. 09-06 also are presented in this memorandum. These analyses were updated from the July 2006 TIS to not only reflect the new development program but also the new layout of the site and site access points as described in more detail in the following sections.

SITE TRIP GENERATION

TOTAL TRIPS

As stated previously, the new PUD application proposes construction of up to 1,420 residential units, 69,883 SF of commercial space, a 3,936 SF daycare and a 4,006 SF health club for the on-site residents. The total number of site trips anticipated to be generated by the proposed redevelopment was estimated based on the Institute of Transportation (ITE) Trip Generation manual (Eighth Edition). Because market conditions will determine the proportion of rented versus owned residential units, for purposes of this analysis, half of the residential units were assumed to be rented units (ITE Land Use Code 220 – Apartment) and half were assumed to be owned units (ITE Land Use Code 230 – Condominium/Townhouse). For the residential land uses, the number of dwelling units was used as the independent variable. The 69,883 SF of commercial space was generated using ITE Land Use Code 820 (Shopping Center) with the square footage as the independent variable. ITE Land Use Code 565 was used for the daycare and ITE Land Use Code 492 was used for the health club. The square footages of the daycare and health club were used as the independent variables for each use.

Table I presents the total number of site trips for each land use. As proposed, the revised development program would generate 779 total AM peak hour trips and 1,273 total PM peak hour trips.

It should be noted that the daycare and health club are intended for use by on-site residents only. It is anticipated that the number of trips generated by these components would be limited to employee trips. The trip generation for the daycare presented in Table I is, therefore, conservative but allows for flexibility should the daycare be opened to other area residents at some point in the future. The trip generation for the health club also is conservative but, as shown in Table I, is a minor component of the overall trip generation.

INTERNAL TRIPS

Consistent with the July 2006 TIS, a portion of the site generated trips would be captured internally within the mixed-use development. By its nature and character of uses, the proposed development experiences a naturally occurring synergy. For example, a portion of the individual residential trips may utilize the proposed retail uses without leaving the site. As a result of this naturally occurring synergy, the volume of external trips generated by the site would be reduced.

For purposes of this analysis and consistent with the July 2006 TIS, the internal capture rates outlined in the ITE Trip Generation Handbook were used for the PM peak hour and daily weekday trips. Because the Trip Generation Handbook does not provide internal capture data for the AM peak hour, consistent with the July 2006 TIS, the PM peak hour internal capture rates also were applied to the AM peak hour trips.

As shown in Table I, the on-site synergy would result in 59 AM and 152 PM internally captured site trips. Taking into account internal trips stemming from the synergistic relationship of the uses, the proposed development would generate an estimated 720 AM peak hour external trips and 1,121 PM peak hour external trips.

Table I
Trip Generation Summary for Zoning Commission Case No. 09-06

LAND USE TRIP TYPE	AM PEAK HOUR			PM PEAK HOUR			DAILY WEEKDAY
	IN	OUT	TOTAL	IN	OUT	TOTAL	
Apartment (Land Use Code 220) – 710 dwelling units							
Total Trips	70	282	352	265	143	408	4,426
Internal Capture	-5	-5	-11	-20	-15	-35	-323
External Trips	65	277	341	245	128	373	4,103
Condominium/Townhouse (Land Use Code 230) – 710 dwelling units							
Total Trips	42	206	248	201	99	300	3,540
Internal Capture	-3	-4	-7	-15	-10	-25	-259
External Trips	39	202	241	186	89	275	3,281
Shopping Center (Land Use Code 820) – 69,883 square feet							
Total Trips	76	49	125	245	255	500	5,380
Internal Capture	-12	-11	-24	-29	-37	-66	-667
External Trips	64	38	101	216	218	434	4,713
Daycare (Land Use Code 565) – 3,936 square feet							
Total Trips	25	23	48	23	26	49	312
Internal Capture	-8	-8	-16	-8	-10	-18	-160
External Trips	17	15	32	15	16	31	152
Health Club (Land Use Code 492) – 4,006 square feet							
Total Trips	3	3	6	9	7	16	132
Internal Capture	-1	-1	-2	-5	-4	-8	-90
External Trips	2	2	4	4	3	8	42
Total Arbor Place Development							
Total Trips	216	563	779	743	530	1,273	13,790
Internal Capture	-30	-30	-59	-76	-76	-152	-1,498
External Trips	186	533	720	667	454	1,121	12,292

NON-AUTO MODE SPLIT

In the July 2006 TIS, the number of site trips was further reduced to account for the portion of site generated trips that would utilize public transportation and other non-auto modes of transportation. Justification of the non-auto mode split largely was based on the extensive transportation demand management (TDM) program that the Applicant was proposing as part of that development. Although some TDM measures are proposed with the new development program, no additional reduction was taken in order to provide a conservative analysis. Potential TDM strategies for the new PUD application are outlined in detail in a later section of this memorandum.

PASS-BY TRIPS

A portion of the trips entering and leaving retail and service establishments are vehicles using adjacent roads to reach a different destination but stop at the site in passing. This is called a pass-by trip and is defined by the Trip Generation Handbook as a trip in which the retail or service destination is the secondary part of a primary trip, such as a work-to shopping-to-home trip. An example of a pass-by trip would be one in which a driver stops at the retail uses on his/her way home from work.

Typical pass-by trip percentages for various land uses are published by ITE in the Trip Generation Handbook. Consistent with the July 2006 TIS and in accordance with ITE, a pass-by rate of 34 percent was applied to the proposed 69,883 SF of retail uses during the PM peak hour. Since no data were available for the AM peak hours, a 15 percent pass-by trip reduction was applied to the retail uses. These reductions would result in 15 AM peak hour pass-by trips and 148 PM peak hour pass-by trips.

The number of new external vehicle trips added to the adjacent roadways was calculated by subtracting the number of pass-by trips from the number total external vehicle trips. The proposed redevelopment, therefore, would generate an estimated 705 new AM peak hour external vehicular site trips and 973 new PM peak hour external vehicular site trips.

TRIP GENERATION COMPARISON TO JULY 2006 TIS

The July 2006 TIS indicated that the development program associated with Zoning Commission Order No. 06-15 would have generated 1,285 new AM peak hour external vehicular site trips and 1,637 new PM peak hour external vehicular site trips. Therefore, the new, scaled-down development program associated with Zoning Commission Case No. 09-06 would result in significantly fewer site trips added to the surrounding roadway network. In fact, the new development program would result in 45 percent fewer trips during the AM peak hour and 41 percent fewer trips during the PM peak hour compared to the development program analyzed in the July 2006 TIS.

SITE TRIP DISTRIBUTION AND ASSIGNMENT

NEW SITE TRIP DISTRIBUTION

The distribution of new peak hour retail, daycare and health club site trips was based on existing traffic patterns in the study area. The distribution of new peak hour residential site trips was based on existing traffic patterns in the study area and the location of the site with respect to employment centers.

For the residential component, the following distributions were utilized for the new site trips, consistent with the July 2006 TIS:

- 60% to/from the west on New York Avenue
- 10% to/from the east on New York Avenue
- 5% to/from the north on Montana Avenue
- 10% to/from the southwest on Bladensburg Road
- 10% to/from the northeast on Bladensburg Road
- 5% to/from the west on West Virginia Avenue

For the retail, daycare and health club components, the following distributions were utilized for the new site trips, consistent with the July 2006 TIS:

- 34% to/from the west on New York Avenue
- 28% to/from the east on New York Avenue
- 6% to/from the north on Montana Avenue
- 10% to/from the southwest on Bladensburg Road
- 12% to/from the northeast on Bladensburg Road
- 5% to/from the west on West Virginia Avenue
- 5% to/from the west on Mount Olivet Road via West Virginia Avenue

PASS-BY SITE TRIP DISTRIBUTION

Pass-by site trips associated with the retail uses were assumed to be diverted from only New York Avenue and, therefore, the pass-by site trip distributions were based on the directional flow on the corridor. Accordingly, during the AM peak hour, 70 percent of the pass-by trips were assumed to come from the east on New York Avenue and proceed west after stopping at the site. Resultantly, 30 percent of the pass-by trips during the AM peak hour were assumed to come from the west on New York Avenue and continue east after stopping at the site. During the PM peak hour, 40 percent of the pass-by trips were assumed to come from the east on New York Avenue and proceed west after stopping at the site while the remaining 60 percent of the pass-by trips were assumed to come from the west on New York Avenue and continue east after stopping at the site.

SITE TRIP ASSIGNMENTS

As shown on the site plans (Figures 2A and 2B), the site would be served by a new frontage road to the north of the site parallel to New York Avenue. Additionally, the generally triangular site would be subdivided into three sections by three new roadways labeled A, B and C on the site plan. Street A along with two other driveways would provide access to the frontage road along New York Avenue. Street B along with two other full-access driveways would provide access to Montana Avenue. Street C along with two other right-in/right-out driveways would provide access to Bladensburg Road.

The site-generated traffic volumes were assigned to the public roadway network according to the directional distributions previously described, the location of the sites various accesses, and the location of the various land uses proposed on the site. The resulting site traffic assignments are shown on Figure 3.

FUTURE TRAFFIC CONDITIONS

TRAFFIC VOLUMES

The existing traffic volumes for the study intersections were taken directly from the July 2006 TIS and are shown on Figure 4. Likewise, the 2013 background traffic forecasts without the proposed redevelopment also were taken from the July 2006 TIS and are shown on Figure 5. The 2013 background traffic forecasts were developed by applying a one percent growth rate, compounded annually, to the existing traffic volumes. As noted in the July 2006 TIS, the traffic generated by the existing site uses (see Figure 6) was not factored.

To obtain 2013 total future peak hour forecasts with the redeveloped site as proposed in Zoning Commission Case No. 09-06, the site traffic assignments shown on Figure 3 were added to the 2013 background traffic forecasts shown on Figure 5 then the traffic generated by the existing sites uses (Figure 6) was subtracted. The resulting 2013 total future peak hour traffic forecasts are shown on Figure 7.

OPERATIONAL ANALYSIS

Capacity analyses for the 2013 background conditions were taken directly from the July 2006 TIS and are shown in Table 2. Likewise, the capacity analyses for the 2013 total future conditions with the recommended improvements from the July 2006 TIS are provided in Table 2. These conditions have been taken from the July 2006 TIS for purposes of comparison to the conditions with the redeveloped site per Zoning Commission Case No. 09-06.

Capacity analyses for the 2013 total future conditions under the revised development plan were performed using the forecasts shown on Figure 7 and the lane use and traffic controls shown on Figure 8. Updated signal timing plans were obtained from DDOT to determine what, if any, changes have been made to the signal timings at the study intersections since completion of the July 2006 TIS. Upon comparison of the latest DDOT signal timing plans to those utilized in the July 2006 TIS, the New York Avenue/16th Street intersection, the New York Avenue/Bladensburg Road intersection and the Bladensburg Road/Montana Avenue intersection each had updated signal timings. The adjustments to the New York Avenue/16th Street intersection included slight adjustments to the splits for each phase and had little impact on the levels of service at this intersection. The adjustments at the New York Avenue/Bladensburg Road intersection, which included adjustments to the yellow and red times along with adjustments to the splits for each phase, were much more significant. Specifically, the timings utilized in the July 2006 TIS did not include red time for the mainline (New York Avenue) left turn phases; however, the new timings show a two second red time for these phases. The addition of red time to these phases provides a safety benefit but does take green time away, thereby, reducing capacity at this intersection. Finally, at the Bladensburg Road/Montana Avenue intersection, the most significant change was to the PM peak hour where the cycle length was reduced from 100 seconds to 80 seconds. The 2013 total future conditions with the redevelopment of the site under the revised development plan and with the updated signal timings are presented in Table 2. Synchro worksheets are included in Attachment I.

Table 2
Summary of Intersection Levels of Service

INTERSECTION [SYNCHRO NODE NUMBER]	July 2006 TIS – Zoning Commission Order No. 06-15				April 2009 Memo – Zoning Commission Case No. 09-06			
	2013 BACKGROUND CONDITIONS		2013 TOTAL FUTURE CONDITIONS WITH IMPROVEMENTS		2013 TOTAL FUTURE CONDITIONS (updated signal timings)		2013 TOTAL FUTURE CONDITIONS WITH IMPROVEMENTS	
	AM	PM	AM	PM	AM	PM	AM	PM
New York Avenue/16th Street [Node #1]								
EB	A (1.8)	B (10.4)	A (3.4)	D (52.4)	A (2.9)	C (27.3)	A (2.9)	C (27.3)
WB	A (3.2)	A (6.3)	D (50.7)	A (5.8)	B (15.7)	A (6.6)	B (14.6)	A (9.6)
NB	D (42.8)	D (52.9)	D (47.4)	E (57.3)	D (42.8)	E (56.9)	D (42.8)	E (56.9)
SB	D (42.1)	D (49.0)	D (37.4)	D (46.7)	D (38.8)	D (46.9)	D (38.8)	D (46.9)
Overall	A (3.0)	A (9.6)	D (36.3)	D (36.8)	B (12.1)	C (20.8)	B (11.4)	C (21.8)
New York Avenue/Bladensburg Road [Node #2]								
EB	D (42.0)	F (111.0)	D (44.9)	F (172.1)	F (89.0)	F (236.1)	D (53.8)	F (151.1)
WB	F (92.3)	D (47.0)	F (107.9)	D (42.5)	F (155.2)	E (63.5)	F (107.9)	D (36.7)
NB	D (36.5)	F (134.4)	C (34.1)	F (99.2)	C (26.5)	D (43.9)	C (30.2)	F (112.5)
SB	D (46.8)	E (56.7)	D (51.9)	E (78.4)	C (21.1)	C (26.0)	D (49.3)	E (74.2)
Overall	E (67.9)	F (92.0)	E (76.2)	F (118.9)	F (105.7)	F (145.2)	E (78.2)	F (108.1)
West Virginia Avenue/Mount Olivet Road [Node #3]								
EB	C (26.9)	F (174.5)	C (27.0)	F (199.5)	C (27.0)	F (177.1)	C (27.0)	F (177.1)
WB	D (36.8)	C (29.3)	D (37.2)	C (31.6)	D (37.0)	C (29.5)	D (37.0)	C (29.5)
NB	C (30.6)	F (141.5)	C (31.5)	F (143.0)	C (31.0)	F (159.4)	C (31.0)	F (144.6)
SB	B (15.5)	E (59.2)	B (14.6)	E (77.1)	B (15.7)	D (49.0)	B (14.5)	D (53.5)
Overall	C (28.1)	F (113.6)	C (27.9)	F (125.7)	C (28.2)	F (116.8)	C (27.9)	F (113.9)
Montana Avenue/17th Street [Node #4]								
EB	A [0.1]	A [0.0]	A [0.0]	A [0.0]	N/A	N/A	N/A	N/A
WB	A [4.9]	A [1.4]	A [5.6]	A [2.3]	A [5.1]	A [2.4]	A [5.1]	A [2.4]
NB	B [10.6]	B [10.9]	B [12.3]	C [15.2]	B [10.8]	B [11.7]	B [10.8]	B [11.7]
SB	A [0.0]	A [9.6]	N/A	N/A	N/A	N/A	N/A	N/A

[23.3] = unsignalized intersection control delay in sec/veh
(23.3) = signalized intersection control delay in sec/veh

Table 2 (continued)
Summary of Intersection Levels of Service

INTERSECTION [SYNCHRO NODE NUMBER]	July 2006 TIS – Zoning Commission Order No. 06-15				April 2009 Memo – Zoning Commission Case No. 09-06			
	2013 BACKGROUND CONDITIONS		2013 TOTAL FUTURE CONDITIONS WITH IMPROVEMENTS		2013 TOTAL FUTURE CONDITIONS (updated signal timings)		2013 TOTAL FUTURE CONDITIONS WITH IMPROVEMENTS	
	AM	PM	AM	PM	AM	PM	AM	PM
Bladensburg Road/Montana Avenue [Node #5]								
EB	D (49.0)	C (31.7)	D (35.4)	C (27.4)	D (41.2)	C (22.3)	D (42.1)	C (22.3)
WB	C (29.5)	C (32.4)	C (29.8)	C (24.9)	C (29.5)	C (22.0)	C (29.5)	C (22.0)
NB	A (7.1)	A (7.1)	A (7.2)	B (12.9)	A (7.1)	A (9.1)	A (7.1)	A (9.1)
SB	C (20.3)	B (17.7)	D (35.9)	C (26.1)	C (28.1)	C (22.9)	C (23.2)	C (22.9)
Overall	B (18.2)	B (13.9)	C (27.5)	B (19.8)	C (22.7)	B (15.6)	B (20.0)	B (15.6)
Bladensburg Road/Queens Chapel Road [Node #6]								
EB	D (39.9)	E (56.1)	D (39.7)	E (55.6)	D (39.7)	E (55.6)	D (39.7)	E (55.6)
NB	A (1.1)	A (2.4)	A (1.5)	A (0.4)	A (1.1)	A (2.4)	A (1.1)	B (10.3)
SB	C (25.4)	B (15.4)	C (25.6)	B (15.9)	C (25.4)	B (15.7)	C (25.4)	B (15.7)
Overall	B (19.0)	B (15.4)	B (18.6)	B (14.3)	B (18.6)	B (15.2)	B (18.6)	B (18.8)
New York Avenue/Montana Avenue (West 1) [Node #7]								
SB	C [17.5]	B [11.3]	C [18.6]	B [10.6]	C [17.5]	B [11.4]	C [18.6]	B [11.3]
New York Avenue/Montana Avenue (West 2) [Node #8]								
EB	B (16.7)	F (273.5)	C (32.6)	F (281.7)	B (16.0)	F (323.6)	B (16.0)	F (270.3)
WB	D (47.1)	A (0.6)	F (100.5)	A (4.5)	F (81.7)	A (1.3)	E (67.5)	A (1.8)
SB	D (45.1)	F (264.9)	D (54.9)	F (155.6)	D (45.2)	F (283.4)	D (53.5)	F (249.0)
Overall	D (38.2)	F (191.2)	E (77.2)	F (184.6)	E (59.6)	F (222.1)	D (51.6)	F (187.1)
Montana Avenue/West Virginia Avenue (West) [Node #9]								
EB	C (31.1)	D (40.2)	C (31.0)	D (41.4)	C (31.0)	D (41.0)	C (31.0)	D (41.0)
SB	A (5.6)	A (7.8)	A (5.2)	A (9.5)	A (5.1)	A (8.6)	A (5.3)	A (7.9)
Overall	B (14.0)	C (30.7)	B (12.7)	C (24.5)	B (13.7)	C (29.3)	B (13.8)	C (29.0)

[23.3] = unsignalized intersection control delay in sec/veh
 (23.3) = signalized intersection control delay in sec/veh

Table 2 (continued)
Summary of Intersection Levels of Service

INTERSECTION [SYNCHRO NODE NUMBER]	July 2006 TIS – Zoning Commission Order No. 06-15				April 2009 Memo – Zoning Commission Case No. 09-06			
	2013 BACKGROUND CONDITIONS		2013 TOTAL FUTURE CONDITIONS WITH IMPROVEMENTS		2013 TOTAL FUTURE CONDITIONS (updated signal timings)		2013 TOTAL FUTURE CONDITIONS WITH IMPROVEMENTS	
	AM	PM	AM	PM	AM	PM	AM	PM
Montana Avenue/West Virginia Avenue (East) [Node #10]								
EB	A (0.5)	A (1.3)	A (0.9)	A (0.9)	A (1.1)	A (1.0)	A (0.8)	A (1.0)
NB	D (50.4)	E (65.0)	D (42.5)	E (67.5)	F (88.7)	F (274.3)	D (53.9)	E (73.4)
Overall	C (22.2)	B (19.2)	C (31.7)	C (34.4)	E (58.9)	F (120.6)	D (35.9)	C (32.7)
New York Avenue/Montana Avenue (East) [Node #11]								
EB	A (1.6)	F (200.7)	A (1.2)	F (227.6)	A (1.6)	F (233.4)	A (1.4)	F (195.9)
WB	F (106.5)	A (6.9)	F (110.7)	C (26.8)	F (106.4)	A (7.5)	F (105.5)	B (14.4)
NB	C (28.1)	D (50.0)	D (46.3)	D (54.0)	C (29.3)	E (58.5)	C (23.9)	D (54.0)
Overall	E (69.9)	F (129.3)	E (70.7)	F (148.9)	E (67.3)	F (150.6)	E (66.0)	F (129.2)
New York Avenue/West Virginia Avenue (West) [Node #12]								
NB	A [9.2]	B [14.0]	A [9.5]	B [15.0]	A [9.4]	C [15.1]	A [9.4]	C [16.3]
New York Avenue/Montana Avenue (Northeast) [Node #23]								
WB	B [10.4]	B [11.0]	B [11.9]	B [14.2]	B [11.7]	B [11.5]	B [11.7]	B [11.7]
New York Avenue/Montana Avenue (Northwest) [Node #22]								
WB	B [10.9]	B [11.5]	B [10.1]	B [11.7]	B [11.0]	B [11.6]	B [11.0]	B [11.6]
Frontage Road/West Driveway [Node #13]								
NB	N/A	N/A	A [8.6]	A [9.3]	A [8.7]	A [9.9]	A [8.7]	A [9.9]
Frontage Road/A Street [Node #27]								
NB	N/A	N/A	N/A	N/A	A [8.6]	A [9.2]	A [8.6]	A [9.2]
Frontage Road/East Driveway [Node #14]								
NB	N/A	N/A	A [8.5]	A [9.0]	A [8.5]	A [8.9]	A [8.5]	A [8.9]

[23.3] = unsignalized intersection control delay in sec/veh
(23.3) = signalized intersection control delay in sec/veh

Allan Fye
May 19, 2009
Page 10 of 16

Table 2 (continued)
Summary of Intersection Levels of Service

INTERSECTION [SYNCHRO NODE NUMBER]	July 2006 TIS – Zoning Commission Order No. 06-15				April 2009 Memo – Zoning Commission Case No. 09-06			
	2013 BACKGROUND CONDITIONS		2013 TOTAL FUTURE CONDITIONS WITH IMPROVEMENTS		2013 TOTAL FUTURE CONDITIONS (updated signal timings)		2013 TOTAL FUTURE CONDITIONS WITH IMPROVEMENTS	
	AM	PM	AM	PM	AM	PM	AM	PM
Montana Avenue/North Access [Node #16]								
EB	N/A	N/A	A [0.5]	A [0.5]	A [1.1]	A [1.9]	A [1.1]	A [1.9]
SB	N/A	N/A	C [15.3]	C [18.6]	B [13.6]	B [13.1]	B [13.6]	B [13.1]
Montana Avenue/Middle Site Driveway [Node #15] (DELETED)								
EB	N/A	N/A	A [0.0]	A [0.0]	N/A	N/A	N/A	N/A
SB	N/A	N/A	C [19.7]	D [27.1]	N/A	N/A	N/A	N/A
Montana Avenue/Emergency Access [Node #17] (DELETED)								
EB	N/A	N/A	A [2.2]	A [5.3]	N/A	N/A	N/A	N/A
SB	N/A	N/A	C [17.0]	B [14.8]	N/A	N/A	N/A	N/A
Montana Avenue/B Street [Node #18]								
EB	N/A	N/A	A [2.3]	A [4.6]	A [0.7]	A [1.7]	A [0.7]	A [1.7]
SB	N/A	N/A	D [26.7]	D [32.3]	C [15.5]	B [12.7]	C [15.5]	B [12.7]
Montana Avenue/South Access [Node #24]								
EB	N/A	N/A	N/A	N/A	A [0.4]	A [1.2]	A [0.4]	A [1.2]
SB	N/A	N/A	B [14.9]	B [13.0]	B [12.8]	B [11.8]	B [12.8]	B [11.8]
Bladensburg Road/South Access [Node #25]								
EB	N/A	N/A	B [12.7]	B [10.8]	B [11.6]	B [10.1]	B [11.6]	B [10.1]
Bladensburg Road/C Street [Node #26]								
EB	N/A	N/A	N/A	N/A	B [11.6]	B [10.3]	B [11.6]	B [10.3]
Bladensburg Road/North Access [Node #19]								
EB	N/A	N/A	B [12.2]	B [10.8]	B [11.7]	B [10.2]	B [11.7]	B [10.0]
New York Avenue/Frontage Road (East) [Node #21]								
NB	N/A	N/A	A [9.8]	C [15.6]	A [10.0]	B [14.7]	A [10.0]	C [15.7]

[23.3] = unsignalized intersection control delay in sec/veh
(23.3) = signalized intersection control delay in sec/veh

As shown in Table 2, the site traffic and the adjustments to the signal timings would have some impact on the levels of service at the study intersections when comparing to the July 2006 background conditions. To better accommodate the new traffic volumes under these adjusted conditions, the splits and offsets at several study intersections were adjusted further. These signal timing adjustments are present in Table 3. Though not shown in the table, consistent with the July 2006 TIS, the phasing at the New York Avenue/Bladensburg Avenue intersection was modified to more conventional phasing (i.e., the mainline left turn phases occur simultaneously with the mainline through movements following).

Table 3
Signal Timing Adjustments*

INTERSECTION [SYNCHRO NODE NUMBER]	SPLIT/ OFFSET	AM PEAK PERIOD			PM PEAK PERIOD		
		Existing	Delta	Proposed	Existing	Delta	Proposed
New York Avenue/ 16 th Street [Node 1]	EB/WB	66	-	66	70	-	70
	NB/SB	34	-	34	50	-	50
	Offset	37	-	37	113	-	113
New York Avenue/ Bladensburg Road [Node 2]	EBL	13	+2	15	35	-16	19
	EBT	32	+7	39	67	+13	80
	WBL	34	-	34	18	-2	16
	WBT	53	+5	58	50	+27	77
	NB/SB	34	-7	27	35	-11	24
	Offset	26	-	26	22	-	22
Mount Olivet Road/ West Virginia Avenue [Node 3]	EB/WB	43	-	43	43	-	43
	SBL	18	-	18	15	-1	14
	NB/SB	39	-	39	42	+1	43
	Offset	44	-	44	7	-	7
Montana Avenue/ Bladensburg Road [Node 5]	EB/WB	30	-	30	26	-	26
	NBL	29	-	29	23	-	23
	NB/SB	41	-	41	31	-	31
	Offset	92	-	92	19	-	19
Bladensburg Road/ Queens Chapel Road [Node 6]	EB	27	-	27	29	-	29
	NBL	29	-	29	23	-	23
	NB/SB	44	-	44	68	-	68
	Offset	74	-	74	47	-	47
New York Avenue/ Montana Avenue (West 2) [Node 8]	EB/WB	58	-	58	66	+5	71
	WB	16	+2	18	33	-6	27
	SB	26	-2	24	21	+1	22
	Offset	61	-	61	65	+15	80
Montana Avenue/ West Virginia Avenue (West) [Node 9]	EB	20	-	20	37	-	37
	SB	80	-	80	83	-	83
	Offset	61	-	61	65	+15	80
Montana Avenue/ West Virginia Avenue (East) [Node 10]	EB	80	-4	76	105	-7	98
	NB	20	+4	24	15	+7	22
	Offset	61	-	61	65	+15	80
New York Avenue/ Montana Avenue (East) [Node 11]	EB/WB	65	-	65	73	+4	77
	NB	35	-	35	47	-4	43
	Offset	61	-	61	65	+15	80

* All timings shown are in seconds. Existing signal timings were obtained in April 2009.

The results of the capacity analyses for the 2013 total future conditions per under the revised development plan with the timing adjustments shown in Table 3 are presented in Table 2. Synchro worksheets are included in Attachment II. As shown, generally the timings adjustments would mitigate the impact of the proposed redevelopment. Additionally, as anticipated, the redevelopment as now proposed would have significantly less impact on the surrounding roadway network compared to the development plan analyzed in the July 2006 TIS.

In addition to the improvement to the levels of service over the July 2006 TIS, the proportional impact at key study intersections also would be significantly reduced with the development program now proposed as shown in Table 4.

Table 4
Proportional Impact Summary

INTERSECTION	July 2006 TIS Zoning Commission Order No. 06-15		April 2009 Memo Zoning Commission Case No. 09-06	
	AM	PM	AM	PM
New York Avenue/16 th Street [Node #1]	12.9%	14.0%	7.3%	8.1%
New York Avenue/Bladensburg Road [Node #2]	3.6%	5.2%	1.4%	1.9%
Bladensburg Road/Montana Avenue [Node #5]	11.8%	12.2%	2.8%	2.2%

PEDESTRIAN AND BICYCLE CONSIDERATIONS

PEDESTRIANS

Within the study area, sidewalks generally are present along both sides of New York Avenue, both sides of Bladensburg Road, both sides of Montana Avenue, both sides of West Virginia Avenue, and both sides of Mount Olivet Road. No sidewalks are present along 16th Street and 17th Street. Pedestrian signals with clearly marked crosswalks are located at all signalized study intersections.

The District of Columbia Pedestrian Master Plan (April 2009) strives to make Washington, D.C. safer and more walkable by improving sidewalks, roadway crossings, and the quality of the pedestrian environment as well as by ensuring that the District's policies and procedures support walking. The plan provides an overview of existing pedestrian conditions, recommends new pedestrian projects and programs, establishes performance measures, and provides a plan for implementation through 2018.

According to the Plan, within the study area, New York Avenue and Bladensburg Road contain areas of moderate to moderately high pedestrian activity and pedestrian deficiency. Montana Avenue and Mount Olivet Road have moderately low pedestrian activity and pedestrian deficiencies.

The Plan identifies priority pedestrian corridors, which include Bladensburg Road between Benning Road and Eastern Avenue within the study area. Detailed recommendations to improve walking conditions on each of the priority corridors are being developed.

The proposed streetscapes along the perimeter of the site and along the internal streets within the site include sidewalks and street trees to enhance the walkability of the site.

BICYCLES

DDOT published a District of Columbia Bicycle Master Plan in April 2005. That document evaluates existing bicycling facilities, policies, and other bicycle-related matters. It also establishes goals, makes recommendations for achieving those goals, and presents an implementation plan.

According to the Master Plan, the Bicycle Level of Service (BLOS) on Bladensburg Road and Montana Avenue is BLOS “D” and the BLOS on New York Avenue is BLOS “E”.

The Plan recommends new multi-use trails on both New York Avenue and Bladensburg Road in the vicinity of the site. Additionally, the Plan recommends a proposed bicycle lane on West Virginia Avenue in the vicinity of the site.

PUBLIC TRANSPORTATION

The Rhode Island Metro Station, which serves the Red Line, is located approximately one mile, “as the crow flies,” from the subject site. The Rhode Island Metro Station has 350 all-day parking spaces as well as 40 short-term metered parking spaces and has a designated ‘Kiss-and-Ride’ area.

The New York Avenue Metro Station, which also serves the Red Line, is located approximately 1.75 miles from the site. Parking is not available at the New York Avenue Metro Station. Additionally, no ‘Kiss-and-Ride’ area is provided at the New York Avenue Metro Station.

Metrobus service is limited in the study area, as shown on Figure 9. Six bus stops are located within a one mile radius of the site. Of those, three are located within a ½ mile radius of the site. These stops are located on Bladensburg Road at New York Avenue, 26th Street, and South Dakota Avenue. Bus stops are also located on New York Avenue at 16th Street, on Rhode Island Avenue at 18th Street and on Mount Olivet Road at Montello Avenue. Bus trips to/from the New York Avenue/Bladensburg Road stop operate only when public school is open and only provide service during off-peak times.

The Bladensburg Road–Anacostia Line (Metrobus Route B2), Fort Lincoln Shuttle Line (Metrobus Route B8, B9), Ivy City-Union Station Line (Metrobus Route D4), Hospital Center Line (Metrobus Route D8), Military Road-Crosstown Line (Metrobus Route E2, E3), National Arboretum Line (Metrobus Route X6), provide bus service in the study area.

Route B2 provides service to the Anacostia Metro Station. Routes B8 and B9 provide service to the Rhode Island Avenue-Brentwood Metro Station. Routes D4, D8, and X6 provide service to the Union Station Metro Station. Route D8 also provides service to the Rhode Island Avenue-Brentwood Metro Station. Routes E2 and E3 provide service to the Fort Totten Metro Station and the Friendship Heights Metro Station.

In conjunction with the July 2006 TIS, a preliminary evaluation was performed to determine if any existing bus routes could be altered to provide service to the proposed site. The analysis showed that the Ivy City-Union Station Line (Route D4), the Hospital Center Line (Route D8), and the Military Road-Crosstown Line (Metrobus Route E2, E3) could be modified to provide a stop adjacent to the proposed development without altering the existing route significantly. Also, the Bladensburg Road-Anacostia Line (Route B2) currently operates along Bladensburg Road past the proposed site. However, this bus line would have to be extended to operate year round and during peak hours. Potential transit route alterations are shown on Figure 10.

It is anticipated that as redevelopment in the area continues, bus service could be expanded. In fact, WMATA has made some short-, medium-, and long-term recommendations for transit service in the area. The medium-term recommendations include enhancing the bus service on the existing lines in the area through increased schedule frequency and the introduction of new transit stops at specific locations.

TRANSPORTATION MANAGEMENT PLAN

The Applicant, Abdo New York, is committed to providing a Transportation Management Plan (TMP) in an effort to decrease reliance on the personal automobile and encourage the use of transit, ridesharing, bicycling and walking. To that end, the TDM components described below should be considered with the proposed redevelopment of the site per Zoning Commission Case No. 09-06.

- Transportation Coordinator - A Transportation Management Coordinator (TMC) would be designated to implement the TDM program and advise residents, tenants, and employees of the availability and location of the TDM coordinator and program at least once a year. The position may be part of other duties assigned to the individual.
- Transit Incentives – Information on Metrorail, Metrobus, and other public transportation facilities, services, routes, schedules, and fares would be provided. Information regarding free guaranteed rides home in cases of emergency also will be provided. Additionally, at the time of initial lease/sales, SmarTrip cards would be provided to residents.
- Website – Website hotlinks to CommuterConnections.com and goDCgo.com would be provided on the developer and property management websites.
- Car Sharing – Dedicated a certain number of free parking spaces for car sharing (i.e. ZipCar or FlexCar). The number of spaces would be determined by the car-sharing vendor. These spaces would be located at garage entrances and would be available to the public 24 hours a day, seven days a week, without restrictions. Adequate signage would be provided to navigate users to the spaces.
- Bicycle Storage – Storage facilities for bicycles would be provided for residents, possibly in the parking structure. Bicycle parking, in accordance with DC zoning requirements, would be provided on the site.
- Loading – Loading for the proposed development would take place off-street. Trucks would enter and exit the site front first thereby minimizing disruption to the adjacent public roadways.
- On-site Retail – Community serving retail uses would be provided on-site to minimize mid-day and peak hour auto travel by residents.

- Telecommuting Incentives – All residential units would be pre-wired with broadband, high capacity data/network connections to facilitate telecommuting. Additionally, through property management, access to copier, fax, and internet service would be available to residents.
- Information Dissemination – Information regarding Metrorail, Metrobus, the project's shuttle and other public transportation facilities, routes, schedules and fares would be provided to new residents moving onto the property and would be presented at the time of closing for either purchase or lease of a unit.

NEW YORK AVENUE CORRIDOR STUDY

In order to address transportation deficiencies along the New York Avenue Corridor, DDOT initiated a study of the New York Avenue Corridor in July 2002. The study culminated in a final report dated November 2006. The purpose of the study was to develop a plan for the Corridor that would:

- Provide multimodal transportation, including automobiles, public transit, railroad, bicycles and pedestrians;
- Facilitate smooth traffic flow;
- Ensure an ability to accommodate local and regional vehicular transportation and transit needs foreseeable over the next thirty to fifty years;
- Create capacity for major commercial and residential development;
- Avoid displacement of existing residents or exclusion of income diversity.

The study recommended construction of a new single-point urban interchange (SPUI) at the New York Avenue/Bladensburg Road intersection. Under the SPUI configuration, New York Avenue would pass underneath Bladensburg Road.

The frontage road proposed as part of this PUD allows for the accommodation of the future construction of the New York Avenue/Bladensburg Road interchange and it eliminates 16 access points directly on New York Avenue by providing one point of ingress from New York Avenue and one point of egress onto New York Avenue.

CONCLUSIONS AND RECOMMENDATIONS

Compared to the development program proposed as part of Zoning Commission Order No. 06-15, which was evaluated in the July 2006 TIS, the new development program associated with Zoning Commission Case No. 09-06 would have significantly less impact to the surrounding roadway network. In fact, the site trips that are anticipated to be generated by the redevelopment would account for less than two percent at the New York Avenue/Bladensburg Road intersection. With the timing adjustments outlined in Table 3 and the various TDM strategies suggested, the impact of the redeveloped site would be minimized.

The revised PUD also would retain a significant benefit of the previous PUD in the construction of the frontage road along New York Avenue. This frontage road would facilitate construction of a future interchange at New York Avenue/Bladensburg Road and would consolidate 16 access points on New York Avenue into one point of ingress from New York Avenue and one point of egress onto New York Avenue.

We hope that this memorandum provides you with sufficient information regarding the traffic impact of the PUD application associated with Zoning Commission Case No. 09-06. Should you require any additional information, please do not hesitate to contact us at (724) 933-9010 or jlmilanovich@mjwells.com.

FIGURES



WELLS + ASSOCIATES

\\unitburg-tylond\Projects\4494_Arbor Place\Graphics\4494_Memo_Graphics.dwg

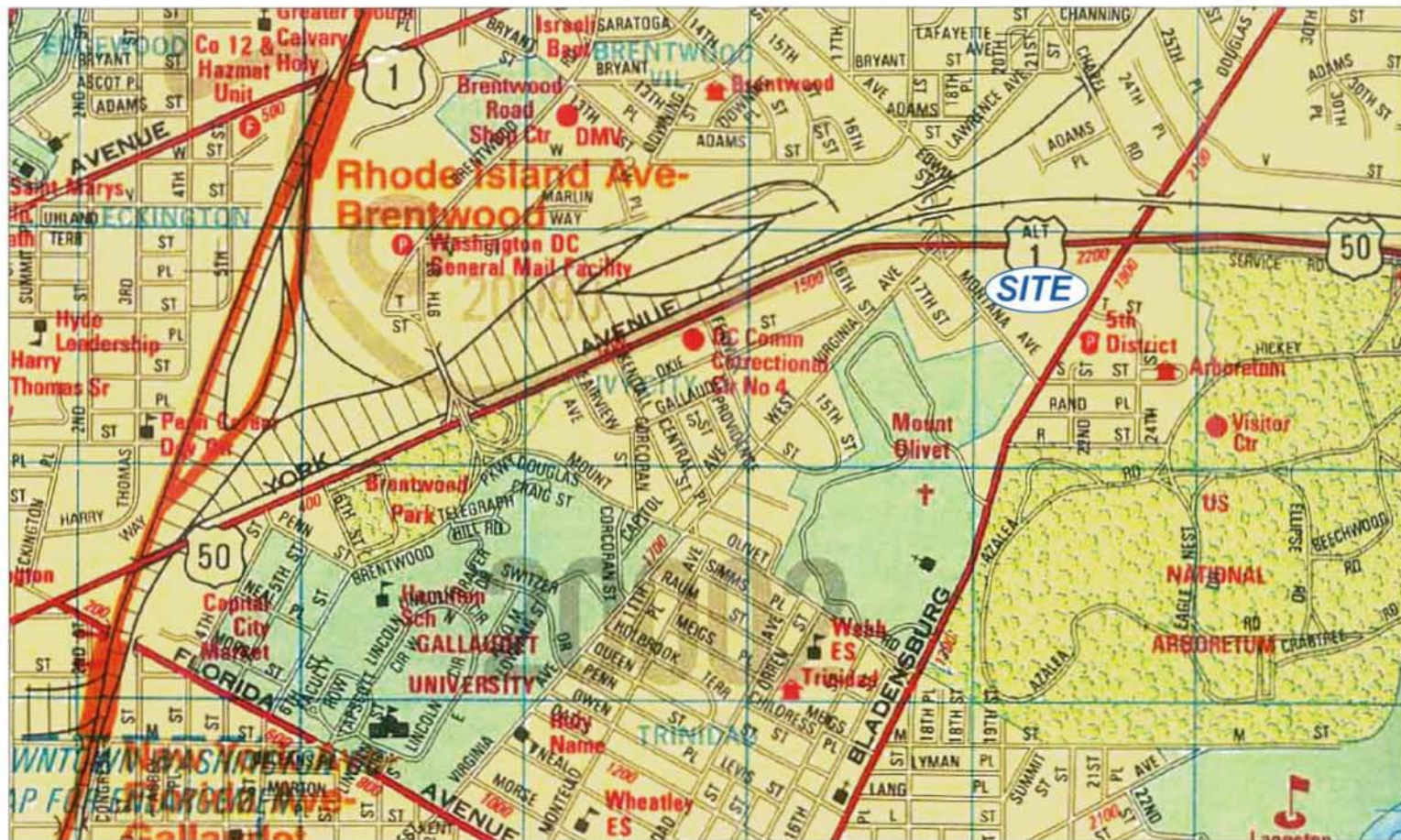


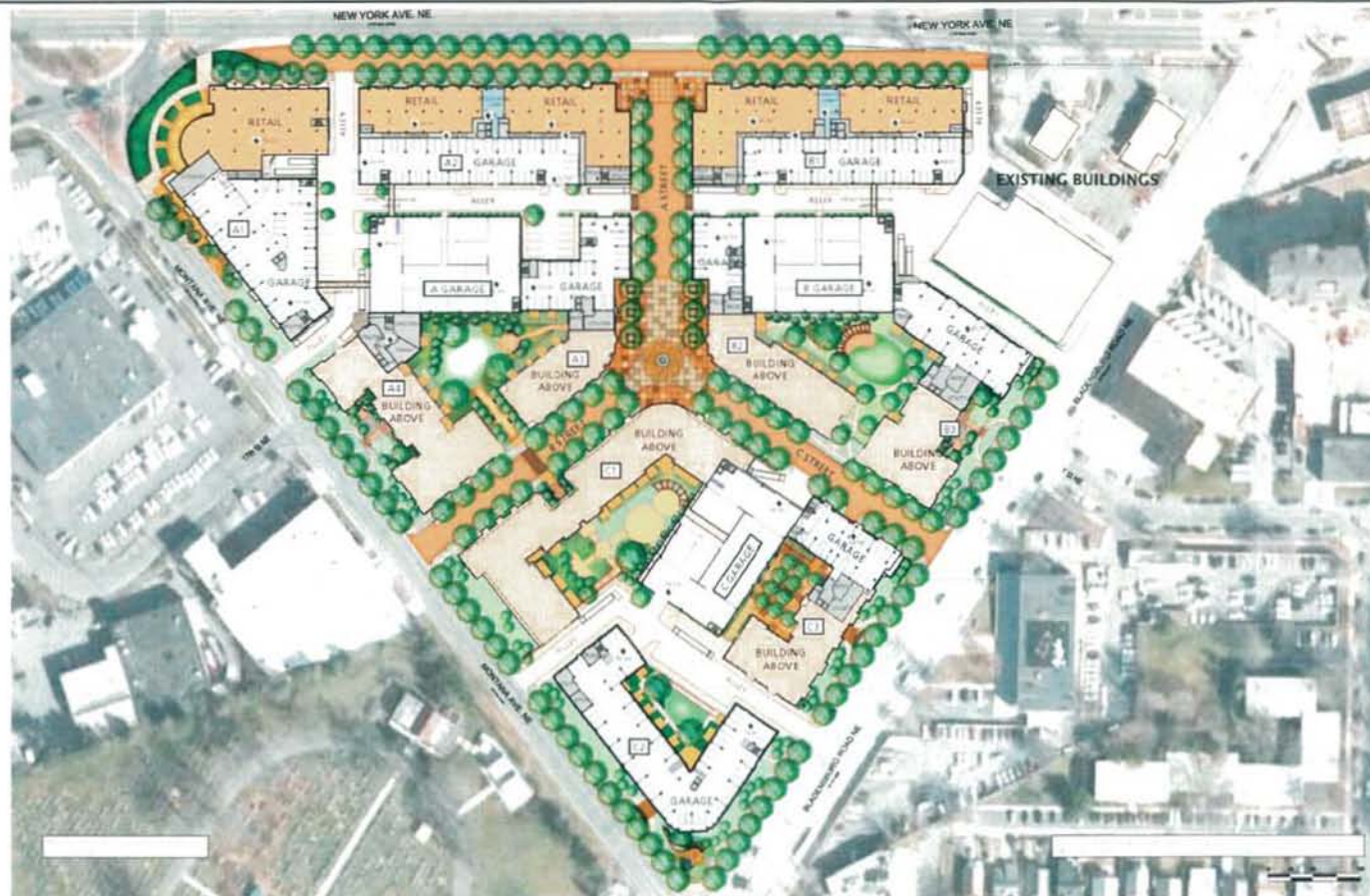
Figure 1
Site Location



Arbor Place
Washington, D.C.

WA WELLS + ASSOCIATES, INC.

\\pittsburgh-1\shared\Projects\4494 Arbor Place\Graphics\4494 Memo Graphics.dwg



Garage Level Plan

DATE: 1/15/14
DRAWN: J. L. LEE
CHECKED: J. L. LEE
APPROVED: J. L. LEE

AR14

ARBOR PLACE

Figure 2A
Reduced Garage Level Plan



Arbor Place
Washington, D.C.

WA WELLS + ASSOCIATES, INC.

\\pittsburgh-1\Users\Projects\4494 Arbor Place\Graphics\4494 Memo Graphics.dwg



Retail Level / Ground Floor Plan

WELLS + ASSOCIATES, INC. 1001 15TH STREET, N.W.
WASHINGTON, D.C. 20004-4494

AR015

ARBOR PLACE

Figure 2B
Reduced Retail Level/Ground Floor Plan



Arbor Place
Washington, D.C.



\\pittsburgh-1\shared\Projects\4494- Arbor Place\Graphics\4494 Memo Graphics.dwg

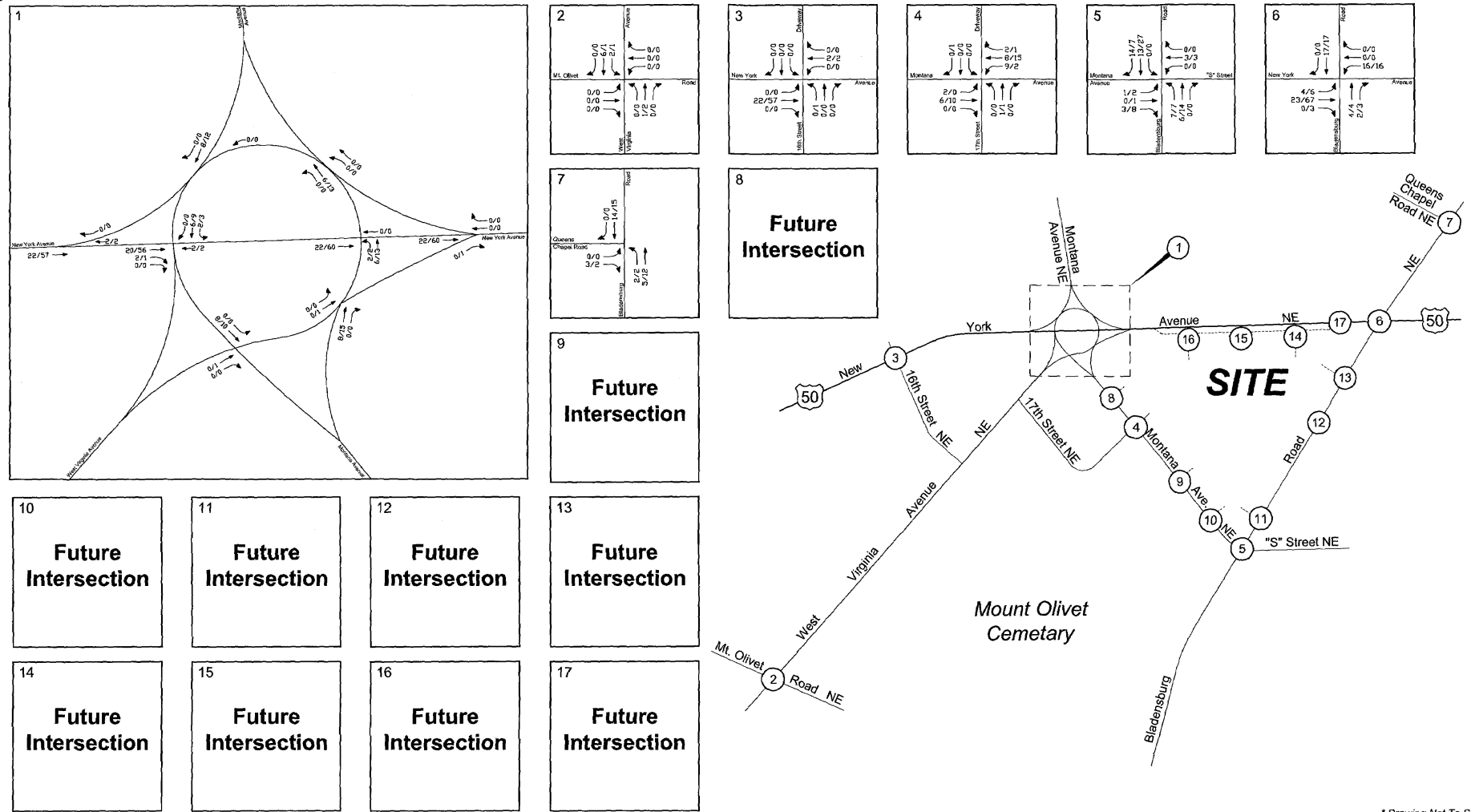


Figure 6
Existing Peak Hour Site Trips

* Drawing Not To Scale

AM Peak Hour
PM Peak Hour
000/000



Abdo New York Avenue
Washington, D.C.

WA WELLS & ASSOCIATES, INC.

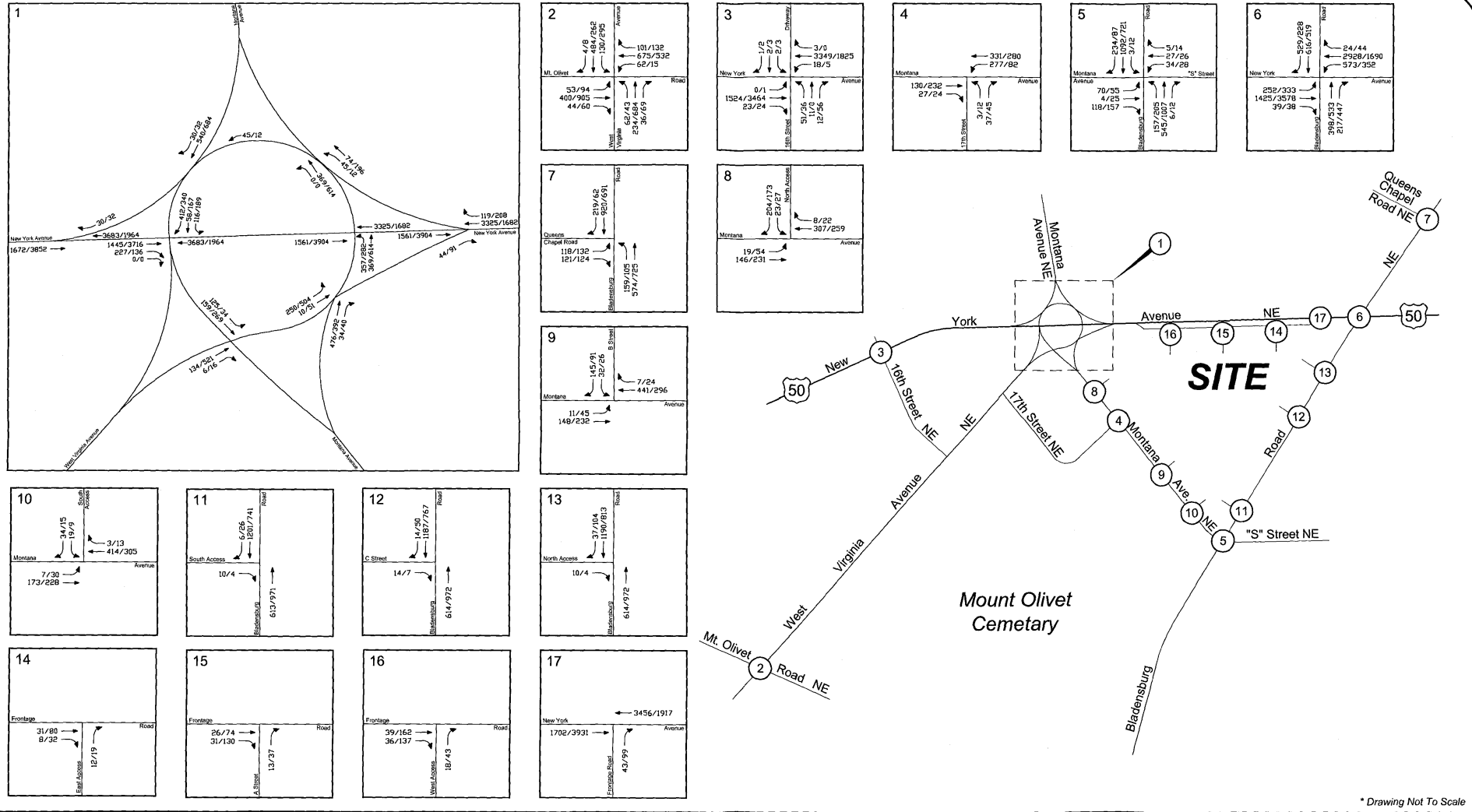
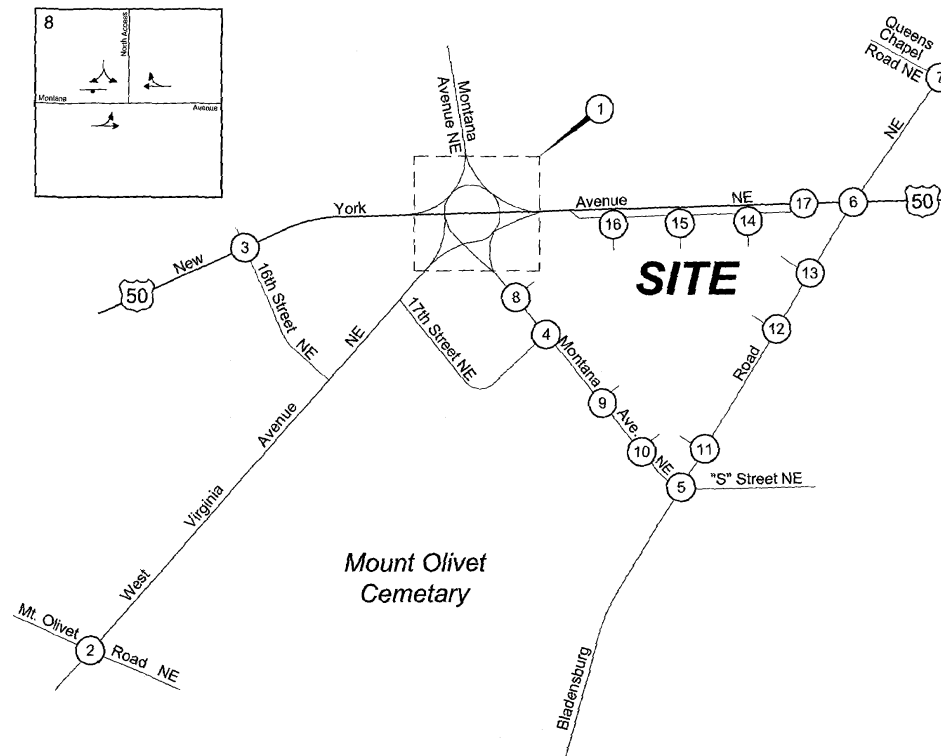
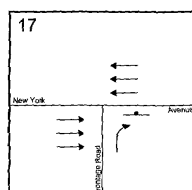
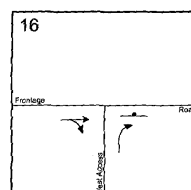
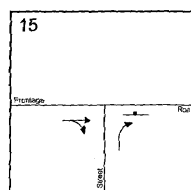
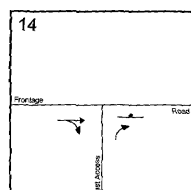
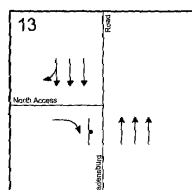
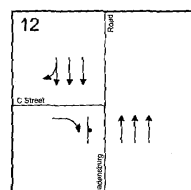
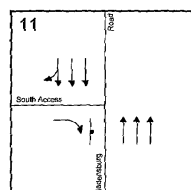
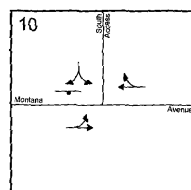
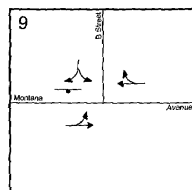
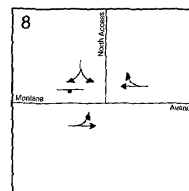
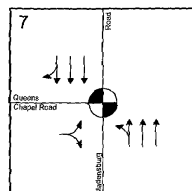
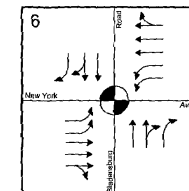
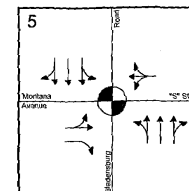
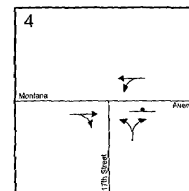
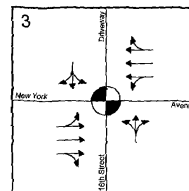
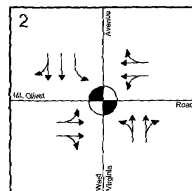


Figure 7
2013 Total Future Peak Hour Traffic Forecasts

Abdo New York Avenue
Washington, D.C.



- ← Represents One Travel Lane
- ⊗ Signalized Intersection
- Stop Sign
- ▽ Yield Sign



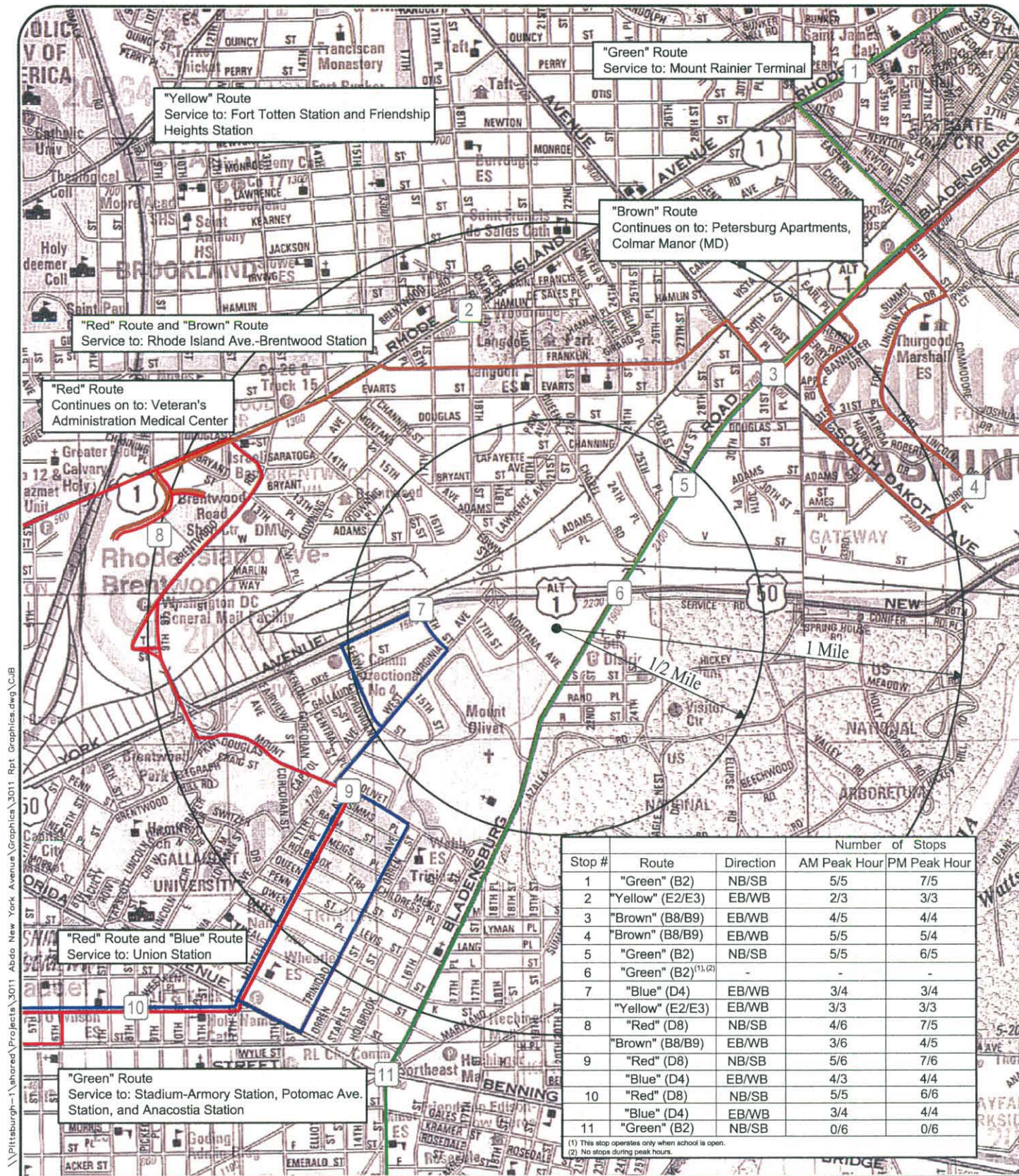


Figure 9
Metrobus Service



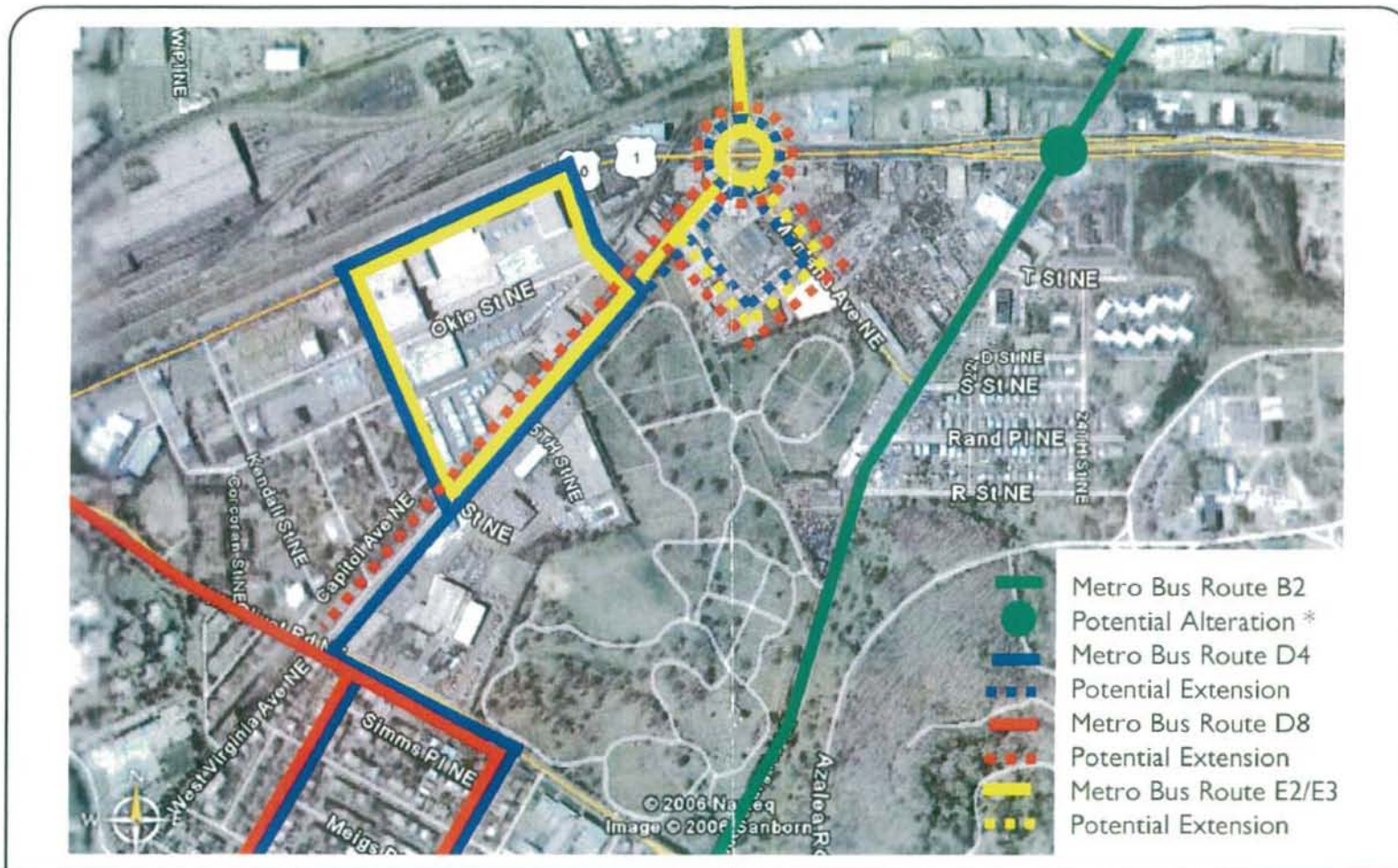


Figure 10
Potential Transit Route Alterations

* This Stop Operates Only When School Is Open.
Alteration Would Include Operating Year Round
And During Peak Hours.

