



WELLS & ASSOCIATES, LLC

TRAFFIC, TRANSPORTATION and PARKING CONSULTANTS

ZONING COMMISSION

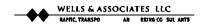
MEETING THE NEEDS OF A MOBILE SOCIETYZONING COMMISSION

CASE NO. CASE NO.03-30
EXHIBIT NO.278 |

Prepared for
Pollin Memorial Community Development, LLC
And
District of Columbia Housing Authority

Prepared by Wells & Associates LLC

June 29 2007



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#### Section I INTRODUCTION

This report presents the results of a traffic impact analysis of the Linda Joy & Kenneth Jay Pollin Memorial Community residential project within Parkside in Ward 7 in the northeast section of Washington DC as shown on Figure 1.1

Parkside is located east of Kenilworth Aquatic Gardens west of Kenilworth Avenue and south of Mayfair. The subject site consists of 257 976 square feet of land area in Square 5040 a portion of Parcel 170/27 and 170/28 in the northeast section of Washington D.C. Lot 804 in Square 5040 is zoned R.5. A and is bounded by Anacosita Avenue. Hayes Street. Barnes Street and Grant Street. Parcel 170/27 and 170/28 which are triangular in shape and not now included in a zone district, are collectively bounded by Hayes Street, Anacostia Avenue and Kenilworth Park.

Pollin Memorial Community Development and the District of Columbia Housing Authority propose a Planned Unit Development consisting of 125 residential units and 125 off street parking spaces. The 42 rental apartment units that currently occupy the site would be replaced and the remaining 83 units would be owner occupied townhomes.

The subject site is served by a connected network of local streets including Anacostia Avenue Barnes Street, Grant Place and Hayes Street. Parkside is connected to Route 295 (Kenilworth Avenue) a limited access highway. The closest interchanges are located to the north at Nannie Helen Burroughs Avenue and to the south at Benning Road.

For purposes of this traffic analysis this development was assumed to be completely built and occupied three years hence by 2010

Tasks undertaken in this study included the following

- I Review the proposed development plans and other background data
- 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 four (4) key intersections
- 4 Analysis of existing levels of service at these intersections
- 5 Background future traffic volumes were forecasted for project buildout

- Background levels of service were calculated at key intersections based on background traffic forecasts existing traffic controls and existing intersection geometrics
- The number of AM and PM peak hour trips that would be generated by the proposed project were estimated based on (I) Institute of Transportation Engineers (ITE) trip generation rates (2) the proximity of the project to the nearest Metro station and (3) experience with other comparable projects in Washington D C
- 8 Total future traffic volumes were forecasted for 2010
- Total future levels of service were calculated at key intersections based on total future traffic forecasts existing traffic controls and existing intersection geometrics
- 10 The adequacy of the proposed number of parking spaces were evaluated

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 Office of Planning the District Department of Transportation (DDOT) Parkside Mixed Use Development Traffic Impact Study Gorove Slade August 8 2005 and the development team

#### The conclusions of this traffic impact study are as follows.

- Turning movements at the four intersections in the study area currently operate at level of service (LOS) "C" or better during both the AM and PM peak hours
- With the development of the Parkside PUD and without the Linda Joy & Kenneth Jay Pollin Memorial Community, the eastbound to southbound right turn movement at the Kenilworth Avenue access road intersection would operate at LOS "F" during the AM peak hour Turning movements at the other study intersections would operate at LOS "A" or "B" during the AM and PM peak hours
- The Linda Joy & Kenneth Jay Pollin Memorial Community residential project will add 24 new AM peak hour trips and 28 new PM peak hour trips, to the public street system upon project completion
- The net additional trips that would be generated by the proposed residential project will not have an adverse impact on traffic conditions in the study area On average, motorists on Hayes Street at the Kenilworth Avenue access road would realize 8 7 seconds of additional delay
- The 125 off-street parking spaces would satisfy the one parking space per unit requirement per code for the Linda Joy & Kenneth Jay Pollin Memorial Community residential project Additionally, on-street parking spaces will be provided throughout the community
- With the Metrobus stops adjacent to the site on Hayes Street, the Minnesota Metro station located less than one-half of a mile from the project, and a connected sidewalk network, along with the TMP measures proposed, the car sharing spaces and bicycle racks, residents of the proposed Linda Joy and Kenneth Jay Pollin Memorial Community would have transportation options other than the private automobile

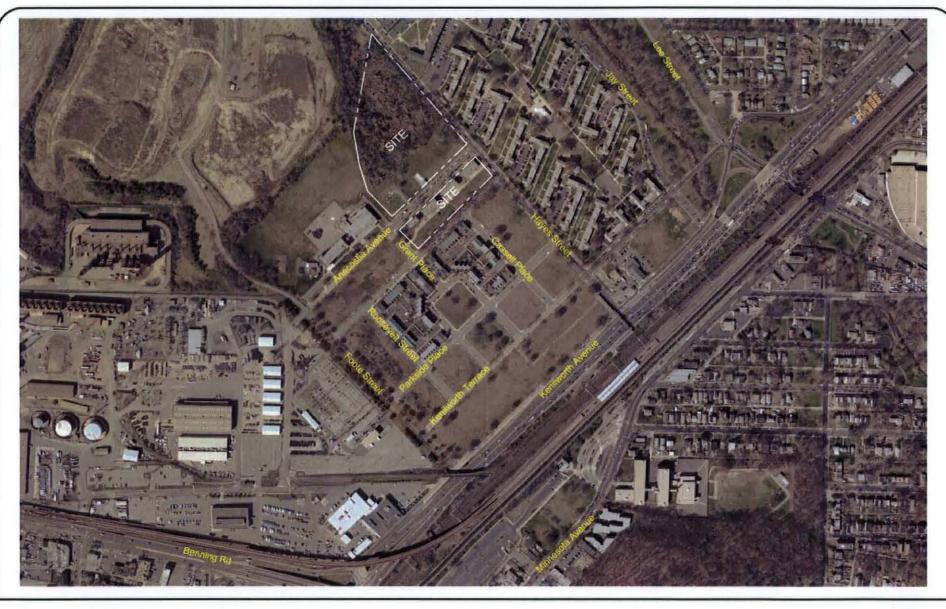


Figure 1—1 Site Location





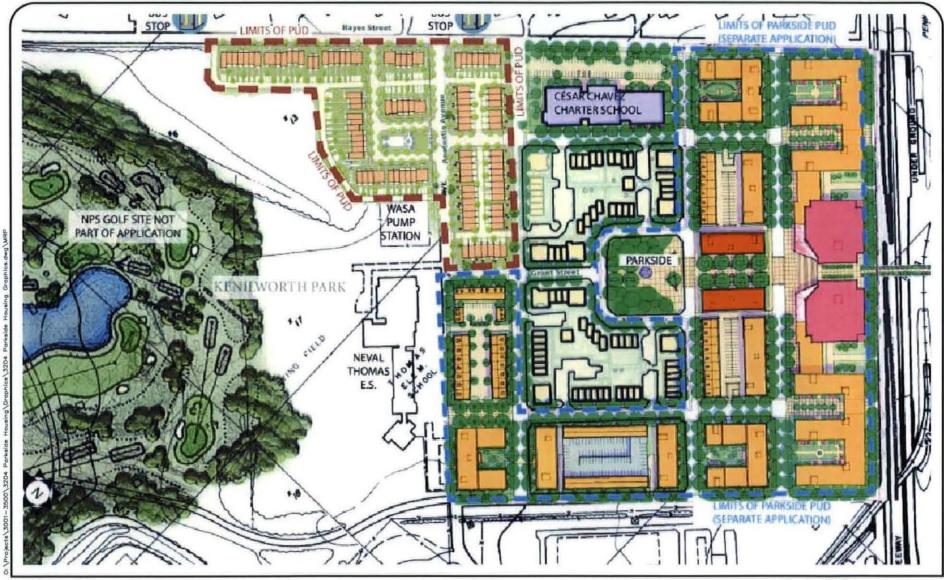


Figure 1-2 Site Plan

Plan Provided By: Torti Gallas & Partners



# Section 2 BACKGROUND DATA

#### Overview

This section presents the general study scope and background data regarding the public road network, existing vehicular and pedestrian traffic counts, public transportation facilities and services, curb parking, and bicycle facilities

#### **Study Scope**

This traffic study includes the following intersections

- I Kenilworth Avenue/Foote Street
- 2 Anacostia Avenue/Hayes Street
- 3 Kenilworth Terrace/Hayes Street.
- 4 Kenilworth Avenue/Hayes Street.

Also two future intersections along Hayes Street and on intersection along Anacostia Avenue were included

#### **Public Road Network**

**Overview.** The subject site is served by a connected network of local streets and a freeway Existing intersection lane use and traffic control at key intersections in the site vicinity are shown on Figure 2-I

In the site vicinity, Kenilworth Avenue is classified by DDOT as a freeway. Anacostia Avenue, Foote Street, Hayes Street, and Kenilworth Terrace are classified as local streets.

Kenilworth Avenue (Route 295) is a north-south, limited access, freeway connecting the Baltimore Washington Parkway in Maryland to Interstate 295 in Washington, D.C. Access to Kenilworth Avenue, in the immediate site vicinity is provided via southbound access road. The closest interchanges are located to the north at Nannie Helen Burroughs Avenue and to the south at Benning Road.

Anacostia Avenue in the site vicinity is a 30-foot road that connects Hayes Street Foote Street. On-street parking is permitted on both sides of Anacostia Avenue Sidewalks are located on either side of Anacostia Avenue in the site vicinity

Foote Street is a two-way, local street that connects Anacostia Avenue to the Kenilworth Avenue access road. Sidewalks are located on the both side of Foote Street.

Hayes Street is a 62-foot wide local street that operates one-way westbound between Kenilworth Terrace and Mayfair Terrace Between Kenilworth Avenue and Kenilworth Terrace, Hayes Street operates two-way Sidewalks are located on both sides of Hayes Street. A pedestrian bridge over Kenilworth Avenue is located on the south side of Hayes Street at the Kenilworth Avenue access road, connecting pedestrians to the Minnesota Avenue Metro Station

Kenilworth Terrace is a north-south, two-way, local street connecting Jay Street, to the north, to Foote Street. Sidewalks are located on either side of Kenilworth Terrace

#### **Existing Traffic Counts**

**Vehicular Traffic Counts** Existing AM and PM peak period vehicular traffic counts were conducted on Thursday, April 19, 2007, by Wells & Associates at the following intersections

- I Kenilworth Avenue/Foote Street.
- 2 Anacostia Avenue/Hayes Street.
- 3 Kenilworth Terrace/Hayes Street.
- 4 Kenilworth Avenue/Hayes Street.

The results are included in Appendix A and summarized on Figure 2-2.

Figure 2-2 indicates that Anacostia Avenue, through the site, carried 64 trips during the AM peak hour, and 52 trips during the PM peak hour. Hayes Street, just north of Kenilworth Terrace carried 293 trips during the AM peak hour, and 313 trips during the PM peak hour. The Kenilworth Avenue access road carried 1,073 trips during the AM peak hour and 473 trips during the PM peak hour, just north of Hayes Street.

**Pedestrian Traffic Counts.** Existing AM and PM peak period pedestrian traffic counts also were conducted on Thursday, April 19, 2007, by Wells & Associates at the intersections listed above. The results are included in Appendix B and summarized on Figure 2-3

Figure 2-3 indicates 167 pedestrians crossed Hayes Street at Anocastia Avenue during the AM peak hour and 52 pedestrians crossed during the PM peak hour. During the AM peak hour, 309 pedestrians were observed crossing Kenilworth Terrace at Hayes Street and 151 crossed Kenilworth Terrace during the PM peak hour.

Pedestrians crossing the overpass across Kenilworth Avenue were also observed. As shown on Figure 2-3 at the Kenilworth Avenue/Hayes Street intersection, 411 pedestrians used the bridge during the AM peak hour and 151 pedestrians used the bridge during the PM peak hour.

#### **Public Transportation Facilities and Services**

The subject site is served by numerous Metrobus lines and the Minnesota Avenue Metro station, as shown on Figure 2-4. The Minnesota Avenue Metro station is located within walking distance, approximately 1,500 feet, from the proposed project, across Kenilworth Avenue. The Metro station is connected to the residential community by an existing pedestrian bridge at Hayes Street.

Metrobus Line U6 is routed on Kenilworth Terrace and Hayes Street, adjacent to Parkside Bus stops for the U6 line are located on the north side of Hayes Street, just east of Anacostia Avenue and adjacent to the northwestern corner of the site Metrobus Lines U2, U4, U5, U6, U8, V7, V8, and X3 serve the Minnesota Avenue Metro station

The U2 line provides access south along Minnesota Avenue to the Anocastia Metro Station. The U4 line provides access east along Sheriff Road to Eastern Avenue. The U5 and U6 lines provides access to Lincoln Heights via Texas Avenue. The U8 line provides access to and from the Capitol Heights Metro Station. The V7 and V8 lines provide access between the Deanwood Station and the Bureau of Engraving and the Archives, with stops at the Minnesota Avenue Station. The X3 is a crosstrown line providing access between the Minnesota Avenue Station and McLean Gardens on Wisconsin Avenue.

#### **Curb Parking**

Parking is permitted on both sides of both sides of Anacostia Avenue and Hayes Street through and along the site frontage. On-street curb parking is planned to remain along both Anacostia Avenue and Hayes Street with the proposed Linda Joy & Kenneth Jay Pollin Memorial Community residential project. As noted above, each dwelling unit would also have off-street parking

#### **Bicycle Facilities**

Currently, there are no bicycle facilities in the immediate site vicinity. A multi-use trail is proposed along Foote Street and Kenilworth Terrace

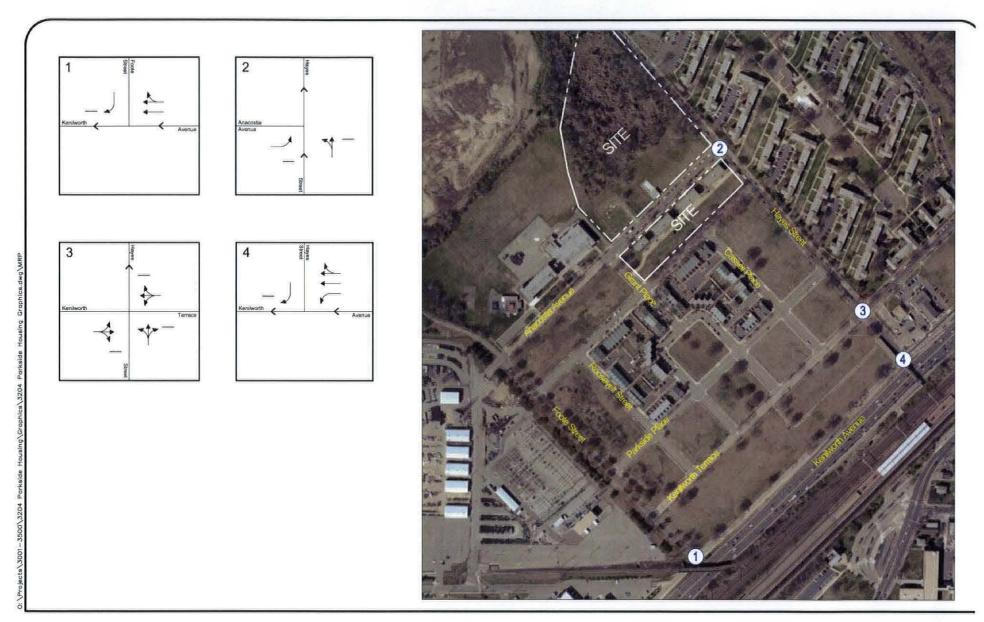


Figure 2—1 Intersection Lane Use and Traffic Control

← Represents One Travel Lane
Signalized Intersection

Stop Sign



Figure 2—2 Existing Vehicular Traffic Counts



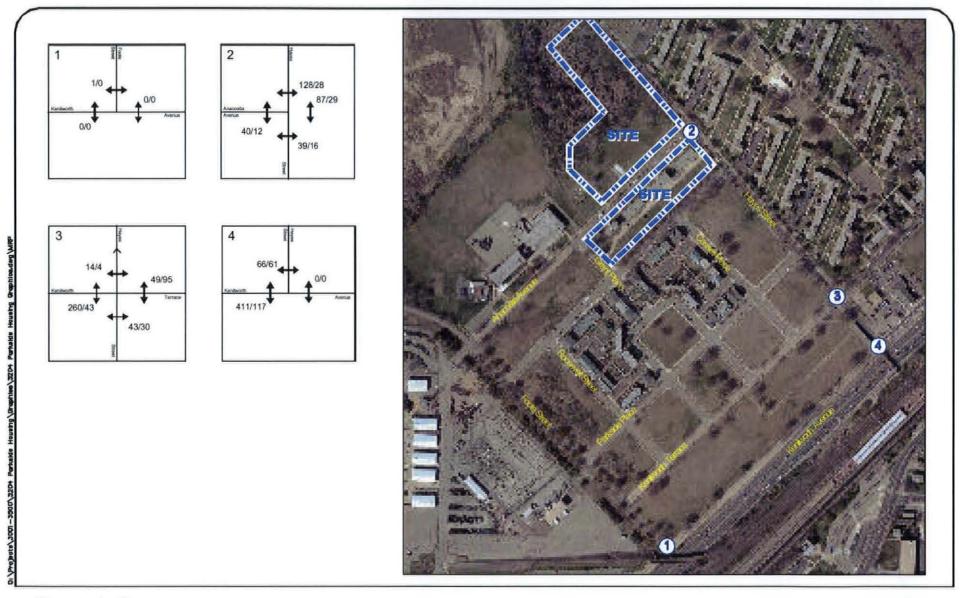


Figure 2—3 Existing Pedestrian Traffic Counts





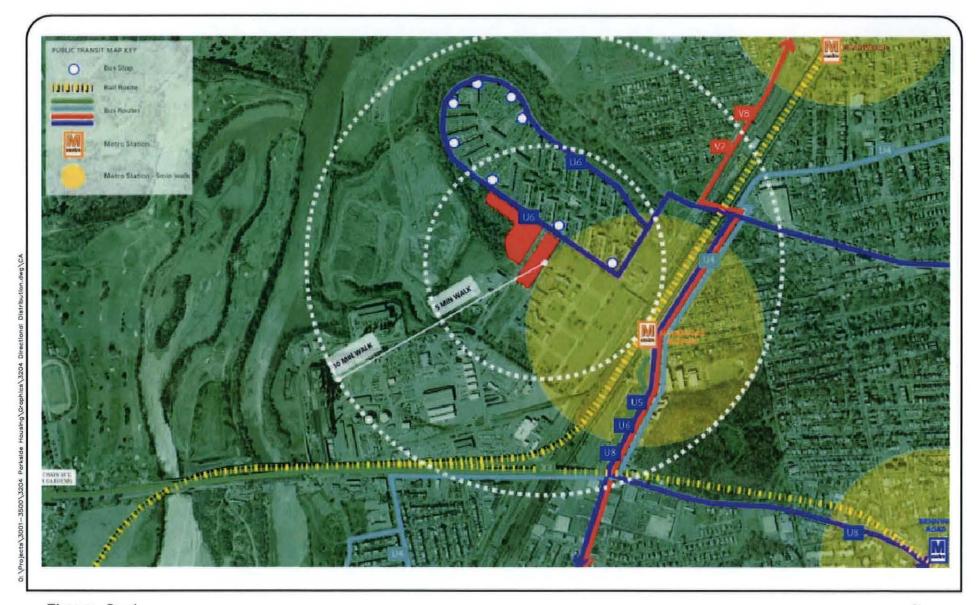


Figure 2—4 Existing Metro Bus & Rail Service



# Section 3 ANALYSIS

#### Overview

This section presents analyses of existing and future traffic conditions, without and with the proposed Linda Joy & Kenneth Jay Pollin Memorial Community residential project, and evaluations of the parking requirements

#### **Existing Levels of Service**

Existing peak hour levels of service were estimated at the four key intersections in the study area based on the existing lane usage and traffic control shown on Figure 2-1, existing vehicular traffic counts shown on Figure 2-2, existing pedestrian traffic counts shown on Figure 2-3, and the Synchro intersection capacity analysis model. The results are presented in Appendix C and summarized in Table 3-1

Table 3-1 indicates that the turning movements at the four, unsignalized, study intersections currently operate at level of service (LOS) "C" or better during both the AM and PM peak hours

#### **Background Traffic Growth**

A 0.5 percent per year background traffic growth rate was used to account for general regional traffic growth and other projects that may be built within the next three years in the District of Columbia outside of the study area. This rate was compounded for three years for project buildout (2010). This growth rate was applied to all movements at each study area intersection.

#### **Pipeline Projects**

Vehicular trips associated with the Parkside PUD, by Parkside Residential LLC and the Kenilworth Park Golf Course were included in this traffic study. Traffic data for the Parkside PUD was obtained from the <u>Parkside Mixed-Use Development Traffic Impact Study</u>, Gorove Slade, August 8, 2005

The Parkside PUD, by Parkside Residential LLC, would include 1,865 residential units, 586,520 S F of office, and 37,000 S F of retail. As shown in Table 3-2, the Parkside project is anticipated to generate 797 AM peak hour trips (522 in, 275 out) and 871 PM peak hour trips (307 in, 564 out). The nine-hole Kenilworth Park Golf Course would generate 20 AM peak hour trips (16 in, 4 out) and 25 PM peak hour trips (11 in, 14 out), based on ITE trips rates

Table 3-1 Linda Joy and Kenneth Jay Pollin Memorial Community Intersection Level of Service (1 2 3)

Int	ersection	Control	Approach	<u>Exis</u> AM	sting PM	<u>Backs</u> AM	round PM	<u>Total</u> AM	Future PM
ı	Kenilworth Avenue & Foote Street	Unsignalized	EBR	B [11 2]	A [8.9]	B [12 2]	A [10 i]	B [12 3]	B [102]
2	Anacostia Avenue & Hayes Street	Unsignalized	WBTL NBL	A [8 2] A [7 6]	A [9 0] A [7 9]	A [8 2] A [7 6]	A [9 2] A [7 9]	A [8 2] A [7 6]	A [9 3] A [8 0]
3	Kenilworth Terrace & Hayes Street	Unsignalized	NBLTR SBLTR WBLTR	A [8 7] A [8 4] A [8 9]	A [8 7] A [8 2] A [8.5]	NA NA NA	NA NA NA	NA NA NA	NA NA NA
	IMPROVEMENT  Parkside Mixed Use Development Proposes Hayes Street to be 2 way from Parkside Place to Kenilworth Terrace	Unsignalized	EBLTR WBLTR NBLTR SBLTR	NA NA NA	NA NA NA	A [9 1] A [10 0] A [9 8] B [12 3]	A [8 9] B [10 3] A [9 6] B [11 1]	A [9 1] B [10 1] B [10 0] B [12 5]	A [9 0] B [10 6] A [9 8] B [11 4]
4	Kenilworth Avenue & Hayes Street	Unsignalized	EBR	C [17 1]	B [114]	F [66 3]	C [152]	F [75 0]	C [15.5]
5	Anacostia Avenue & Site Access	Unsignalized	EBLR	NA	NA	NA	NA	A [8 7]	A [8 5]
6	Site Access & Hayes Street	Unsignalized	WBLT NBL	NA NA	NA NA	NA NA	NA NA	A [8 5] A [7 2]	A [0 3] B [10 3]
7	Site Access & Hayes Street	Unsignalized	NBLT	NA	NA	NA	NA	A [9 1]	A [0 1]

#### Notes.

Based on as Synchro version 6

<sup>&</sup>lt;sup>2</sup> Numbers in brackets, [], represent control delay in seconda per vehicle for unsignalized intersections.

<sup>&</sup>lt;sup>3</sup> Numbers in parenthesis, ( ), represent control delay in seconds per vehicle for signalized intersections.

Table 3-2 Linda Joy and Kenneth Jay Pollin Memorial Community Pipeline Project Trip Generation (1)

Background		Land Use			<u>AM</u>	l Peak Hou	<u>r</u>	PM Peak Hour				
Development	Land Use	Code	Size	Units	Ín	Out	Total	<b>t</b> n	Out	Total		
Parkside Mixed	Use Development, by	Parkside Resi	dential l	.LC								
	Residential				68	203	271	184	119	303		
	Office				442	61	503	80	392	47		
	Retail				<u>12</u>	<u>11</u>	<u>23</u>	43	<u>53</u>	<u>9</u> 6		
					522	275	797	307	564	87		
Kenilworth Parl	k Golf Course											
	Golf Course (2)	430	9	Holes	16	4	20	11	14	2!		
	Total Background	Developmen:	t		538	279	817	318	578	896		

Notes

<sup>(</sup>I) Trip Generation taken from Parkside Mixed Use Development, Traffic Impact Study: Prepared by Gorove Slade August 8 2005

<sup>(2)</sup> Rates Based on Trip Generation 7th Edition published by the Institute of Transportation Engineers

Thus, as shown in Table 3-2, the two pipeline projects will generate 817 AM peak hour trips (538 in, 279 out) and 896 PM peak hour trips (318 in, 578 out). The traffic assignments for the pipeline projects are shown on Figure 3-1.

#### **Background Traffic Forecasts**

Future peak hour traffic forecasts, without the Linda Joy & Kenneth Jay Pollin Memorial Community residential project, were estimated based on existing traffic counts, background traffic growth, and traffic assignments associated with the pipeline projects, as shown on Figure 3-2

#### **Background Future Levels of Service**

Future peak hour levels of service, without the Linda Joy & Kenneth Jay Pollin Memorial Community residential project, were estimated at the four key intersections in the study area for the year of project buildout (2010) 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 Synchro intersection capacity analysis model. The results are presented in Appendix D, and are summarized in Table 3-1.

Table 3-1 indicates that the turning movements at the Kenilworth Avenue/Foote Street, Anacostia Avenue/Hayes Street, and Kenilworth Terrace/Hayes Street intersections would operate at LOS "A" or "B" during the AM and PM peak hours

The eastbound right turn movement on Hayes Street at the Kenilworth Avenue access road would operate at LOS "F" during the AM peak hour and LOS "B" during the PM peak hour

#### Site Trip Generation Analysis

The number of trips that will be generated by the proposed Linda Joy & Kenneth Jay Pollin Memorial Community residential project were estimated based on (1) Institute of Transportation Engineers (ITE) trip generation rates, (2) the proximity of the project to the Minnesota Avenue Metro station, and (3) experience with other comparable projects in Washington, D C

The number of vehicle trips generated by the proposed project were reduced to account for the proximity to the Minnesota Avenue Metro station, based on U.S. Census 2000 Data and the Development-Related Ridership Survey II, Washington Metropolitan Area Transit Authority, December 1989. The proposed project is approximately 1,500 feet from Metro station, with access provided via an existing bridge over Kenilworth Avenue and in the future via a new pedestrian bridge. It is assumed that 40.52 percent of the residents will use either Metrorail, Metrobus or another form of transportation other than a single occupancy vehicle.

It is estimated that the proposed 125 dwelling units would generate 37 AM peak hour trips, and 50 PM peak hour trips, as shown in Table 3-3 The 42 existing residential apartments generate 13 AM peak hour trips and 22 PM peak hour trips, based on ITE rates. The proposed Linda Joy & Kenneth Jay Pollin Memorial Community, thus, would generate 24 net additional trips during the AM peak hour and 28 net additional trips during the PM peak hour, or one (1) vehicle every 2.5 minutes during the AM peak hour and one (1) vehicle every 2.15 minutes during the PM peak hour.

#### **Trip Distribution Analysis**

The distribution of peak hour trips that would be generated by the proposed Linda Joy & Kenneth Jay Pollin Memorial Community residential project was determined based on existing traffic counts and are consistent with other traffic studies conducted in the area. The estimated directions of approach are shown on Figure 3-3

As shown on Figure 3-3, 25 percent of the trips would approach the site from the north on Kenilworth Avenue, 50 percent would approach the site from the south on Kenilworth Avenue and 25 percent would approach the site from the west on Benning Road

#### 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 3-4

#### **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 3-5

Table 3-3 Linda Joy and Kenneth Jay Pollin Memorial Community Site-Trip Generation Analysis

			Land Use	A	M Peak Hour		P		
Land Use	Size	Units	Code	In	Out	Total	In	Out	Total
Existing Conditions									
Apartments	42	Dυ	220	5	19	24	27	14	4
xisting ITE Person-Trips (2)									
Apartments	42	DU	220	6	21	26	30	15	4
xisting ITE Vehicle Trips (3)									
Apartments	42	DU	220	3	10	13	15	7	2
Proposed ITE Vehicle Trips (1)									
Townhomes	83	טם	230	7	37	44	35	17	
Apartments	42	DŲ	220	5	19	24	27	14	4
TE Person Trips (2)									
Townhomes	83	DU	230	8	41	48	39	19	
Apartments	42	DΨ	220	6	21	26	30	15	4
TE Vehicle Trips (3)									
Townhomes	83	DU	230	4	20	24	19	9	2
Apartments	42	DΨ	220 _	3	10	13	15	7	2
	Propose	d Develop	ment Subtotal	7	30	37	34	16	
	Difference (Pro			4	20	24	19	9	

#### Notes

(1) Based on Trip Generation 7th Edition Institute of Transportation Engineers

(2) Assumptions

Non-auto mode split 0%
Average vehicle occupancy 1 10
(persons per vehicle)

(3) Assumptions

Non-auto mode split 40 52% Average vehicle occupancy 1 20

(persons per vehicle)

Non-auto mode splits were adapted from the U.S. Census 2000 Data Summary File 3 and the Development-Related Ridership Survey II
Washington Metropolitian Area Transit Authority. December 1989

#### **Total Future Levels of Service**

Future peak hour levels of service with Linda Joy & Kenneth Jay Pollin Memorial Community residential project 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 3-5, and the Synchro intersection capacity analysis model. The results are presented in Appendix E and summarized in Table 3-1

Table 3-1 indicates that the turning movements at the unsignalized, study intersections would continue to operate at levels of service consistent with background levels during both the AM and PM peak hours. The eastbound right turn movements from Hayes Street onto the Kenilworth Avenue access road would continue to operate at or near capacity during the AM peak hour, as identified under background conditions without the Linda Joy & Kenneth Jay Pollin Memorial Community. The trips associated with the proposed residential project would add 8.7 seconds of delay per vehicle to the eastbound right turn movement during the AM peak hour and only 0.3 seconds during the PM peak hour. Thus, the project will not have an adverse impact on the surrounding road network.

#### **Parking Requirements**

The parking requirement for residential units, both apartments and one-family dwellings, within the R-5-A zone is one (I) space for each dwelling unit, according to Chapter 21 of the District of Columbia Municipal Regulations The proposed Linda Joy & Kenneth Jay Pollin Memorial Community residential project, therefore, would require 125 parking spaces

The proposed residential project would be served by 125 off-street parking spaces, one space for each dwelling unit. Further, some of the dwelling units will have tandem off-street parking spaces and on-street parking is proposed to remain along Anacostia Avenue and Hayes Street and is proposed along the dwelling side of the 20-foot streets within the project. These on-street spaces will provide an opportunity for guests of the residents to park within the site and not spill onto other neighborhood streets. The proposed parking supply more than adequately accommodates the parking requirements for the proposed residential project.

Figure 3—1 Pipeline Project Traffic Forecasts





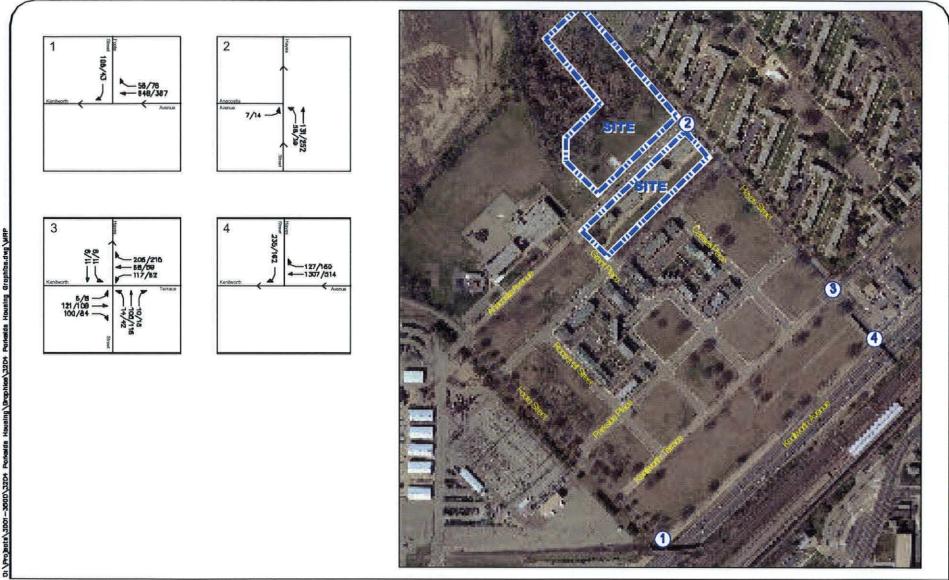


Figure 3—2 Background Future Peak Hour Traffic Forecasts





Figure 3—3 Site—Generated Traffic Directional Distribution







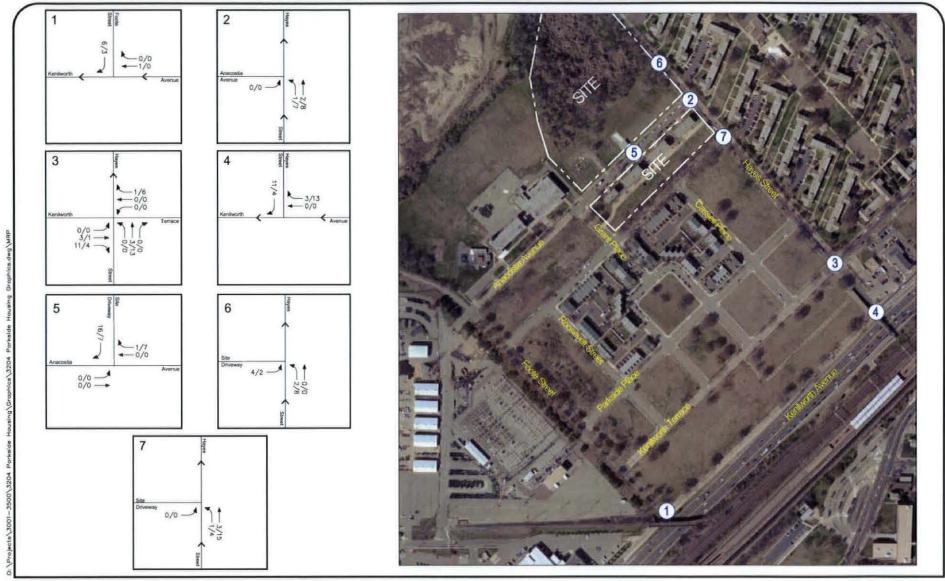


Figure 3—4 Site—Generated Traffic Assignments



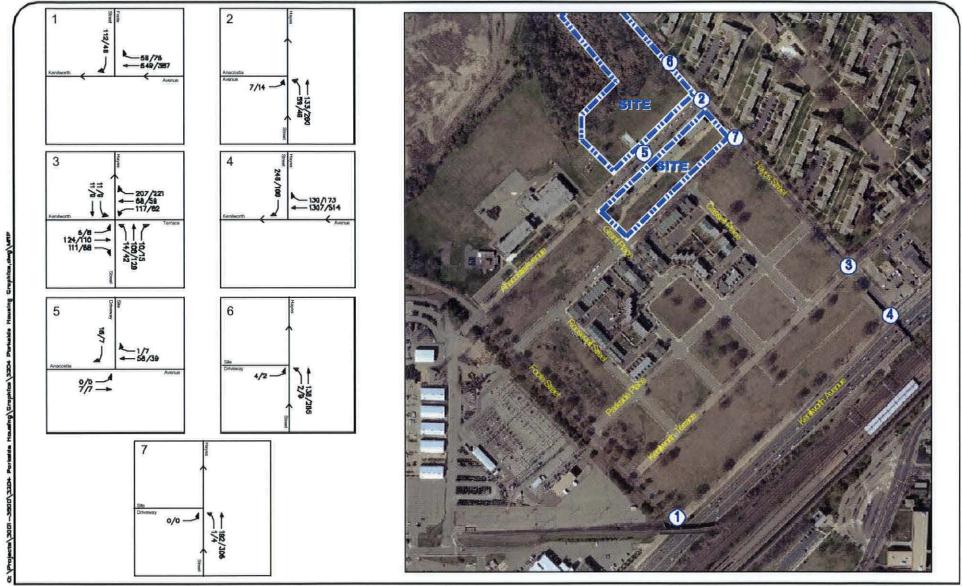


Figure 3-5 Total Future Peak Hour Traffic Forecasts



# Section 4 TRANSPORTATION MANAGEMENT PLAN

#### Overview

This section provides strategies for a transportation management plan (TMP) to be implemented by the Linda Joy and Kenneth Jay Pollin Memorial Community. A TMP is the establishment of measures to influence travel behavior by mode, frequency, time, route, or trip length in order to achieve a maximally efficient use of transportation facilities. Given the project's proximity to the Minnesota Metro Station, Metrobus service and a connected sidewalk system, the community lends itself to a TMP.

#### Transportation Management Plan

The Linda Joy and Kenneth Jay Pollin Memorial Community project inherently has opportunity for use of modes of transportation other than the private automobile. Metrobus Line U6, with direct access to the Minnesota Avenue Metro Station and Lincoln Heights neighborhood, has stops along Hayes Street adjacent to the project, and the Minnesota Avenue Metro Station, on the Orange Line, is located less than one-half of a mile. A pedestrian bridge provides convenient access for residents west of Kenilworth Avenue to the Metro station.

With the development of the Linda Joy and Kenneth Jay Pollin Memorial Community project, existing and new sidewalks will connect the residents to the sidewalk network in Parkside, thus providing access to the existing bus stops and Metro station

On-street parking will be provided within the Linda Joy and Kenneth Jay Pollin Memorial Community The applicant proposes that up to two (2) of these spaces be designated as car share spaces, subject to DDOT approval

The applicant also proposes to locate bicycle racks at convenient locations throughout the Linda Joy and Kenneth Jay Pollin Memorial Community for residents. This will encourage residents of the townhouses and apartments to utilize bicycles as a means of transportation, reducing demand for the private automobile.

With Metrobus stops adjacent to the site on Hayes Street, the Minnesota Metro station located less than one-half of a mile from the project, a connected sidewalk network, potential car sharing spaces, and bicycle racks, residents of the proposed Linda Joy and Kenneth Jay Pollin Memorial Community would have transportation options other than the private automobile

# Section 5 CONCLUSIONS

The conclusions of this traffic impact study are as follows

- Turning movements at the four intersections in the study area currently operate at level of service (LOS) "C" or better during both the AM and PM peak hours
- With the development of the Parkside PUD and without the Linda Joy & Kenneth Jay Pollin Memorial Community, the eastbound to southbound right turn movement at the Kenilworth Avenue access road intersection would operate at LOS "F" during the AM peak hour. Turning movements at the other study intersections would operate at LOS "A" or "B" during the AM and PM peak hours.
- The Linda Joy & Kenneth Jay Pollin Memorial Community residential project will add 24 new AM peak hour trips and 28 new PM peak hour trips, to the public street system upon project completion
- The net additional trips that would be generated by the proposed residential project will not have an adverse impact on traffic conditions in the study area. On average, motorists on Hayes Street at the Kenilworth Avenue access road would realize 8.7 seconds of additional delay.
- The 125 off-street parking spaces would satisfy the one parking space per unit requirement per code for the Linda Joy & Kenneth Jay Pollin Memorial Community residential project. Additionally, on-street parking spaces will be provided throughout the community.
- With the Metrobus stops adjacent to the site on Hayes Street, the Minnesota Metro station located less than one-half of a mile from the project, and a connected sidewalk network, along with the TMP measures proposed, the car sharing spaces and bicycle racks, residents of the proposed Linda Joy and Kenneth Jay Pollin Memorial Community would have transportation options other than the private automobile

Linda Joy & Kenneth Jay Pollin Memorial Community Transportation Impact Study Washington D C

# Appendix A

**Existing Vehicular Traffic Counts** 

## Wells & Associates, LLC

McLean, Virginia

#### **Existing Traffic Count**

5 45-6 45

## Wells & Associates, LLC

McLean, Virginia

#### **Existing Traffic Count**

PM Peak

5 45-6 45

PROJECT Parkside Housing

W & A JOB NO 

4/19/2007 DATE DAY Thursday WEATHER Clear

SOUTHBOUND ROAD NORTHBOUND ROAD WESTBOUND ROAD

Kentworth Terrace Kenilworth Тептасо Hayes Street

0 95 5 45-6.45

# Wells & Associates, LLC McLean, Virginia

**Existing Traffic Count** 

PROJECT W & A JOB INTERSEC LOCATION	NO TION	Parksid 3204 Hayes I Washin	St & Ke	nilworth	Ave			DATE DAY WEATH COUNT INPUTE	ED BY	4/19/20 Thursd Clear Jesi & agan	ay		NORTH WESTE	IBOUN				orth Ave orth Ave Street		<del>[· · · · · · · · · · · · · · · · · · · </del>	
Time	Ke	South		ie .		(	bound	Movem	Ķ	enilworl	Northbound enilworth Avenue			Eastbound Hayes Street				East	Total	PHF	Time
Penod	1 Right	2 Thru	3 Left	Total	4 Right	5 Thru	6 Left	Total	7 Right	8 Thru	9 Left	Total	10 Right	11 Thru	12 Left	Total	& South	& West			Period
AM 7.00.7.45	9	166	29	204	0	0	0	0		0	0	0	16	0	0	16	204	16	220		7 00 7 15
7 00-7 15 7 15-7 30	11	207	34	252	o	0	ŏ	ŏ	0	0	0	0	21	0	0	21	252	21	273		7 15-7 30
7 30-7 45	21	188	46	255	0	0	0	0				0		0	0	16		16	271		7 30 7 45
7 45-8:00	21	182	57	260	0	0	0	0						0	0	20		20 20	280 312		7 45-8 00 8 00-8 15
8 00-8 15	33	196	63	292	0	0	0	0						0		20 29		20	295		8 15-8 30
8 15-8 30	27 15	161 173	78 48	266 236	0	0	٥		ŏ					ŏ		18		18	254		8 30-8 45
8 30-8 45 8 45-9 00	14	145	49		ŏ	ŏ	Ö		٥							12		12	220		8 45-9 00
9 00-9 15	14	134	34	182	ő	Ö	o								Ó	13		13	195		9 00 9 15
9 15-9 30	8	128	28		ō	0	0			0	0	0		0	0	<b>^</b> 9		9	173		9 15-9 30
9 30-9 45	14	,90	12	116	0	0	0	0					7	0	0	7		7	123		9 30-9 45
9 45-10 00	10	′78	12	100	0	0	0	0	0	0	٥	0	8	٥	0	8	100	8	108		9 45-10 00
3 Hour Totals	197	1,848	490	2,535	- 0	0	0	0	ó	O	0	0	189		0	189	2 535	189	2,724		
1 Hour	- ',"	. 1,0-0	700	2,300			Ť	_	┷	i – i	<del>-</del>		1								
Totals	1			i						i	ľ										
7 00-8 00	62	743	166		ol	0	0	l o			0			0		73		73	1 044	1	7 00-8 00
7 15-8 15	86	773	200		0	0	0				0			0		77	1 059	77 85	1 136	0 91 0 93	7 15-8 15 7 30-8 30
7 30-8 30	102	727	244	1 073	0	0	0							0		85 87	1 073	87	1 158 1 141	0 93	7 45-8 45
7 45-8 45	96 89	712 675	246 238	1 054 1 002	0	0	0	0						Ö		79		79	1 081	0 87	8 00 9 00
8 00-9 00 8 15-9 15	70	613	209	892	ŏ	Ö	Ö	0					72	Ιŏ	ŏ	72	892	72	964	0 82	8 15-9 15
8 30-9 30	51	580	159	790	ŏ	ŏ	ŏ	Ĭŏ	,				52	ō	o	52	790	52	842	0 83	8 30-9 30
8 45-9 45	50	497	123		ō	ō	Ö	Õ					41	0	0	41	670	41	711	0.81	8 45 9 45
9 00-10 00	46	430	86		0	0	0	0	0	0	0	0	37	0	0	37	562	37	599	0 77	9 00 10 00
AM Peak 7 30 8 30	102	727	244	1,073		0	0	0		0	۰		85	_	0	85	1,073	85	1,158	0 93	AM Peak 7 30-8 30
PM	102	727	-	1,0.0				<del>-</del>	<del>                                     </del>	<del>                                     </del>	Ť	<del>                                     </del>									
4 00-4 15	17	102	7	126	0	0	0							0		13			139		4 00-4 15
4 15-4 30	18	79	4		0	0	0							0	0	4		4	105		4 15-4 30
4 30-4 45	23	79	5		0	0	0								, 0	5		5 7	112		4 30-4 45
4 45-5 00	25	73	5		0	0	0		0				7 10	0	0	7 10		1	110 120		4 45-5 00 5 00 5 15
5 00 5 15	32	75	3 7		0	0	0,0						9		, 0	9	137	9	146		5 15-5 30
5 15-5 30 5 30-5 45	26 25	104 72	9		ő	0	ō						10		, 0	10		4	116		5 30 5 45
5 45-6 00	35	88	6		ŏ	ő	ő	Ö					13	ō		13		1 .	142		5 45-6 00
6 00-6 15	30	72	8		Ó	0	0	0	0				11	0	0	11	110	11	121		6 00-6 15
6 15-6 30	27	94	э	124	0	0	0	0					23	0	0	23		23	147		6 15-6 30
6 30-6 45	26	80			0	0	0	0				0	11	0	0	11	110	11	121		6 30-6 45
6 45-7 00	31	87	6	124	0	0	0	0	0	0	°	\ °	10	٥	اه	10	124	10	134		6 45 7 00
3 Hour Totals	315	1 005	67	1,387	0	0	0	0	0	0	. 0	0	126	0	0	126	1 387	126	1 513		
1 Hour			<u>, , , , , , , , , , , , , , , , , , , </u>	,,,,,,,					$\Box$	1	l		i T								
Totals			_		ا ا	اہِ ا	_	١.			_	_ ا		_ ^	ا _ ا	20	437	29	466	0.84	4 00-5 00
4 00-5 00	83	333	21		0	0	0							0		29 26		29 26	447		4 15-5 15
4 15-5 15	98 106	306 331	17 20		0		0							0		31	457	31	488		4 30-5 30
4 30-5 30 4 45-5 45	108	324	24		ő	ŏ	ŏ							ō		36			492		4 45-5 45
5 00-6 00	118	339	25		Ö	Ö	Ö							O	0	42		42	524		5-00-6 00
5 15-6 15	116	336	30		ō	0	ō		į o			į o	43	0		43		43	525		5 15-6 15
5 30-6 30	117	326	26	469	o	0	0	[ 0	[ 0		l o			0		57			526		5 30-6 30
5 45-6 45	118	334	21	473		0	0							0		58			531		5 45-6 45
6 00-7 00	114	333	21	468	0	0	0	0	0	0	0	0	55	0	0	55	468	55	523	0 89	6 00-7 00
PM Peak 5 45-6 45	118	334	21	473	0	0	0	0				a	58	6	0	58	473	58	531	n né	PM Peak 5 45-6 45

# Wells & Associates, LLC McLean, Virginia

#### **Existing Traffic Count**

PROJECT W & A JOB NO Parkside Housing 3204 DATE DAY WEATHER 4/19/2007 Thursday

SOUTHBOUND ROAD NORTHBOUND ROAD WESTBOUND ROAD

Kenilworth Avenue Kenilworth Avenue

INTERSEC LOCATION		Kenilwo Washin		& Foot	e S! 			WEATH COUNT INPUTE Mover	ED BY	Clear Matt agan			WESTE EASTE				Foote S	Street			1
Time	Ke	South		LIÐ		Westbound 0				North: enilwort		ue		East Foote	ound Street		North	East	Tota!	PHF	Time
Period	1 Right	2 Thru	3 Left	Total	4 Right	5 Thru	6 Left	Total	7 Right	8 Thru	9 Left	Total	10 Right	11 Thru	12 Left	Total	& South	& West			Penod
<b>AM</b> 7 00-7 15	16	110	0	126	0	0	o	0	0	0	0	0	12	0	0	12	126	12	138		7 00 7 15
7 15-7 30	8	89	Ö		ŏ		ŏ	ō			Ιŏ	Ιŏ	7	ō			97	7	104		7 15-7 30
7 30-7 45	3	129	ō		0.		0	0		0	o	0	12	0	0	12	132	12	144		7 30 7 4
7 45-8 00	6	138	0		0	0	0	0	0	0	0	0	21	0	0	21	144	21	165		7 45-8 0
8 00-8 15	11	153	0	164	0	0	0	0	0	0	0	0	18	0	0		164	18	182		8 00-8 1
3 15-8 30	10	136	0	146	0	0	0	٠ 0	0	0	0	0	24	0		24	146		170		8 15-8 3
3 30-8 45	5	129	0	134	0	0	0	0	0	0	0	0	21	0		21	134	21	155		8 30-8 4
3 45-9 00	6	132	0	138	0	0	0	0	0	0	0	0	9	0		9	138	9	147		8 45-9 0
00-9 15	8	95	0		0	0	0	0	0	0	0	0	11	0		11	103	11	114		9 00-9 1
15-9 30	3	98	0		0	0	0	0	0	0	0	0	5	0		5	101	5			9 15-9 3
30-9 45	2	59	0	-	0	0	0	0	0	0	0	0	5	0	0			5			9 30-9 4
45-10 00	1	44	0	45	0	0	0	0	0	0	0	°	6	0	U	6	45	6	51		9 45-10
3 Hour Totals	79	1,312	0	1,391	0	0	0	0	0	0	0	Ö	151		0	151	1,391	151	1 542		
1 Hour	,,	1,312		1,001								Ť	,,,,				,,		1 1		
Totals			_		ا		اء			_		۔ ا		_	ا		400			0.02	7 00 0 0
700-800	33	466	0		0	0	0	0		0	0	0	52	0		52 58	499 537	52 58	551 595		7 00-8 ( 7 15-8 1
7 15-8 15	28	509	0		0	0	0	0			0		58	0							7 30-8 3
7 30-8 30	30	556	0		0	0	0	0		Ö	0		75 84	ő			588		672		7 45-8
45-8 45	32	556	0		0	ő	0	0		ŏ		0	72	ő			582		654		8 00-9
00-9 00	32 29	550 492	0		ŏ	ŏ	ő	ő	Ö	ŏ	ő		65	ŏ			521	65	586		8 15-9
3 15-9 15 3 30-9 30	22	454	0		اة	ŏ	ŏ	ő	ŏ	ő		ŏ	46	ŏ			476	46			8 30-9 3
8 45-9 45	19	384	ő			ŏ	ŏ	ŏ	ŏ	ŏ	ŏ	ة ا	30	ŏ		30	403	30	433		8 45-9 4
9 00-10 00	14	296	ŏ		I -I	Ō	Ō	Ō		ŏ	ō	Ŏ	27	0	0		310		337		9 00-10
AM Peak			_					,				_					FOO		670	0.00	AM Peal
7 45-8 45 PM	32	556	0	588	0	0	0	0	0	0	0	0	84		Ó	84	588	84	672	0 92	7 45-8 4
4 00-4 15	3	39	0	42	0	0	0	0	0	0	0	0	11	0		11	42		53		4 00-4 1
15-4 30	0	44	0	44	0	0	0	0	0	0	0	0	3	0		3	44	3			4 15-4 3
30-4 45	1	38	0		0	0	0	0		0	0	0	5	0		5	39	5			4 30-4 4
45 5 00	4	39	0		0	0	0	0		0	0	, 0	7	0		7	43	7	50		4 45 5 0
00 5 15	2	30	0		0	0	0	0	0	0	0	1 0	8	0		8	32				5 00 5 1
15-5 30	4	32	0		0	0	0	0	0	0	0	0	6	0		6	36	6			5 15-5 3
30-5 45	2	32	0		0	0	0	0	0	0	0	0	9	0		9	34 45	9	43 49		5 30-5 4 5 45-6 0
5 45-6 00	1	44	0		0	0	o	0	0	O		o	5	ő		5	38				6 00-6 1
00-6 15	6	32 37	0		ő	ő	ő	Ö		Ö		ő	9	ŏ		9	37	9	46		6 15-6 3
3 15-6 30 3 30-8 45	4	35	ō		ŏ	ő	ő	ŏ		Ö		ő	3	ō		3	39	3	42		6 30-6 4
45-7 00	4	35	õ		ŏ	ŏ	ŏ	ŏ		0	0	ō	4	0	o		39		43		6 45-7 0
3 Hour		- 10-		40.0									74			74	468	74	542		
Totals 1 Hour	31	437	0	468	0	0	0	0	0	0	0	0	74	<b>-</b> -"	"	· **	408	74	342		
Totals																					l
100-5 00	8	160	0			0		0					26					26			4 00-5 0
15-5 15	7	151	0	158		0	-	0	ı -	_	-		23				158				4 15-5
30-5 30	11	139	0				0	0		0											4 30-5
45-5 45	12	133	0		0	0	0	0						0							4 45-5
00-6 00	9	138	0		0		0	0		0			27	0			147	27			5 00-6 (
15-6 15	13	140	0		0		0	0		0			24	0					177 181		5 15-6 5 30-6 :
30-6 30	8	145	0		0			0		0	0		27	0	-		154 159				5 45-6
45-6 45 00-7 00	11 14	148 139	0		0	0		0		0			21 21	o			153		174		6 00-7 (
																				=	DM De-
M Peak 00 5 00	8	160	0	168	0	0	0	0	0	0	0	0	26	0	0	26	168	26	194	0 92	PM Pea 4 00 5

Linda Joy & Kenneth Jay Pollin Memorial Community Transportation Impact Study Washington D C

# Appendix B

**Existing Pedestrian Traffic Counts** 

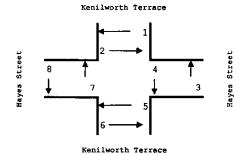
Project Name	Da_ 9 de Housins	
Project Number	^ 04	
Location	Wasnirgton DC	
Intersection	Hyma St & Amarostia	۸۱
Weather	fler	
Date	4 10,2007	
Surveyor	Fra	

	o	
Street	2	Street
	7 3	
Hayes	5	Hayes
	Anacostia Avenue	

Hourly	Pedestri	an Count
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			1	2	3	4	5	6	7	8					
		From	SE	NE	SW	SE	SW	NW	NW	NE	Total	1 & 2	3 & 4	5 & 6	7 & 8
Time 1	Period	To	NE	SE	SE	SW	NW	SW	NE	NW					
am peak															
7 00	8 00		17	33	0	4	0	2	3	12	71	50	4	2	15
7 15	8 15		23	37	1	22	7	18	1	66	175	60	23	25	67
7 30	8 30		33	53	2	26	7	24	7	93	245	86	28	31	100
7 45	8 45		34	57	3	32	7	27	9	102	271	91	35	34	111
8 00	9 00		29	58	6	33	8	32	13	115	294	87	39	40	128
8 15	9 15		18	46	5	20	1	16	14	60	180	64	25	17	74
8 30	9 30		10	28	4	17	1	16	9	38	123	38	21	17	47
8 45	9 45		8	18	3	12	1	15	7	26	90	26	15	16	33
9 00	10 00		7	16	0	7	0	8	3	8	49	23	7	8	11
PM PEAK															
16 00	17 00		36	18	7	1	0	2	17	9	90	54	8	2	26
16 15	17 15		34	20	11	1	0	3	19	9	97	54	12	3	28
16 30	17 30		38	22	10	3	1	3	20	11	108	60	13	4	31
16 45	17 45		42	15	7	4	1	5	29	12	115	57	11	6	41
17 <b>0</b> 0	18 00		33	14	5	5	5	9	34	8	113	47	10	14	42
17 15	18 15		25	12	1	10	5	9	34	6	102	37	11	14	40
17 30	18 30		15	12	0	12	4	10	34	6	93	27	12	14	40
17 45	18 45		11	18	0	16	4	В	26	2	85	29	16	12	28
18 00	19 00		10	16	0	15	0	5	24	4	74	26	15	5	28

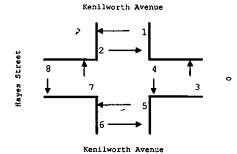
Project Name	Farkside Houling	
Project Number	3 04	
Location	Washington DC	
Intersection	Haves St & Kerliws th	Terrac
Weather	C1eir	
Date	# _9 20^^	
Surveyor	Majda	



Hourly	Pedestrian	Count
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			1	2	3	4	5	6	7	8					
		From	SE	NE	SW	SE	SW	NW	NW	NE	Total	1 & 2	3 & 4	5 & 6	7 & 8
Time	Period	To	NE	ŞE	SE	SW	NW	SW	NE	NW					
am peak															
7 00	8 00		14	30	7	38	89	38	6	11	233	44	45	127	17
7 15	8 15		11	33	5	35	155	37	3	11	290	44	40	192	14
7 30	8 30		13	43	5	39	205	36	1	15	357	56	44	241	16
7 45	8 45		10	39	4	39	222	38	1	13	366	49	43	260	14
8 00	9 00		9	32	2	27	186	35	0	12	303	41	29	221	12
8 15	9 15		7	26	2	27	122	50	2	15	251	33	29	172	17
8 30	9 30		4	22	0	27	75	46	2	9	185	26	27	121	11
8 45	9 45		9	28	0	27	33	45	2	7	151	37	27	78	9
9 00	10 00		11	27	0	25	18	35	3	5	124	38	25	53	8
PM PEAK															
16 00	17 00		36	27	9	13	15	14	4	3	121	63	22	29	7
16 15	17 15		41	36	9	18	13	18	6	6	147	77	27	31	12
16 30	17 30		48	35	7	13	12	18	6	8	147	83	20	30	14
16 45	17 45		38	38	7	11	21	16	4	8	143	76	18	37	12
17 00	18 00		33	33	7	5	21	17	4	8	128	66	12	38	12
17 15	18 15		41	40	17	0	23	21	2	5	149	81	17	44	7
17 30	18 30		41	34	18	8	27	24	1	2	155	75	26	51	3
17 45	18 45		50	45	22	8	19	24	1	3	172	95	30	43	4
18 00	19 00		57	58	25	10	15	21	1	3	190	115	35	36	4

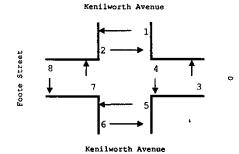
Project Name	lariside Housing
Project Number	3204
Location	washington DC
Intersection	Hayes St & Kenilwn to
Weather	rlear
Date	4 19 2007
Surveyor	Jusi & Alba



Hourly Pedestrian Count

			1	2	3	4	5	6	7	8					
		From	SE	NE	SW	SE	SW	иw	NW	NE	Total	1 & 2	3 & 4	5 & 6	7 & 8
	Period	To	NE	SE	SE	SW	NW	SW	NE	NW					
AM PEAR ;															
7 00	8 00		0	0	0	0	129	133	14	46	322	0	0	262	60
7 15	8 15		0	0	0	0	223	137	18	49	427	0	0	360	67
7 30	8 30		0	0	0	0	296	115	24	42	477	0	0	411	66
7 45	8 45		0	0	0	0	285	106	14	34	439	0	0	391	48
8 00	9 00		0	0	0	0	221	81	15	22	339	0	0	302	37
8 15	9 15		0	0	0	0	126	97	13	15	251	0	0	223	28
8 30	9 30		0	0	0	0	44	96	17	21	178	0	0	140	38
8 45	9 45		0	0	0	0	22	92	20	17	151	0	0	114	37
9 00	10 00		0	0	0	0	11	92	16	17	136	0	0	103	33
PM PEAK															
16 00	17 00		0	0	0	0	103	44	67	9	223	0	0	147	76
16 15	17 15		0	0	0	0	100	51	65	10	226	0	0	151	75
16 30	17 30	1	0	0	0	0	93	53	62	10	218	0	0	146	72
16 45	17 45		0	0	0	0	87	46	59	6	198	0	0	133	65
17 00	18 00		0	0	0	0	74	31	51	4	160	0	0	105	55
17 15	18 15		0	0	0	0	64	27	45	4	140	0	0	91	49
17 30	18 30		0	0	0	0	78	45	55	11	189	0	0	123	66
17 45	18 45		0	0	0	0	63	54	47	14	178	0	0	117	61
18 00	19 00		0	0	0	0	61	56	52	22	191	0	0	117	74

# Project Name rai wide Houring Project Number 3 04 Location Massington UC Intersection children We 6 Foote t Weather Cle : Date 4 19,\_00° Surveyor 4att



### Hourly Pedestrian Count

			1	2	3	4	5	6	7	8					
		From	SE	NE	SW	SE	sw	NW	NW	NE	Total	1 & 2	3 & 4	5 & 6	7 & 8
Time	Period	To	NE	SE	SE	SW	NW	SW	NE	NW					
am peak															
7 00	8 00		0	0	0	0	0	0	0	1	1	0	0	0	1
7 15	8 15		0	0	0	0	0	0	0	1	1	0	O	O	1
7 30	8 30		0	0	0	0	0	0	0	1	1	0	0	0	1
7 45	8 45		0	0	0	0	0	0	0	1	1	0	0	0	1
8 00	9 00		0	0	0	0	0	0	0	0	0	0	0	0	0
8 15	9 15		0	0	0	0	0	0	0	2	2	0	0	0	2
8 30	9 30		0	0	0	0	0	0	0	3	3	0	0	0	3
8 45	9 45		0	0	0	0	0	0	0	3	3	0	0	0	3
9 00	10 00		0	0	0	0	0	0	0	3	3	0	0	0	3
PM PEAK															
16 00	17 00	ı	0	0	0	0	0	0	0	0	0	0	0	0	0
16 15	17 15	ı	0	0	0	0	0	0	0	0	0	0	0	0	0
16 30	17 30	ı	0	0	0	0	0	0	1	0	1	0	0	0	1
16 45	17 45	ı	0	0	0	0	0	0	1	0	1	0	0	0	1
17 00	18 00	ı	0	0	0	0	0	0	1	0	1	0	0	0	1
17 15	18 15	ı	0	0	0	0	0	0	2	0	2	0	0	0	2
17 30	18 30	I	0	0	0	0	0	0	1	0	1	0	0	0	1
17 45	18 45		0	0	0	0	0	0	1	0	1	0	0	0	1
18 00	19 00	•	0	0	0	0	0	0	3	0	3	0	0	0	3

Linda Joy & Kenneth Jay Pollin Memorial Community Transportation Impact Study Washington, D C

# Appendix C

**Existing Levels of Service** 

	٠	•	1	†	1	1	
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations		7			<b>†</b> ‡		****
Sign Control	Stop			Free	Free		
Grade	0%			0%	0%		
Volume (veh/h)	0	84	0	0	556	32	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	0	91	0	0	604	35	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None						
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked							
vC, conflicting volume	622	320	639				
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	622	320	639				
tC, single (s)	6.8	6.9	4.1				
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2				
p0 queue free %	100	86	100				
cM capacity (veh/h)	419	676	941				
Direction, Lane#	EB 1	SB 1	SB 2	for the			
Volume Total	91	403	236				
Volume Left	0	0	0				
Volume Right	91	0	35				
cSH	676	1700	1700				
Volume to Capacity	0.14	0.24	0.14				
Queue Length 95th (ft)	12	0	0				
Control Delay (s)	11.2	0.0	0.0				
Lane LOS	В						
Approach Delay (s)	11.2	0.0					
Approach LOS	В						
Intersection Summary							
Average Delay			1.4		22010	Margara sassa	
Intersection Capacity Ut	tilization		28.3%	IC	CU Leve	of Sen	vice A
Analysis Period (min)			15				

	-	*	1	4-	1	1	
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations			***************************************	4	ኻ		
Sign Control	Stop			Stop	Stop		
Volume (vph)	O	0	67	113	7	0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	0	0	73	123	8	0	
Direction, Lane #	WB 1	NB 1					
Volume Total (vph)	196	8				The Miles of the Control	
Volume Left (vph)	73	8					
Volume Right (vph)	0	0					
Hadj (s)	0.11	0.23					
Departure Headway (s)	4.0	4.6					
Degree Utilization, x	0.22	0.01					
Capacity (veh/h)	887	749					
Control Delay (s)	8.2	7.6					
Approach Delay (s)	8.2	7.6					
Approach LOS	Α	Α					
Intersection Summary				Windows			
Delay			8.1				
HCM Level of Service			Α				
Intersection Capacity Ut	ilization		33.6%	10	CU Leve	of Servi	íce A
Analysis Period (min)			15				

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					4			4			4	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	0	0	4	90	10	6	96	47	18	54	197
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	4	98	11	7	104	51	20	59	214
Direction, Lane #	WB 1	NB 1	SB 1									
Volume Total (vph)	113	162	292									
Volume Left (vph)	4	7	20									
Volume Right (vph)	11	51	214									
Hadj (s)	-0.02	-0.15	-0.39									
Departure Headway (s)	4.8	4.3	4.0									
Degree Utilization, x	0.15	0.20	0.32									
Capacity (veh/h)	681	795	870									
Control Delay (s)	8.7	8.4	8.9									
Approach Delay (s)	8.7	8.4	8.9									
Approach LOS	Α	Α	Α									
Intersection Summary												
Delay	. y		8.7									
HCM Level of Service			Α									
Intersection Capacity Ut	ilization		42.3%	10	CU Leve	el of Ser	vice		Α			
Analysis Period (min)			15									

	1	•	1	†	ţ	✓
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		79			<b>†</b>	
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	85	0	0	971	102
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	92	0	0	1055	111
Pedestrians	66					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	6					
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1177	649	1232			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1177	649	1232			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	76	100			
cM capacity (veh/h)	174	390	530			
Direction, Lane #	EB 1	SB 1	SB 2			
Volume Total	92	704	463			
Volume Left	0	0	0			
Volume Right	92	0	111			
cSH	390	1700	1700			
Volume to Capacity	0.24	0.41	0.27			
Queue Length 95th (ft)	23	0	0			
Control Delay (s)	17.1	0.0	0.0			
Lane LOS	С					
Approach Delay (s)	17.1	0.0				
Approach LOS	С					
Intersection Summary						
Average Delay	200000000000000000000000000000000000000		1.3	STATE OF THE STATE		
Intersection Capacity Ut	tilization	- 10	42.0%	IC	CU Leve	el of Service A
Analysis Period (min)			15			

	•	*	4	1	Ţ	1	
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations		7			44		
Sign Control	Stop			Free	Free		
Grade	0%			0%	0%		
Volume (veh/h)	0	26	0	0	160	8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	0	28	0	.0	174	9	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None						
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked							
vC, conflicting volume	178	91	183				
vC1, stage 1 conf vol			11.4.4				
vC2, stage 2 conf vol							
vCu, unblocked vol	178	91	183				
tC, single (s)	6.8	6.9	4.1				
tC, 2 stage (s)	3-7-7-0						
tF (s)	3.5	3.3	2.2				
p0 queue free %	100	97	100				
cM capacity (veh/h)	794	948	1390				
Direction, Lane #	EB 1	SB 1	SB 2				
Volume Total	28	116	67				
Volume Left	0	0	0				
Volume Right	28	0	9				
cSH	948	1700	1700				
Volume to Capacity	0.03	0.07	0.04				
Queue Length 95th (ft)	2	0.07	0.04				
Control Delay (s)	8.9	0.0	0.0				
Lane LOS	Α.	0.0	0.0				
Approach Delay (s)	8.9	0.0					
Approach LOS	A	0.0					
Intersection Summary						1003000	
Average Delay			1.2				
Intersection Capacity Ut Analysis Period (min)	ilization		14.7%	IC	U Leve	of Service	e A
			15				

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Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations				্ব	ካ		
Sign Control	Stop			Stop	Stop		
Volume (vph)	0	0	38	237	14	0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	0	0	41	258	15	0	
Direction, Lane #	WB 1	NB 1					
Volume Total (vph)	299	15					
Volume Left (vph)	41	15					
Volume Right (vph)	0	0					
Hadj (s)	0.06	0.23					
Departure Headway (s)	4.0	4.8					
Degree Utilization, x	0.33	0.02					
Capacity (veh/h)	892	702					
Control Delay (s)	9.0	7.9					
Approach Delay (s)	9.0	7.9					
Approach LOS	Α	Α					
Intersection Summary						Jagoria da	
Delay			8.9				
HCM Level of Service			Α				
Intersection Capacity Ut	ilization		34.3%	IC	CU Leve	of Serv	ice A
Analysis Period (min)			15				

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			COA COMMON TO THE COMMON TO TH		4			4			4	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	0	0	15	101	15	8	72	26	16	23	204
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	16	110	16	9	78	28	17	25	222
Direction, Lane #	WB 1	NB 1	SB 1									
Volume Total (vph)	142	115	264									
Volume Left (vph)	16	9	17									
Volume Right (vph)	16	28	222									
Hadj (s)	-0.01	-0.10	-0.46									
Departure Headway (s)	4.7	4.4	3.9									
Degree Utilization, x	0.19	0.14	0.29									
Capacity (veh/h)	711	774	874									
Control Delay (s)	8.7	8.2	8.5									
Approach Delay (s)	8.7	8.2	8.5									
Approach LOS	Α	Α	Α									
Intersection Summary												
Delay			8.5									
<b>HCM</b> Level of Service			Α									
Intersection Capacity Ut	ilization		38.8%	10	CU Leve	l of Serv	ice		Α			
Analysis Period (min)			15									

	•	•	4	†	ļ	1	
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations		7			44		
Sign Control	Stop			Free	Free		
Grade	0%			0%	0%		
Volume (veh/h)	0	58	0	0	355	118	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	0	63	0	0	386	128	
Pedestrians	75						
Lane Width (ft)	12.0						
Walking Speed (ft/s)	4.0						
Percent Blockage	6						
Right turn flare (veh)							
Median type	None						
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked							
vC, conflicting volume	525	332	589				
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	525	332	589				
tC, single (s)	6.8	6.9	4.1				
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2				
p0 queue free %	100	90	100				
cM capacity (veh/h)	452	622	921				
Direction, Lane #	EB 1	SB1	SB 2				
Volume Total	63	257	257				
Volume Left	0	0	0				
Volume Right	63	0	128				
cSH	622	1700	1700				
Volume to Capacity	0.10	0.15	0.15				
Queue Length 95th (ft)	8	0	0				
Control Delay (s)	11.4	0.0	0.0				
Lane LOS	В						
Approach Delay (s)	11.4	0.0					
Approach LOS	В						
Intersection Summary					Marine Co.		
Average Delay			1.2				
Intersection Capacity U	tilization		25.1%	IC	CU Leve	of Service	e A
Analysis Period (min)			15				

Linda Joy & Kenneth Jay Pollin Memorial Community Transportation Impact Study Washington, D C

## Appendix D

**Background Future Levels of Service** 

	٨	•	4	†	ţ	1	
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations		7			<b>†</b> \$		
Sign Control	Stop			Free	Free		
Grade	0%			0%	0%		
Volume (veh/h)	0	106	0	0	648	56	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	0	115	0	0	704	61	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None						
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked							
vC, conflicting volume	735	383	765				
vC1, stage 1 conf vol							
vC2, stage 2 conf vol	W. W.	1 4 4					
vCu, unblocked vol	735	383	765				
tC, single (s)	6.8	6.9	4.1				
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2				
p0 queue free %	100	81	100				
cM capacity (veh/h)	355	615	844				
Direction, Lane #	EB 1	SB 1	SB 2				1111
Volume Total	115	470	296				
Volume Left	0	0	0				
Volume Right	115	0	61				
cSH	615	1700	1700				
Volume to Capacity	0.19	0.28	0.17				
Queue Length 95th (ft)	17	0	0				
Control Delay (s)	12.2	0.0	0.0				
Lane LOS	В						
Approach Delay (s)	12.2	0.0					
Approach LOS	В						
Intersection Summary							
Average Delay		88-1118880	1.6				
Intersection Capacity Ut	tilization		32.9%	IC	CU Leve	of Servic	
Analysis Period (min)			15				

	-	*	1	•	1	1	
Movement	EBT	EBR	WBL	WBT	NBL	NBR	Laborator Citiza Production August 1971 (1971)
Lane Configurations				4	ሻ		
Sign Control	Stop			Stop	Stop		
Volume (vph)	Ö	0	58	131	7	0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	0	0	63	142	8	0	
Direction, Lane #	WB 1	NB 1		TE SEVE			
Volume Total (vph)	205	8					
Volume Left (vph)	63	8					
Volume Right (vph)	0	0					
Hadj (s)	0.10	0.23					
Departure Headway (s)	4.0	4.6					
Degree Utilization, x	0.23	0.01					
Capacity (veh/h)	889	745					
Control Delay (s)	8.2	7.6					
Approach Delay (s)	8.2	7.6					
Approach LOS	Α	Α					
Intersection Summary							
Delay			8.2				
HCM Level of Service			Α				
Intersection Capacity Ut	ilization		34.0%	10	CU Leve	of Ser	vice A
Analysis Period (min)			15				

	٠	<b>→</b>	*	1	+	4	1	†	~	1	ļ	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	11	11	0	14	105	10	6	121	100	117	68	206
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	12	0	15	114	11	7	132	109	127	74	224
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	1000				e zabilitati			
Volume Total (vph)	24	140	247	425								
Volume Left (vph)	12	15	7	127								
Volume Right (vph)	0	11	109	224								
Hadj (s)	0.13	0.01	-0.23	-0.22								
Departure Headway (s)	5.9	5.5	4.7	4.5								
Degree Utilization, x	0.04	0.21	0.32	0.53								
Capacity (veh/h)	525	588	737	780								
Control Delay (s)	9.1	10.0	9.8	12.3								
Approach Delay (s)	9.1	10.0	9.8	12.3								
Approach LOS	Α	Α	Α	В								
Intersection Summary							1600					
Delay			11.1	Tion in								
HCM Level of Service			В									
Intersection Capacity Ut	ilization	i	60.0%	10	CU Leve	el of Ser	vice		В			
Analysis Period (min)			15									

	•	•	4	Ť	1	₹
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		7*			<del>የ</del> ጉ	
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	235	0	0	1307	127
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	255	0	0	1421	138
Pedestrians	66					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	6					
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1556	845	1625			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1556	845	1625			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	12	100			
cM capacity (veh/h)	98	289	375			
Direction, Lane #	EB 1	SB 1	SB 2			
Volume Total	255	947	612			
Volume Left	0	0	0			
Volume Right	255	0	138			
cSH	289	1700	1700			
Volume to Capacity	0.88	0.56	0.36			
Queue Length 95th (ft)	198	0	0			
Control Delay (s)	66.3	0.0	0.0			
Lane LOS	F					
Approach Delay (s)	66.3	0.0				
Approach LOS	F					
Intersection Summary						
Average Delay			9.3			
Intersection Capacity Ut	tilization		61.8%	IC	U Level	el of Service B
Analysis Period (min)			15			

	•	•	4	<b>†</b>	ļ	1	
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations		7			<b>†</b>		
Sign Control	Stop			Free	Free		
Grade	0%			0%	0%		
Volume (veh/h)	0	43	0	0	387	76	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	0	47	0	0	421	83	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None						
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked							
vC, conflicting volume	462	252	503				
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	462	252	503				
tC, single (s)	6.8	6.9	4.1				
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2				
p0 queue free %	100	94	100				
cM capacity (veh/h)	528	748	1057				
Direction, Lane #	EB 1	SB 1	SB 2				
Volume Total	47	280	223				
Volume Left	0	0	0				
Volume Right	47	0	83				
cSH	748	1700	1700				
Volume to Capacity	0.06	0.16	0.13				
Queue Length 95th (ft)	5	0	0				
Control Delay (s)	10.1	0.0	0.0				
Lane LOS	В						
Approach Delay (s)	10.1	0.0					
Approach LOS	В						
Intersection Summary		i la mar					
Average Delay			0.9				
Intersection Capacity Ut	tilization		23.1%	IC	CU Leve	el of Ser	vice A
Analysis Period (min)			15				

	<b>→</b>	•	1	•	1	1	
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations				4	*		
Sign Control	Stop			Stop	Stop		
Volume (vph)	0	0	39	252	14	0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	0	0	42	274	15	0	
Direction, Lane #	WB 1	NB 1				100	
Volume Total (vph)	316	15					
Volume Left (vph)	42	15					
Volume Right (vph)	0	0					
Hadj (s)	0.06	0.23					
Departure Headway (s)	4.0	4.8					
Degree Utilization, x	0.35	0.02					
Capacity (veh/h)	892	695					
Control Delay (s)	9.2	7.9					
Approach Delay (s)	9.2	7.9					
Approach LOS	Α	Α					
Intersection Summary							
Delay			9.1				
HCM Level of Service			Α				
Intersection Capacity Ut	tilization		35.2%	10	CU Leve	el of Ser	vice A
Analysis Period (min)			15				

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4	X(12-2300)==00))===000		43	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	9	9	0	42	116	15	8	109	84	62	59	215
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	10	0	46	126	16	9	118	91	67	64	234
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	20	188	218	365								
Volume Left (vph)	10	46	9	67								
Volume Right (vph)	0	16	91	234								
Hadj (s)	0.13	0.03	-0.21	-0.31								
Departure Headway (s)	5.7	5.3	4.7	4.5								
Degree Utilization, x	0.03	0.28	0.29	0.45								
Capacity (veh/h)	539	618	721	774								
Control Delay (s)	8.9	10.3	9.6	11.1								
Approach Delay (s)	8.9	10.3	9.6	11.1								
Approach LOS	Α	В	Α	В								
Intersection Summary												
Delay			10.4									
HCM Level of Service			В									
Intersection Capacity Ut	ilization	1	56.4%	10	CU Leve	el of Ser	vice		В			
Analysis Period (min)			15									

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Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations		7			ተጉ		
Sign Control	Stop			Free	Free		
Grade	0%			0%	0%		
Volume (veh/h)	0	162	0	0	514	160	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	0	176	0	0	559	174	
Pedestrians	75						
Lane Width (ft)	12.0						
Walking Speed (ft/s)	4.0						
Percent Blockage	6						
Right turn flare (veh)							
Median type	None						
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked							
vC, conflicting volume	721	441	808				
vC1, stage 1 conf vol			HILLIAND, THE				
vC2, stage 2 conf vol							
vCu, unblocked vol	721	441	808				
tC, single (s)	6.8	6.9	4.1				
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2				
p0 queue free %	100	67	100				
cM capacity (veh/h)	340	529	762				
Direction, Lane #	EB 1	SB 1	SB 2				
Volume Total	176	372	360				
Volume Left	0	0	0				
Volume Right	176	0	174				
cSH	529	1700	1700				
Volume to Capacity	0.33	0.22	0.21				
Queue Length 95th (ft)	36	0	0				
Control Delay (s)	15.2	0.0	0.0				
Lane LOS	C	9,0	<b>V.</b> IV				
Approach Delay (s)	15.2	0.0					
Approach LOS	C	0.0					
Intersection Summary							
Average Delay			2.9		THE SHAPE OF THE S		
Intersection Capacity Ut Analysis Period (min)	ilization		37.2% 15	IC	U Level	of Service	e A