Law Offices
HOLLAND & KNIGHT LLP

2099 Pennsylvania Avenue, N.W.
Suite 100
Washington, D.C. 20006-6801

202-955-3000
FAX 202-955-5564
www.hklaw.com

Atlanta
Boston
Bradenton
Chicago
Fort Lauderdale
Jacksonville
Lakeland
Los Angeles
Melbourne
Miami
New York
Northern Virginia
Orlando
Providence
St. Petersburg
San Antonio
San Francisco
Seattle
Tallahassee
Tampa
Washington, D.C.
West Palm Beach

International Offices:
Mexico City
Rio de Janeiro
São Paulo
Tel Aviv*
Tokyo
*Representative Office

CHRISTINE MOSELEY SHIKER
202-457-7167

Internet Address:
cmshiker@hklaw.com

July 10, 2001
VIA HAND DELIVERY
Mr. Kenneth Laden
Department of Public Works
2000 14th Street, N.W.
Washington, DC 20009

Re: REVISED Traffic and Parking Impact Assessment
Board of Zoning Adjustment Case No. 16744
500 New Jersey Avenue, N.W., Square 627

Dear Mr. Laden:

Enclosed please find a copy of the revised report by the Applicant's transportation consultant in the above-referenced Board of Zoning Adjustment case. In accordance with Section 3113.9 of the Zoning Regulations, a copy of the original report was provided to you at least twenty (20) days prior to the public hearing scheduled for July 24, 2001. The revisions reflected in the enclosed document are not substantive and the analysis has not changed from the original report. This document, however, includes the Capacity Analysis Worksheets for your review.

Thank you for your attention to this information. Should you have any questions, please do not hesitate to call me.

Sincerely,

Christine Shiker

Christine Moseley Shiker

Enclosure

cc: Board of Zoning Adjustment
Osborne George, O.R. George & Associates

BZA
Case No. 16744
Exhibit No. 45

Board of Zoning Adjustment
District of Columbia
CASE NO.16744
EXHIBIT NO.45

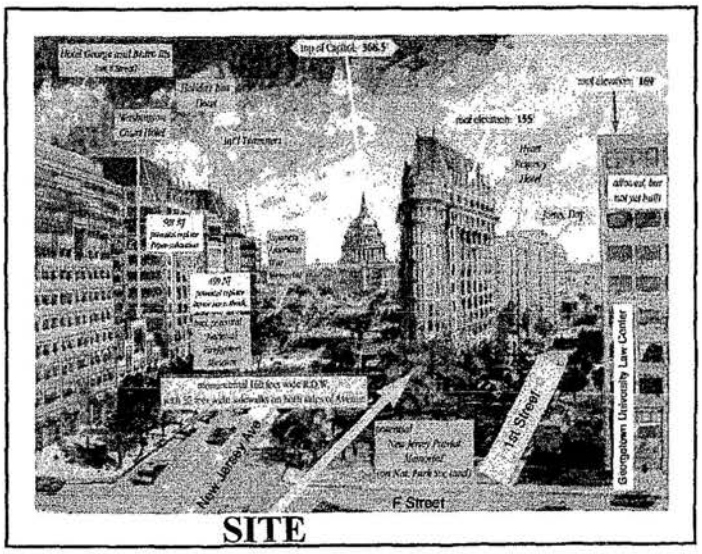
bcc: Jay Hellman (Via Facsimile; without enclosure)
Whayne S. Quin, Esq. (without enclosure)

WAS1 #992779 v1

Technical Memorandum:

TRAFFIC AND PARKING IMPACT ASSESSMENT, BOARD OF ZONING ADJUSTMENT VARIANCE APPLICATIONS FOR 500 NEW JERSEY AVENUE, N. W. WASHINGTON, D. C.

(Application No. 16744)



SITE

Prepared for:

THE HELLMAN COMPANY, INC.
1828 L Street, N.W.
Washington, D.C. 20036
Jay John Hellman, *Ph. D., President*

Correspondents:

HOLLAND & KNIGHT, LLP
2099 Pennsylvania Avenue, N.W., Suite 100
Washington, D.C. 20006
Christy M. Sheiker, *Esquire*
Whayne S. Quinn, *Esquire*

Prepared by:

O. R. GEORGE & ASSOCIATES, INC.
10210 Greenbelt Road, Suite 310
Greenbelt, MD 20706

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

10210 Greenbelt Road, Suite 310 • Greenbelt, MD 20706-2218
Tel: (301) 794-7700 • Fax: (301) 794-4400
E-mail: orgassoc@aol.com

TECHNICAL MEMORANDUM

DATE: July 10, 2001

TO: Jay John Hellman, PhD, President
~~THE HELLMAN COMPANY, INC.~~

FROM: Osborne R. George

RE: Board of Zoning Adjustment Application No. 16744
500 New Jersey Avenue, NW, Washington, DC

1.0 INTRODUCTION AND PURPOSE

In accordance with your request, we have reviewed and evaluated your company's proposal to develop an office building at the referenced location, based upon the details presented in the subject application. The purpose of the assessment was to determine whether the proposed development can be undertaken such that it *"will not tend to affect adversely the use of neighboring property..."* based upon the variance relief sought. This evaluation was made based upon traffic generation, site access and related issues and perspectives. Accordingly, this evaluation has considered the following specifics of the application:

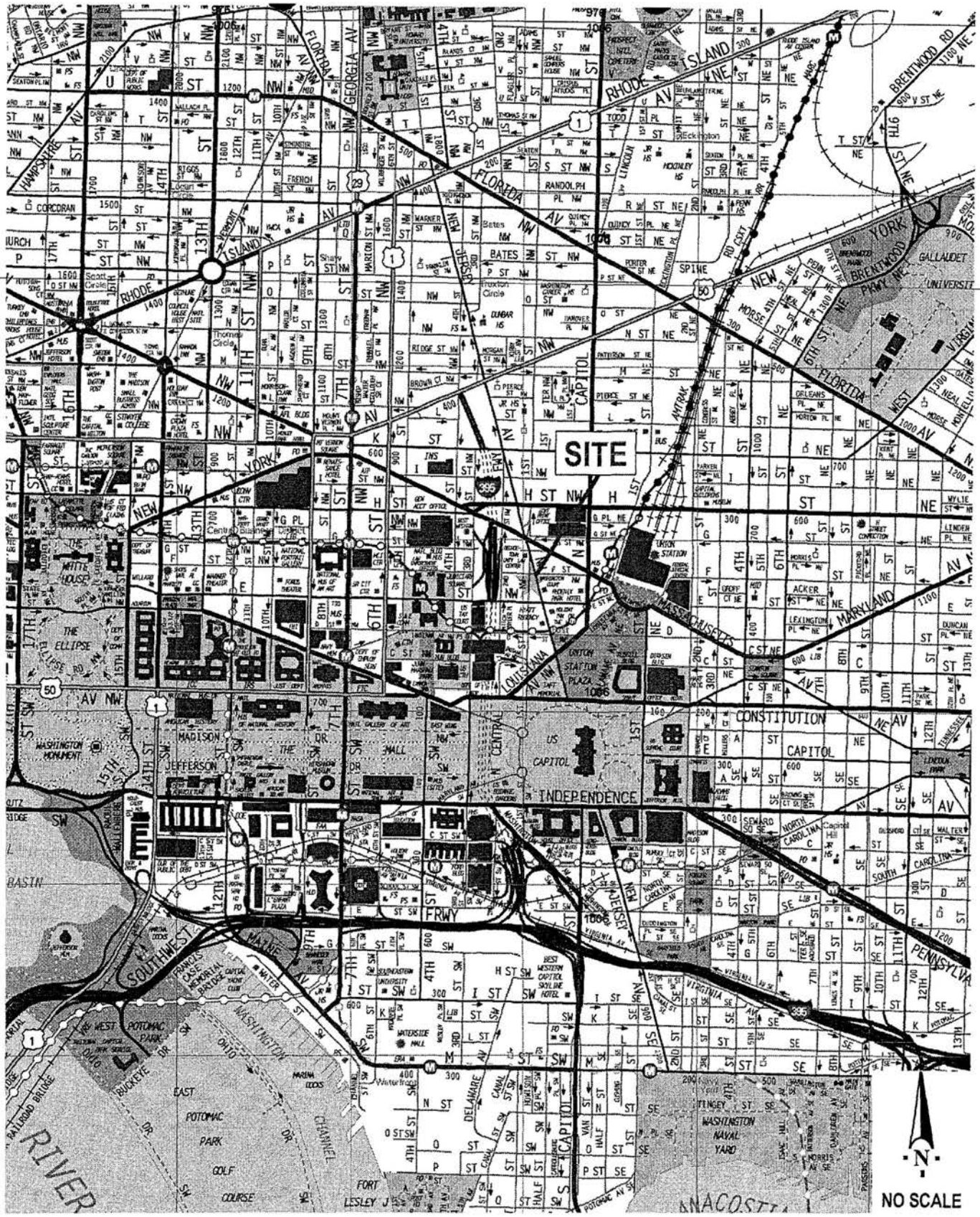
(a) ***A variance from the Floor Area Ratio (FAR) requirement*** - Under the Applicant's proposal, the planned development would yield a Gross Floor Area (GFA) of 92,350 Square Feet, versus 54,030 Square Feet under a matter-of-right development.

(b) ***A variance from the height requirement of the relevant section of the Zoning Regulations***: From the perspective of traffic generation and associated access issues, the variance in height incorporates the increased GFA for purposes of this study.

(c) ***A variance from the parking requirements under the relevant sections of the Zoning Regulations***. The application proposes a parking supply moderately in excess of the parking required; and the impact relates principally to the point of access, and the ramping arrangement proposed.

(d) ***A variance from the loading requirements***: The application submits that the site dimensions, and the restrictions presented due to the parking location and access, physically preclude provision of all of the loading facilities required by the Zoning Regulations on the building site. The Applicant proposes to place the larger loading berth within public space, adjacent to the property.

This evaluation has concluded that the relief sought will not tend to adversely impact the use of neighboring property. The remainder of this memorandum will address the above aspects of the application, specifically from the perspective of the traffic access needs and related issues; and will establish the basis for the conclusion stated. For ease of reference, and to facilitate the presentation, which follows, the site location is shown in Exhibit 1.



O. R. GEORGE & ASSOCIATES, INC.

Traffic Engineers - Transportation Planners

EXHIBIT 1: Site Location Map - 500 New Jersey Avenue
BZA Application # 16744

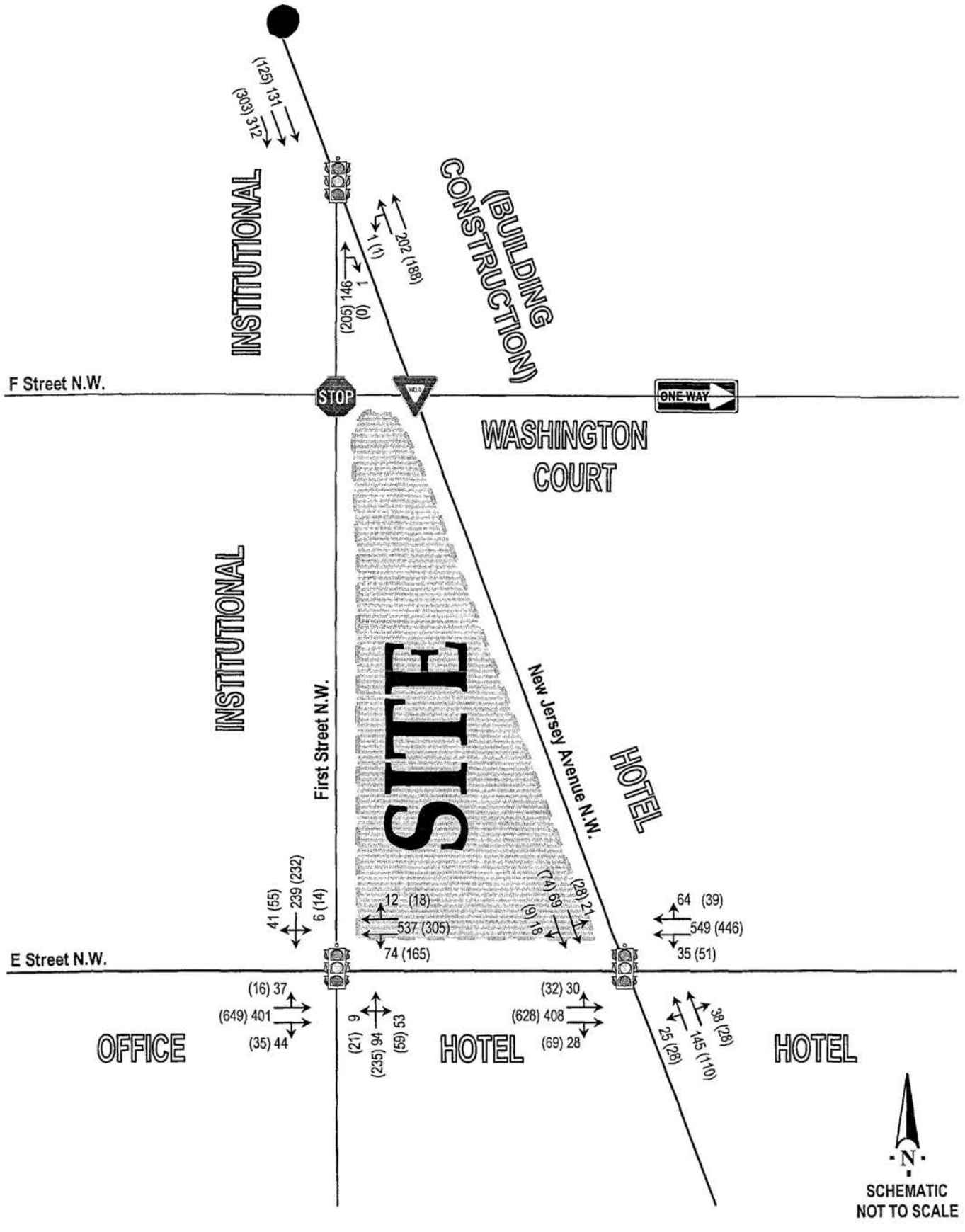
2.0 LOCAL SETTING AND BACKGROUND TRAFFIC/PARKING CONDITIONS

In keeping with the guidelines followed by the City's Department of Public Works in assessing the impacts of development proposals, this section discusses traffic and parking conditions within the local area of the subject property. As noted in the application statement, the site is bounded by New Jersey Avenue on the east, E Street on the south, First Street on the west and F Street (and a U.S. park reservation) on the north. The property is situated within easy access to interstate highway facilities (such as I-395 and the center leg expressway), as well as to principal arterial streets, such as Massachusetts Avenue, North Capitol Street, and the section of New Jersey Avenue to the north. In the immediate vicinity of the subject property, the following facilities are provided.

- ***E Street, NW:*** A sixty-foot wide east-west principal arterial serving two (2) lanes of vehicles travel in each direction, with parking along both sides of the roadway. Adjacent to the subject property, parking is prohibited in view of bus stop locations.
- ***New Jersey Avenue, NW***: A sixty-foot wide collector street serving two (2) travel lanes in each direction, with metered parking along both sides of the roadway.
- ***First Street, NW***: A thirty-eight foot wide north-south collector street serving a single lane of travel in each direction, with metered parking along both sides of the roadway.

All roadway classifications noted above are based on the *"Functional Classification Map"* published by the D.C. Department of Public Works (DPW).

In order to determine current operating conditions within the local area, morning and afternoon peak hour turning movement counts were undertaken between the hours 8:00 – 9:00 AM and 4:30 – 5:30 PM. Exhibit 2 shows the roadway lane configuration and the existing turning movement volumes. The traffic volumes obtained were analyzed by utilizing the Highway Capacity Manual procedures, in accordance with DPW requirements. As shown in Table 1 on page 5, the adjacent intersections currently operate at quite acceptable levels of service.



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

EXHIBIT 2: Study Area Network and Peak Hour Traffic Volumes - 500 New Jersey Avenue
BZA Application # 16744

TABLE 1

CAPACITY ANALYSES RESULTS
SUMMARY - EXISTING TRAFFIC CONDITIONS
(500 NEW JERSEY AVENUE, NW, Washington, D.C.)

INTERSECTION	AM PEAK HOUR		PM PEAK HOUR	
	LOS	AVG. DELAY (In Seconds)	LOS	AVG. DELAY
• New Jersey Ave. @ E St. NW	B	16.7	B	14.8
• New Jersey Ave. @ First St. NW	B	12.7	B	12.8
• First Street @ E Street, NW	B	14.8	C	21.2

Source: O. R. George & Associates.

The Highway Capacity Manual defines Level of Service as a "*qualitative measure describing operational conditions within a traffic stream or at an intersection, and their perception by motorists and/or passengers.*" The definition generally describes these conditions in terms of factors such as speed and travel time, freedom to maneuver, traffic interruptions, as well as comfort, convenience and safety. Current engineering practice defines six (6) Levels of Service, which are given letter designations A through F. Level of Service A represents best operations, and Level of Service "F" represents worst conditions. Level of Service D/E is generally considered to be the minimum acceptable standard for planning and design purposes by the District of Columbia. The capacity analysis worksheets for the analysis results presented in Table 1 above are included as the attachment to this report.

3.0 IMPACT ASSESSMENT – THE TECHNICAL APPROACH

3.1 Technical Approach

Current engineering practice assesses the potential traffic impacts of a development based primarily on the trip-making characteristics of the site during weekday morning and afternoon peak hours. This is also the procedure required (or adhered to) by the District of Columbia Government review process. The process also relies on traditional factors, most notably standardized vehicle trip generation rates.

The Applicant's statement is replete with background material, which points to the fact that the proposed building will not be the typical office building, and would not generate peak vehicular activity coinciding with the normal peak activity patterns of the adjacent and regional vehicular transportation system. In essence, the applicant submits that the building will target tenants, workers and visitors who would take advantage of the modern advances of technology, particularly as they apply to telecommunications and office support operations. Furthermore, the Applicant foresees these elements and the location of the site relative to the City's major transportation, business and political centers, as key factors contributing to a concept of *"virtual adjacency"* as it relates to trip generation and, more specifically, the vehicular impacts of the proposed development.

The Applicant's concept of "virtual adjacency" appears quite reasonable in the context of this particular site, and the proposed development. The approach is also consistent with current research and practice within the transportation engineering profession, as well as with national and local public policy objectives, which emphasize Transportation Management Programs (TMP). However, the analysis, which follows, uses as its basis, the guidelines and procedures of the District of Columbia Government review agencies in addressing the transportation related requirements and potential impacts of the development proposed by the Applicant.

3.2 Trip Generation

As noted earlier, the application proposes the development of a 92,350 GFA office. Of this development density, approximately 38,000 GFA (i.e., 41.0 %) represents the variance requested. The City's guidelines require the use of trip generation rates recommended by the Institute of Transportation Engineers (ITE). These rates are directly applicable to stand-alone suburban sites.

Development-Related Ridership Surveys conducted by the Washington Metropolitan Area Transit Authority show transit usage in the range of 60 - 75%, for urban employment uses situated in proximity to Metrorail stations. The subject site is located two (2) blocks from the Union Station, and three (3) blocks from the Judiciary Square Station. In addition, the site is in close proximity to a number of hotels, government offices, and several institutional and organization headquarters. This provides opportunities for a significant level of transit and non-motorized trips. A fifty percent (50.0%) non-auto mode split was considered conservative, and appropriate for the current evaluation. Table 2 following presents the application of the ITE rates as well as the rates reflecting transportation mode split factors considering the opportunities afforded by the location of the subject site.

TABLE 2

PEAK HOUR TRIP GENERATION – VARIANCE APPLICATION FOR 500 NEW JERSEY AVENUE NW, WASHINGTON D.C.

	AM Peak Hour			PM Peak Hour		
Trip Rates	**In**	**OUT**	**Total**	**IN**	**Out**	**Total**
1) Based Upon ITE Trips/1,000 GFA Office	1.37	0.19	1.56	0.25	1.24	1.49
2) Adjusted Trips/1,000 GFA (Office)	0.68	0.10	0.78	0.13	0.62	0.75
Trip Generation						
3) Trips per 54,030 GFA (Matter-of Right Use)	37	5	42	7	34	41
4) Trips per 38,320 (As Variance Request)	26	4	30	5	24	29
TOTAL	**63**	**9**	**72**	**12**	**58**	**70**

Source: O. R. George & Associates

The data presented in Table 2 shows that the development will generate a total of 70 trips accessing the building during the morning and afternoon peak hours. No adjustment was made for the trip-making characteristics described by the Applicant, based on the concept of *"virtual adjacency"* discussed earlier. However, given the relevance of such a concept within the context of current engineering practice and public policy regarding transportation impacts and mitigation strategies, this study submits that actual vehicle trips to the site could fall well below fifty (50) trips during the morning and afternoon peak hours. It is noted that a trip generation of fifty (50) trips is the typical threshold for the requirement of a "full" traffic study. Further, the trip generation of fifty (50) to seventy (70) trips represents approximately 5.0% percent of the total vehicle trips utilizing the adjacent intersection at New Jersey Avenue and E Street, NW. This level of trip generation is well within the typical daily fluctuation of traffic at such an urban intersection.

4.0 ASSESSMENT OF VARIANCE REQUIREMENTS

This section addresses the traffic and parking impacts and/or implications of the variance requests.

4.1 Variance From the Floor Area Requirements

The subject application requests an FAR variance of 4.61. Based upon the 8,312 Square Foot site area, this computes to a Gross Floor Area of 38,320 Square Feet. It is projected that this would generate approximately thirty (30) vehicle trips during the weekday peak hours. Considering the usage characteristics indicated by the Applicant, the actual vehicle trips would likely be less than twenty (20). *This study submits that this level of trip generation is not significant, and would not adversely impact traffic flow within the subject area, or access to neighboring properties*

4.2 Variance From Height Requirements

The variance in height requested is intended to generate additional building square footage, based upon the physical constraints of the site. Traffic implications of the additional square footage are incorporated in the FAR variance dealt with in Section 4.1 above.

4.3 Variance From the Parking Requirements

The application proposes to provide sixty (60) off-street parking spaces, which is just in excess of the requirement per the Zoning Regulations. The variance requested is principally to allow most of these spaces within vault space. Access to the parking is proposed to be off the E Street frontage of the building, which is the only practical location, considering the ramping arrangements that are necessary. (This is per the assessments made by WEIHE Design Group, PLLC, the project architects). The only traffic-related issue pertains to the point of access, and the following factors are noted.

a) The proposed access is close to an existing curb cut, which had provided access to a gas station for a long period of time.

b) Most of the traffic entering the site would approach the area from the east via E Street, the south via New Jersey Avenue, and from the north via New Jersey Avenue, making a right-turn movement into the site.

It is noted that left-turn movements into the parking garage (from eastbound E Street) could present minor operational constraints. This study notes that this left-turn parking access arrangement is not unlike that provided for major parking garages in many locations in downtown Washington D.C. This includes a 700+ space parking garage situated along the south side of E Street, one block to the east of the subject site. Based upon the empirical evidence provided by such locations and considering the small size of the parking garage, proposed by the Applicant (60 spaces), it is concluded that the parking proposal would not adversely impact neighboring properties, or area roadway users in general.

4.4 Variance From the Off-Street Loading Requirements

Based upon the size of the proposed building and the zoning district, in which the site is located, the following off-street loading facilities are required:

a) A 30-ft. deep loading berth;

b) At least one (1) 100-square foot loading platform; and

c) At least one (1) 20-ft. deep service delivery space.

The Applicant proposes to provide one ten-foot by twenty-foot service delivery area. Loading provisions for a building typically do not have a material impact on vehicle trip generation. Given the usage characteristics noted by the application, the population density of the building is likely to be comparatively low, and should result in relatively infrequent deliveries. The site plan proposes that such loading activities would be undertaken off First Street, which serves the least traffic volumes, among the three adjacent streets. In order to facilitate this arrangement, removal of up to two (2) metered parking spaces may be necessary, combined with the reconfiguration of existing curb cuts for loading access. The Applicant would be required to obtain all approvals from the responsible agencies of the District of Columbia Government.

4.5 Other General Considerations

Transportation planning and land use strategies are closely linked elements of the urban planning process. In this connection, it is noted that the immediate vicinity of the site has not been the subject of significant development activity. An office building is under development in the northeast quadrant of the New Jersey Avenue/F Street intersection to the north. It is also noted that the parking lot site immediately to the west (off First Street) has been the subject of development proposals, which called for a 0.5 million square foot office building. It is understood from the Applicant, that this property, which had previously been owned by the Tobishima Bank of Japan, has now been transferred to the Georgetown University Law Center. Current plans call for the site to be developed as a combination sports, fitness and academic facility totaling 200,000 GSF, to be associated with the Law Center. Telephone conversations with the project architects and with staff of the Georgetown University Law Center have confirmed such plans for this adjacent site.

5.0 CONCLUSION

Based upon the foregoing data, analysis and discussion, this assessment concludes from the perspective of vehicular access provisions, and traffic operations within the area of the site, that the Applicant's proposal should also not adversely impact the use of neighboring properties. Furthermore, the proposal should not adversely impact users of the adjacent roadway network in general. Regarding the importance of satisfying the requirements of Section 3103.2: *"Variances, of DCMR 11 (Zoning)"*, this study also concludes that no substantial detriment to the public good will result from implementation of the applicant's proposal from the transportation perspective.

We trust that the above meets your requirement. Please let us know if we can be of further assistance in this matter. *Thank you!*

ORG/hw

Attachments: As noted.

WAS1 #992690 v1

ATTACHMENT

Capacity Analysis Worksheets
- Existing Traffic Situation

HCS: Signalized Intersections Release 3.2

Inter: E @ New Jersey
Analyst: ORGA-MFO
Date: 07/03/2001
E/W St: E Street

City/St: Washington, DC
Proj #: Hellman/500 NJ Avenue
Period: AM Peak Existing
N/S St: New Jersey Avenue

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	0	0	2	0	0	2	0	0	2	0
LGConfig		LTR			LTR			LTR			LTR	
Volume	30	408	28	35	549	64	25	145	38	21	69	18
Lane Width		11.5			11.5			10.0			10.0	
RTOR Vol			3			6			4			2

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	P				NB Left	P		
Thru	P				Thru	P		
Right	P				Right	P		
Peds					Peds			
WB Left	P				SB Left	P		
Thru	P				Thru	P		
Right	P				Right	P		
Peds					Peds			
NB Right					EB Right			
SB Right					WB Right			
Green	35.0					35.0		
Yellow	4.0					4.0		
All Red	1.0					1.0		

Cycle Length: 80.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	1338	3059	0.38	0.438	16.0	B	16.0	B
Westbound								
LTR	1280	2925	0.56	0.438	18.5	B	18.5	B
Northbound								
LTR	1234	2820	0.18	0.438	14.1	B	14.1	B
Southbound								
LTR	1277	2919	0.09	0.438	13.3	B	13.3	B

Intersection Delay = 16.7 (sec/veh) Intersection LOS = B

Received Jul-10-01 10:44am From-301 794 4400 To-HOLLAND & KNIGHT LLP Page 003

HCS: Signalized Intersections Release 3.2

Inter: E @ New Jersey
Analyst: ORGA-MFO
Date: 07/03/2001
E/W St: E Street

City/St: Washington, DC
Proj #: Hellman/500 NJ Avenue
Period: PM Peak Existing
N/S St: New Jersey Avenue

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	0	0	2	0	0	2	0	0	2	0
LGConfig		LTR			LTR			LTR			LTR	
Volume	32	628	69	51	446	39	28	110	28	28	74	9
Lane Width		11.5			11.5			10.0			10.0	
RTOR Vol			7			4			3			1

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	P				NB Left	P		
Thru	P				Thru	P		
Right	P				Right	P		
Peds					Peds			
WB Left	P				SB Left	P		
Thru	P				Thru	P		
Right	P				Right	P		
Peds					Peds			
NB Right					EB Right			
SB Right					WB Right			
Green	40.0					30.0		
Yellow	4.0					4.0		
All Red	1.0					1.0		

Cycle Length: 80.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	1570	3139	0.51	0.500	14.6	B	14.6	B
Westbound								
LTR	1322	2644	0.45	0.500	14.0	B	14.0	B
Northbound								
LTR	1040	2772	0.17	0.375	17.1	B	17.1	B
Southbound								
LTR	1082	2886	0.11	0.375	16.5	B	16.5	B

Intersection Delay = 14.8 (sec/veh) Intersection LOS = B

-2-

HCS: Signalized Intersections Release 3.2

Inter: First @ NJ
Analyst: ORGA-MFO
Date: 07/03/2001
E/W St: New Jersey Avenue

City/St: Washington, DC
Proj #: Hellman/500 New Jersey Avenue
Period: AM Peak Existing
N/S St: First Street

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	1	0	2	0	0	0	0	0	0	0
LGConfig		T	R		LT			LR				
Volume		131	312	1	202		146		1			
Lane Width		10.0	10.0		10.0			12.0				
RTOR Vol			312						0			

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left					NB Left	P		
Thru		P			Thru			
Right		P			Right	P		
Peds					Peds			
WB Left		P			SB Left			
Thru		P			Thru			
Right					Right			
Peds					Peds			
NB Right					EB Right			
SB Right					WB Right			
Green		50.0				20.0		
Yellow		4.0				4.0		
All Red		1.0				1.0		

Cycle Length: 80.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
T	2106	3369	0.07	0.625	5.9	A	5.9	A
R	942	1507	0.00	0.625	5.6	A		
Westbound								
LT	2010	3216	0.11	0.625	6.2	A	6.2	A
Northbound								
LR	407	1627	0.40	0.250	27.9	C	27.9	C
Southbound								

Intersection Delay = 12.7 (sec/veh) Intersection LOS = B

Received Jul-10-01 10:44am From-301 794 4400 To-HOLLAND & KNIGHT LLP Page 005

HCS: Signalized Intersections Release 3.2

Inter: First @ NJ
Analyst: ORGA-MFO
Date: 07/03/2001
E/W St: New Jersey Avenue

City/St: Washington, DC
Proj #: Hellman/500 New Jersey Avenue
Period: PM Peak Existing
N/S St: First Street

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	1	0	2	0	0	0	0	0	0	0
LGConfig		T	R		LT			LR				
Volume		125	303	1	188		205		0			
Lane Width		10.0	10.0		10.0			12.0				
RTOR Vol			0						0			

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination		1	2	3	4			5	6	7	8
EB	Left					NB	Left	P			
	Thru	P					Thru				
	Right	P					Right	P			
	Peds						Peds				
WB	Left	P				SB	Left				
	Thru	P					Thru				
	Right						Right				
	Peds						Peds				
NB	Right					EB	Right				
SB	Right					WB	Right				
Green		50.0						20.0			
Yellow		4.0						4.0			
All Red		1.0						1.0			

Cycle Length: 80.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
T	2106	3369	0.07	0.625	5.9	A	7.6	A
R	942	1507	0.36	0.625	8.3	A		
Westbound								
LT	2010	3216	0.10	0.625	6.1	A	6.1	A
Northbound								
LR	453	1810	0.50	0.250	29.7	C	29.7	C
Southbound								

Intersection Delay = 12.8 (sec/veh) Intersection LOS = B

Received Jul-10-01 10:44am From-301 794 4400 To-HOLLAND & KNIGHT LLP Page 006

HCS: Signalized Intersections Release 3.2

Inter: E @ First
Analyst: ORGA-MFO
Date: 07/03/2001
E/W St: E Street

City/St: Washington, DC
Proj #: Hellman/500 NJ Avenue
Period: AM Peak Existing
N/S St: First Street

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	0	0	2	0	0	1	0	0	2	0
LGConfig		LTR			LTR			LTR			LTR	
Volume	37	401	44	74	537	12	9	94	53	6	239	41
Lane Width		14.0			14.0			12.0			10.0	
RTOR Vol			4			1			5			4

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	P				NB Left	P		
Thru	P				Thru	P		
Right	P				Right	P		
Peds					Peds			
WB Left	P				SB Left	P		
Thru	P				Thru	P		
Right	P				Right	P		
Peds					Peds			
NB Right					EB Right			
SB Right					WB Right			
Green	40.0					30.0		
Yellow	4.0					4.0		
All Red	1.0					1.0		

Cycle Length: 80.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	1519	3037	0.35	0.500	12.8	B	12.8	B
Westbound								
LTR	1573	3145	0.44	0.500	13.7	B	13.7	B
Northbound								
LTR	506	1348	0.33	0.375	19.6	B	19.6	B
Southbound								
LTR	1099	2931	0.29	0.375	18.2	B	18.2	B

Intersection Delay = 14.8 (sec/veh) Intersection LOS = B

Received Jul-10-01 10:44am From-301 794 4400 To-HOLLAND & KNIGHT LLP Page 007

HCS: Signalized Intersections Release 3.2

Inter: E @ First
Analyst: ORGA-MFO
Date: 07/03/2001
E/W St: E Street

City/St: Washington, DC
Proj #: Hellman/500 NJ Avenue
Period: PM Peak Existing
N/S St: First Street

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	0	0	2	0	0	1	0	0	1	0
LGConfig		LTR			DefL	TR			LTR			LTR
Volume	16	649	35	165	305	18	21	235	59	14	232	55
Lane Width		14.0		12.0	14.0			12.0			10.0	
RTOR Vol			4			2			6			6

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination		1	2	3	4			5	6	7	8
EB	Left	P				NB	Left	P			
	Thru	P					Thru	P			
	Right	P					Right	P			
	Peds						Peds				
WB	Left	P				SB	Left	P			
	Thru	P					Thru	P			
	Right	P					Right	P			
	Peds						Peds				
NB	Right					EB	Right				
SB	Right					WB	Right				
Green		35.0						35.0			
Yellow		4.0						4.0			
All Red		1.0						1.0			

Cycle Length: 80.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	1460	3336	0.53	0.438	17.8	B	17.8	B
Westbound								
DefL	229	523	0.80	0.438	44.0	D		
TR	880	2011	0.41	0.438	16.8	B	26.0	C
Northbound								
LTR	597	1365	0.57	0.438	20.9	C	20.9	C
Southbound								
LTR	565	1291	0.58	0.438	21.3	C	21.3	C

Intersection Delay = 21.2 (sec/veh) Intersection LOS = C

Received Jul-10-01 10:44am From-301 794 4400 To-HOLLAND & KNIGHT LLP Page 008