

BEFORE THE
ZONING COMMISSION
FOR THE DISTRICT OF COLUMBIA

SUPPLEMENTAL PREHEARING
SUBMISSION

CHILDREN'S NATIONAL MEDICAL CENTER
Zoning Commission Case No. 88-34A

August 18, 2006

ZONING COMMISSION
District of Columbia

CASE NO. 88-34A
EXHIBIT NO. 29
ZONING COMMISSION
District of Columbia
CASE NO. 88-34A
EXHIBIT NO. 29A1

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¹ Page 2 of Zoning Commission Order No. 14 was inadvertently omitted from the Applicant's PUD Statement.

I.
INTRODUCTION

This Supplemental Prehearing Statement and attached documents (the “Prehearing Submission”) are submitted by the Children's National Medical Center ("Children's Hospital") in support of its application to the Zoning Commission for the District of Columbia (the “Zoning Commission”) for a modification to a Planned Unit Development (“PUD”) originally approved in Zoning Commission Case No. 70-3, and modified by Zoning Commission Case No. 88-34M. The subject property is known as Assessment and Taxation Lot 801, being a portion of Record Lot 2 in Square 3129 (the "Site").

In accordance with Section 3013.8 of the Zoning Regulations, the Supplemental Prehearing Submission modifies the Applicant's PUD Statement and supporting documents, including architectural plans and drawings, filed with the Zoning Commission on May 23, 2006 (the “PUD Submission”) as well as its Prehearing Submission filed on June 29, 2006 (the "Prehearing Submission"). This Supplemental Prehearing Submission, along with the PUD Submission and the Prehearing Submission, meets the filing requirements for an application for a PUD and related Zoning Map Amendment under Chapter 24 and Chapter 30 of the District of Columbia Zoning Regulations.

II.
ADDITIONAL INFORMATION REGARDING THE DEVELOPMENT OF
CHILDREN'S HOSPITAL

The Prehearing Submission sets forth in detail a summary of the approvals for the development of Children's Hospital over the past thirty years, including information regarding the issuance of building permits and certificates of occupancy. This section provides additional information as to the development timeline and process by which the facilities were constructed at Children's Hospital.

At the time the Zoning Commission considered the modification of Phase 2 of the development of Children's Hospital in 1989, it acknowledged that some development of the hospital would occur without return to the Zoning Commission. During that hearing, Children's Hospital presented general information as to the development of the East Addition – the most significant construction since 1989 – and the implications of constructing this addition were discussed during the hearing. The Commission recognized that additional facilities could be constructed up to a total FAR of 2.45 without the requirement for Children's Hospital to return to the Zoning Commission for review and approval. A highlighted copy of the relevant portion of the transcript from the 1989 Zoning Commission hearing is attached as Exhibit A.

As can be seen in the chart below, Children's Hospital did not exceed the permitted FAR of 2.45 until 2003.

Order	Project Name	Building Permit Issue Date	Project Completion Date	GFA	Total FAR
Order No. 14	Hospital Garage Levels V-1, V-2, V-3 and Patient Floors C&D	<i>No information available</i>	1/28/77	224,048 sf	0.70
Order No. 14	Hospital Floors A&B are occupied	<i>No information available</i>	2/24/77	263,020 sf	1.53
Order No. 619	West Medical Office Building	11/19/90	<i>Date not available</i>	105,000 sf	1.86
Order No. 619	Relocate existing helipad to roof	<i>No information available</i>	10/19/90	9,360 sf	1.89
Order No. 619	Construction of four level below grade east parking garage and first floor below grade shell space	12/11/90	<i>Date not available</i>	273,074 sf (all below grade)	1.89
	Miscellaneous In-Fill: ENT Pulmonary Cafeteria	<i>No information available</i>	1991	3,600 sf 1,800 sf 2,700 sf	1.92
	Construction of 5 th and 6 th Floor Research Shell Space (New shell and fit-out)	4/24/92	12/11/94	77,947 sf	2.16
	MRI Fit-Up, 2 nd Floor East Addition (New shell and fit-out)	11/29/93	1995	13,100 sf	2.20
	Emergency Room Renovation & Expansion and Waiting Room	6/12/98	2/2001	26,150 sf	2.29
	Cardiac Cath Lab (New shell and fit-out)	1/11/02	<i>Date not available</i>	9,786 sf	2.32
	Perioperative (New shell and fit-out)	12/26/02	12/2005	13,234 sf	2.36
	6 th Floor Research Core & Shell	7/1/05	8/31/06	49,242 sf	2.5

	East Addition (4 Story) Steel, Core and Shell	12/19/03	2006	2 nd 11,880 sf 3 rd 48,000 sf 3.5 48,000 sf 4 th 48,000 sf	3.0
	East Addition Fit-Out	3/9/06	<i>In progress</i>	<i>See above</i>	3.0
	Chiller Plant	5/4/06	<i>In progress</i>	4,500 sf	3.0
Case No. 88- 34A	East Addition -- 5 th and 6 th Floors	<i>n/a</i>	<i>n/a</i>	5 th 48,000 sf 6 th 48,000 sf	3.3
Case No. 88- 34A	North Post-Up Floors 2, 3, 4 and 5 ²	<i>n/a</i>	<i>n/a</i>	72,000 sf (18,000 sf per floor)	3.55

At such time as Children's Hospital learned that it had exceeded the permitted FAR and that Zoning Commission review and approval was required, it met with the Office of Planning and submitted this application to the Zoning Commission. It is clear from the record that Children's Hospital applied for and processed applications for building permits and that the District issued building permits. Children's Hospital constructed its facilities on the basis of these permits. Based on the information above, it appears that Children's Hospital has only been out of compliance with the Phase 2 approval for three years or less. With the Commission's approval of this PUD modification, Children's Hospital will then be permitted to continue construction of these much-needed facilities and enhance the special care that it gives to infants and children.

² Issues regarding the exact configuration of the 5th Floor of the Post-Up are still being resolved. Accordingly, the 5th Floor is not shown on the architectural plans and drawings. If it is constructed, the 5th Floor would not include more than 18,000 square feet and would not modify the proposed footprint of the Post-Up.

III.
TRAFFIC IMPACTS OF PROJECT

Children's Hospital submitted a Preliminary Traffic Impact Analysis Report with its Prehearing Submission. The final, completed Traffic Impact Study is attached hereto as Exhibit B and has been submitted to the District Department of Transportation. This traffic study finds that the traffic generated as a result of the proposed facilities in addition to all facilities constructed to-date can be accommodated, with the provisions set forth therein, without any appreciable adverse impacts to the local transportation network. The traffic study sets forth an extensive Transportation Management Plan which will serve to further enhance traffic operations within the local area.

IV.
REVISED GROSS FLOOR AREA

A revised page 7 of the Architectural Plans and Drawings is attached hereto as Exhibit C. In reviewing its numbers, Children's Hospital identified below-grade space calculated within the gross floor area, resulting in a higher FAR. The revised gross floor area totals are as follows:

Existing On-Site	959,367 sf	3.0 FAR
Proposed Addition	168,000 sf	0.55 FAR
PROPOSED TOTAL	1,127,367 sf	3.55 FAR

V.
FLEXIBILITY FROM ROOF STRUCTURE REQUIREMENTS

The existing facilities at Children's Hospital include multiple roof structure with walls of unequal heights. With the construction of the East Addition and the Post-Up, the project will have additional roof structures with walls of unequal height. Accordingly, Children's Hospital requests flexibility from the provisions of Section 411. A detailed roof plan will be submitted to the Zoning Commission prior to the Zoning Commission hearing.

VI.
SUMMARY OF BENEFITS AND AMENITIES

The PUD Submission set forth the public benefits and project amenities associated with this PUD. This Supplemental Prehearing Submission updates that list. As noted before, due to the special character of Children's Hospital, the amenities provided by this project and the addition are somewhat different from those normally provided within a PUD. However, the amenities and benefits, including the following, are significant and can not be understated:

- Enhanced ability to continue to deliver high quality, pediatric health services to the community. Children's Hospital is recognized as one of the top ten pediatric hospitals in the United States. (11 DCMR §2403.9(g))
- Provide critically needed pediatric services, including a designated pediatric trauma center. (11 DCMR §2403.9(i))
- Provide health services to the local population and to District residents of all income levels. Children's Hospital provides over \$50 million in

uncompensated care to children in this region annually. (11 DCMR §2403.9(i))

- Provide children's primary care and specialty care in outpatient centers, throughout the District, Maryland and Virginia. Over 400,000 children are seen in these centers each year. (11 DCMR § 2403.9(g))
- Provide school nurses for the District's public school system. (11 DCMR § 2403.9(g))
- Provide emergency medical communications services for all District hospitals by operating the Hospital Mutual Aid Radio System (HMARS) in the event of a mass casualty situation affecting the District. (11 DCMR § 2403.9(i))
- Provide a decontamination facility equipped to decontaminate children and their parents in the event of a chemical or terrorist attack in the District. Detailed information regarding the decontamination facility is attached as Exhibit D. (11 DCMR § 2403.9(i))
- Provide an emergency quarantine facility in all or a portion of the fourth floor of the East Addition in the event of an outbreak of a disease, such as SARS, or Avian flu, or in the event of terrorist activity. (11 DCMR § 2403.9(i))
- Significant community involvement in the District, especially focused on immunization of District children. Details regarding these initiatives are set forth in the summary attached as Exhibit E.
- \$35,000 contribution for signalization improvements to the intersection of Michigan Avenue, NW with Hospital Drive South (11 DCMR § 2403.9(c))

- Continuation and institution of extensive transportation demand management programs as set forth in the Transportation Management Plan included with Exhibit B (11 DCMR § 2403.9(c))
- High quality, superior design reflective of the architectural character of the building previously approved and providing a visually strong identity for a building in a prominent location (11 DCMR §2403.9(a))
- First Source Employment Agreement and a Memorandum of Understanding for Local, Small and Disadvantaged Business Enterprises ("MOU for LSDBE") (11 DCMR §2403.9(e))

VII.

CONCLUSION

This Supplemental Prehearing Submission along with the PUD Submission and Prehearing Submission meet the filing requirements for an application to modify a PUD under Chapter 24 of the District of Columbia Zoning Regulations and under Chapter 30 of the of the District of Columbia Zoning Regulations. For the foregoing reasons, Children's Hospital respectfully requests that the Zoning Commission approve the modification to the approved PUD.

Respectfully submitted,

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A

TRANSCRIPT OF PROCEEDINGS

DISTRICT OF COLUMBIA ZONING COMMISSION

PUBLIC HEARING

* * *

Application from Children's Medical)
Hospital National Medical Center,)
requesting a modification to a)
previously approved Planned Unit)
Development for Lot 2 (formerly)
known as part of Lot 1) in Square)
3129 Located at 110 Irving Street,)
N.W.)

Case Number:

88-34M/70-3

1989 APR 24 AM 10:25
ZONING SECRETARIAT
DISTRICT OF COLUMBIA

Washington, D.C.
April 13, 1989

Pages 1 thru 84

MILLER REPORTING COMPANY, INC.

507 C Street, N.E.
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546-6666

COMMISSIONER BENNETT: You are more focused on catastrophic care?_

MR. TOBIN: With tertiary care. I am with the shock trauma and with the more complicated cases. Don't misunderstand me, we have a very large comprehensive care clinic, primary care delivery system. We have outreach clinics in the community.

But we also are a shock trauma unit. It is a regional shock trauma unit that works with mends(?) all over, in Maryland and Virginia, and it's--in fact, we have been known probably as the leader in that unit.

The Surgeon General says we are the number one pediatric trauma unit in the country, but we don't brag too much. The Surgeon General said that.

COMMISSIONER SMITH: That took care of my question. I have had children from the old 13th Street there for years. So we believe it can be done.

CHAIRMAN WILLIAMS: See if I can understand a couple of the zoning aspects of this case.

By proceeding with the expansion that was contemplated in 1970, as modified potentially by this application, would there be any room within the parameters of the

original zoning order, even if modified for further expansion without further visitation to the Zoning Commission?

MR. FARMER: I would believe so. Mr. Bottner has a different view on that. That's why we're here today.

CHAIRMAN WILLIAMS: Suppose this is approved and Mr. Bottner or his successor, you know, if that ever should happen, would this use up in effect all the envelopes?

MR. FARMER: No. We have approximately 150,000 square feet left put in the envelope.

CHAIRMAN WILLIAMS: And that is what you are talking about in terms of the eastern side expansion?

MR. FARMER: That's correct.

CHAIRMAN WILLIAMS: In that regard, do the architectural building plans contemplate this expansion to the extent that you are putting in bigger footings or doing other kinds of things like that, and could you, if that is the case, outline the placement of that eastern addition?

It isn't going to cover all of the area of the parking deck., I would guess.

Mr. Kemp, I believe.

MR. KEMP: We have provided structural ability in all the area to the setback line to accommodate change. This

is purely to provide the flexibility now at a limited expenditure to provide flexibility.

What we didn't want to do in Phase I is limit our capabilities in Phase II. So, from the point at the top of the existing building to a point, I believe, 75 feet back from the property line is designed for expansion in the future.

CHAIRMAN WILLIAMS: As many floors as the existing facility has?

MR. KEMP: To the existing four floors plus the two additional floors that would be added on top.

CHAIRMAN WILLIAMS: And the first four floors that would be added would be floors that would be of the same height, slab to slab height as the floors in the existing hospital?

MR. KEMP: The east addition would have floors that would be identical in height to the existing hospital, including the interstitial space provided in the existing hospital. They would be clinical/medical floors.

CHAIRMAN WILLIAMS: And is there anything in the original order, the plans approved there, the representations here tonight or whatever, that would guarantee the same sort

of architectural style would prevail, or could it become brick, K Street curtain wall, something entirely alien--

COMMISSIONER BENNETT: It's not there yet.

CHAIRMAN WILLIAMS: I know it's not there. My question is whether or not there is something in the order of yours or the order of this case that would allow us to be certain that if the thing did not come back to the Commission that there would nevertheless be an architectural and design integrity so as to maintain the design in, if you will, amenity or characteristic of the existing--

MR. FARMER: To specifically answer your question, in the previous order there is not such language contained.

CHAIRMAN WILLIAMS: I didn't find it.

MR. FARMER: No. It is just not there. That's very plain.

It is the hospital's intention to continue the current design and we can express that for the record.

CHAIRMAN WILLIAMS: Is that a finding of fact or is that a fact that I can bring around into a condition?

MR. FARMER: We will make that a proffer and you can turn that into either a conclusion or a condition as the physician sees fit.

MR. TUCKER: Mr. Chairman, let me add that the architectural drawing should also reflect this elevation. I don't have a set of plans before me to check it out.

CHAIRMAN WILLIAMS: Well, this in the area of expansion that isn't even in these plans is what I'm talking about. What I am trying to do, picking up on the themes of some of my other colleagues is future plans. And since there looked to me a possibility these folks would not be coming back, particularly if views or change down DCRA, it seemed to me it would be useful to get in some of the principles of which the earlier test case seemed to arrest and what is evolved, what we have expressed tonight in terms of the precepts of the design for the edition before us and to make sure that there is a continuity.

That doesn't mean that it can't be changed, but it would mean if it is changed, there would be a trip back. That's what I'm trying to do, is to bring that together.

We've heard something about the number of employees in Silver Spring, the number of employees at the main building, the number of beds, about 1,000 growth in outpatient services and the like. We've heard that your current parking supply is stressed or inadequate.

MR. TUCKER: Would you be so kind as to make those conditions clear?

CHAIRMAN WILLIAMS: Okay. The conditions that I am recalling from discussion are indications from Mr. Farmer that there will be something forthcoming on it that had to do with the character of the materials on the roof structure.

And there was another issue which had to do with--

COMMISSIONER BENNETT: DOES.

CHAIRMAN WILLIAMS: DOES.

And a third issue--

MR. FARMER: Was with the east addition.

CHAIRMAN WILLIAMS: East addition. The design, the maintenance of the integrity overall design on any future expansion beyond that contemplated here, even if it should be determined by the then Zoning Administrator to be a matter of right and not require a further visit to the Zoning Commission.

MR. FARMER: That's correct.

CHAIRMAN WILLIAMS: All right. Does anybody recall anything else?

COMMISSIONER BENNETT: I can't.

CHAIRMAN WILLIAMS: Oh, 14-foot height on that

B

TRAFFIC IMPACT ANALYSIS – CHILDREN’S NATIONAL MEDICAL CENTER, MODIFICATION TO AN APPROVED PLANNED UNIT DEVELOPMENT, NORTHWEST, WASHINGTON, D.C.

(Case No. 88-34A)

Prepared for:

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August 2, 2006

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1.0 INTRODUCTION

1.1 Project Background

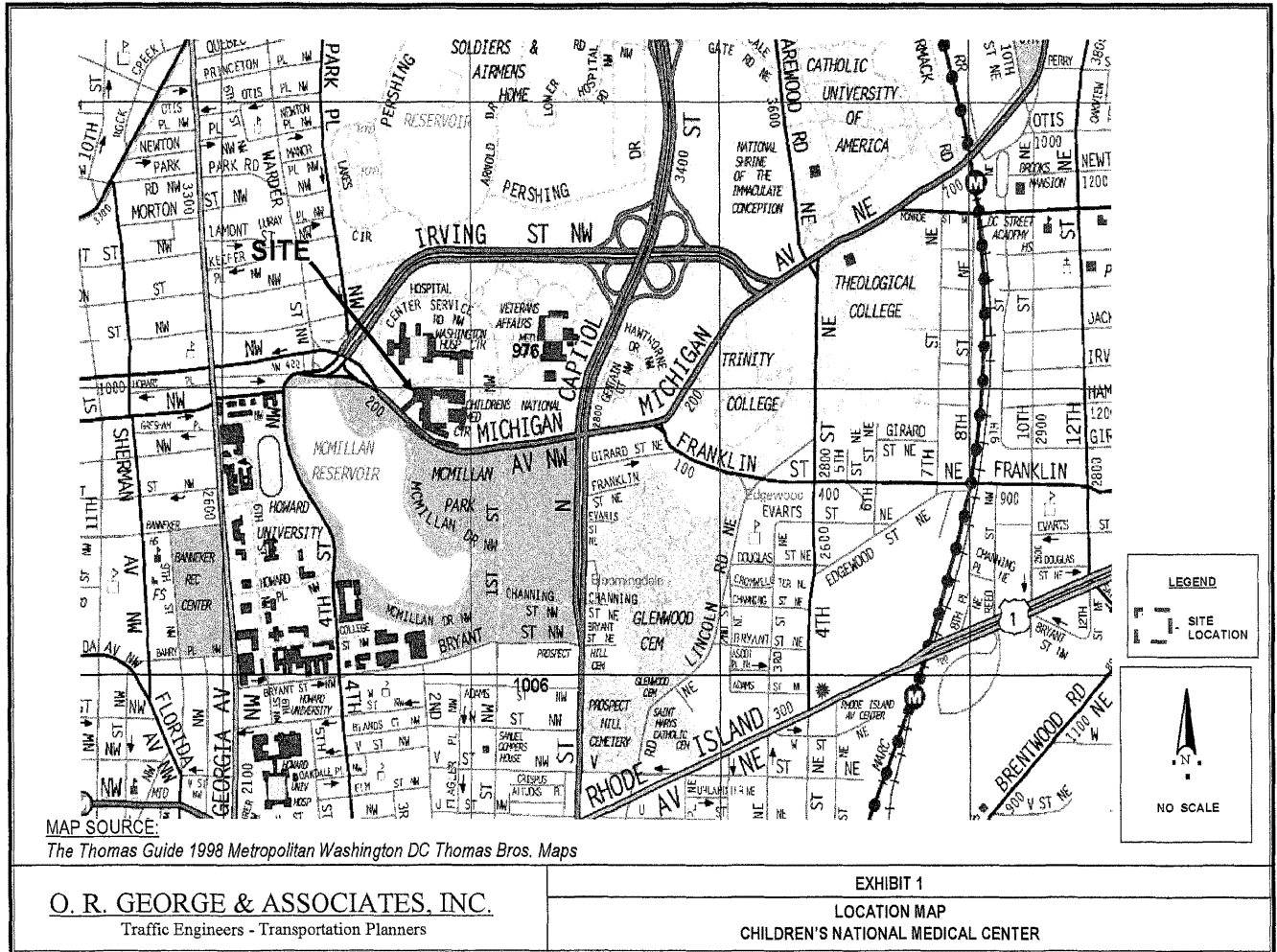
Children's National Medical Center ("The Applicant"/"CNMC") plans to construct additional improvements to its facilities situated north of Michigan Avenue and west of First Street, in Northwest, Washington, D.C. The current Planned Unit Development (PUD) was approved by the Zoning Commission in April, 1970, and was modified in July, 1989. The 1989 approval permitted total improvements of 779,095 Gross Floor Area (GFA). The site currently consists of approximately 960,000 square feet of GFA, supported by 1,930 on-site parking spaces and loading facilities including three (3) 55-Ft loading berths with platforms. The Applicant's statement details history of the development of the facilities.

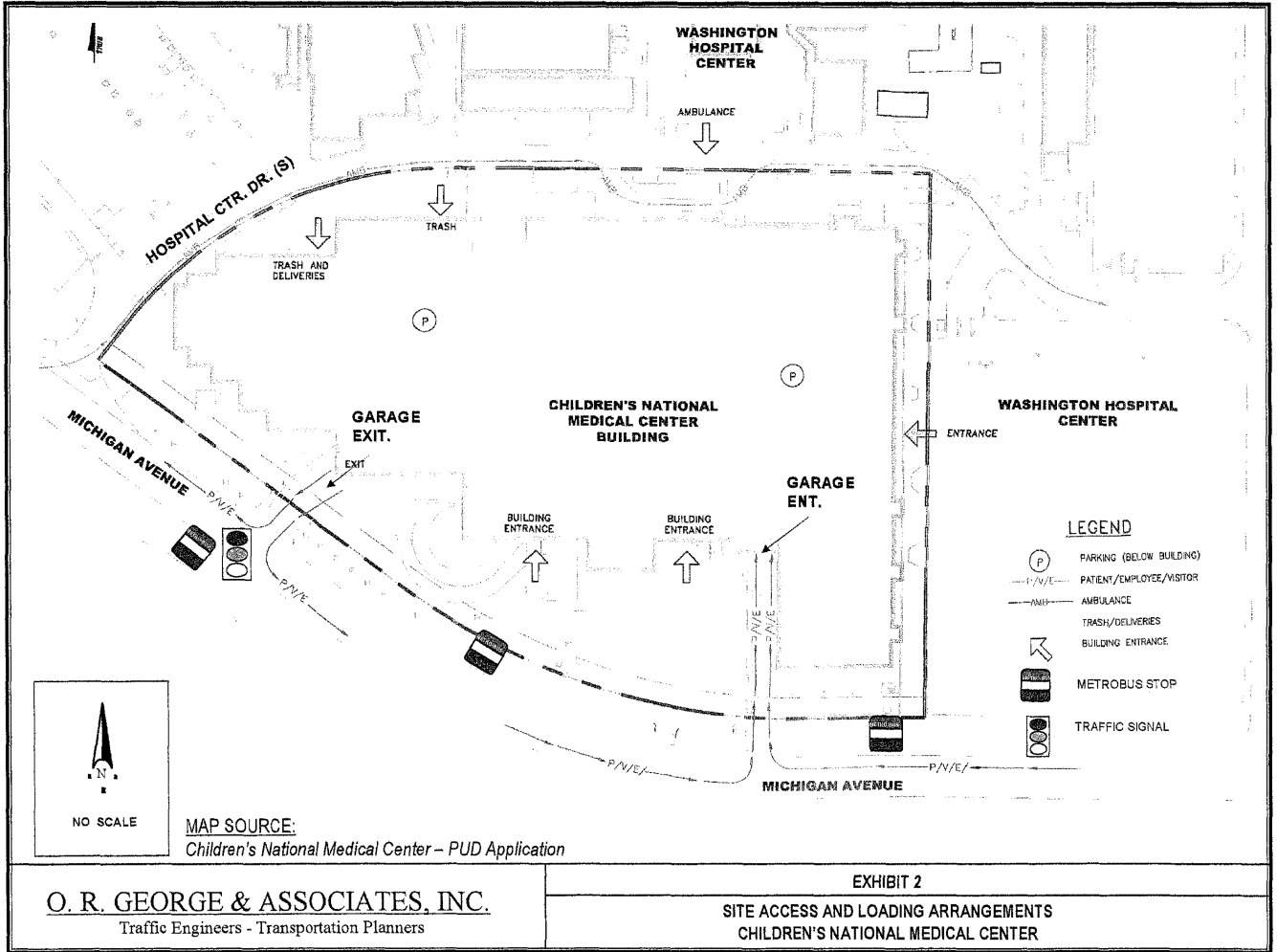
The subject property is zoned SP-2 (Medium Density Residential/Limited Office). Under the current application, CNMC proposes to expand the east wing of the hospital facilities by approximately 168,000 square feet of GFA. The proposed expansion is intended to provide principally for greater operational efficiency, which takes into consideration current technological and equipment/service factors needed for healthcare delivery. In conjunction with this expansion, CNMC is further diversifying facilities and services at their off-site/satellite clinics, such that only a modest increase in staff will occur at the hospital. The Applicant proposes no changes to the existing parking, loading, or site access situation. Exhibit 1 shows the location of the hospital within the local setting. Exhibit 2 shows the current site access and loading arrangements.

A number of factors make the CNMC facility attractive from the perspective of traffic generation and parking demands, as well as considering transportation access within the immediate area. These are as follows:

- a) The Children's National Medical Center is a long-standing institutional use, for which vehicular access and parking demand patterns are well established, and for which considerable data is available.
- b) The subject property is situated adjacent to Michigan Avenue (one of the City's arterials) and is also in proximity to other principal arterials (i.e., Irving Street, North Capitol Street, Georgia Avenue etc.), which combine to provide favorable regional access.
- c) The Applicant has in place significant Transportation Management Plan measures, including paid employee parking, shuttle bus service to the nearby Brookland/CUA Metrorail Station, and off-site/satellite parking, which is free of cost to employees and patrons. *[It is worthy of note that the shuttle bus service operates at 10-minute headways during the peak hour. The site is also served by several local Metrobus routes.]*
- d) The site is served by separate ingress and egress access points. The egress point is signalized, allowing for favorable access onto Michigan Avenue.
- e) The Applicant's proposal involves a modest expansion of a long-standing institutional use. The planned expansion would involve staff categories and shift assignments that would result in significant dispersal (or spread) of trips, with the majority occurring outside of the peak hours of the adjacent roadway network.

As will be discussed later in the report, the above factors would result in lowering of the trip generation, parking demands and related impacts of the proposed development, particularly during the morning and afternoon peak periods. These factors are further considered in the relevant sections of this report.





1.2 Study Purpose and Scope

This study was prepared in support of the current PUD Modification Application. Based on discussions and issues raised during the Set-Down Hearing, the Zoning Commission has expressed interest in “what if” or conditional aspects of development activities subsequent to the 1989 approvals. With this in mind, the purpose and key elements of the study are to evaluate and document the following:

- 1) Existing roadway and traffic conditions within the immediate area of the subject site;
- 2) The impact of the existing facilities of the Hospital, compared with the approved improvements per the 1989 PUD approvals;
- 3) Future “background” traffic conditions, based on a generalized examination of potential development activity within the study area, and potential annual growth in through traffic along the key study area roadways;
- 4) The traffic impact of the development proposal, considering existing and planned transportation facilities, site trip generation, access and on-site circulation; and
- 5) Any capacity, safety or operational constraints to the proposed development, as well as potential mitigation measures for such constraints, including potential enhancements to the institution’s Transportation Demand Management (or Transportation Management Plan) measures.

The methodology used in this analysis is in accordance with the current guidelines established by the District of Columbia Department of Transportation (DDOT) for the assessment of the transportation impacts and access requirements associated with the PUD process. The study area and other key parameters considered were also discussed with the responsible DDOT staff, and correspondence outlining the scope of the study is presented in Appendix A.

1.3 Report Organization and Summary

This report is organized into seven (7) sections. The current Section presents the background, purpose and scope for the study, and summarizes the findings. Section 2 evaluates existing roadway, traffic and parking conditions. Section 3 examines projected growth in traffic due to the impact of approved and potential developments within the general study area, as well as potential growth in through traffic along the key study area roadways serving the site. Section 4 analyzes the traffic impact of the Applicant’s proposal, and assesses related site access, circulation and parking provisions. Section 5 reviews and recommends improvements to the Transportation Management Plan for the hospital. Section 6 summarizes the study findings and makes recommendations, where appropriate, to mitigate any potential transportation impacts identified.

The Applicant plans to complete the majority of the proposed construction by the end of 2007. The future traffic conditions included a 3.0% growth factor for through traffic along the arterial roadways, as well as projected traffic assignment from approved developments and the subject PUD. The study has concluded that the existing study area road network can accommodate the Applicant’s development proposal, based on the following principal considerations:

- a) The subject development would generate an average of one hundred ten (110) peak hour trips. This trip generation is quite modest and would be within the daily fluctuations of traffic along major arterials such as Michigan Avenue and North Capitol Street.

- b) The location and institutional use of the site is such that it attracts trips from both the dominant and minor travel directions during the morning and afternoon peak hours.
- c) A number of roadway improvements have been implemented within the adjacent roadway network and a number of further improvements have been conditioned as approval of the Washington Hospital Center Master Plan.
- d) The projected year 2007 total traffic situation, including the proposed development, would be accommodated by the roadway network, with acceptable Levels of Service at all study area intersections.
- e) The subject PUD would have adequate off-street parking, well in excess of the City's requirements, and should therefore not result in any adverse neighborhood impacts.
- f) The Applicant proposes to enhance the provisions of its existing Transportation Management Plan, as a further mitigation measure.

Based on the above considerations, this study finds that the proposed development would satisfy the City's general criteria regarding adequacy of transportation facilities. This considers general accessibility by the various modes of transportation, particularly transit. The project is also well served with parking; and this should ensure no impacts on the parking demands within the impacted area that would make the project objectionable. The remaining sections of the report present the basis for this assessment.

2.0 EXISTING ROADWAY AND TRAFFIC CONDITIONS

2.1 Land Use and Zoning

The subject property is located in Square 3129, which includes the Washington Hospital Center medical complex and is zoned SP-2 (Medium Density Residential and Limited Office). The site is currently improved with approximately 960,000 square feet of GFA. The areas surrounding the site are generally characterized by institutional uses, including the Washington Hospital Center to the immediate north, the US Soldiers and Airman Home further to the north, the VA Hospital to the northeast and McMillan Reservoir to the immediate south. No residential properties abut the site but there are residential communities farther to the west, east and south.

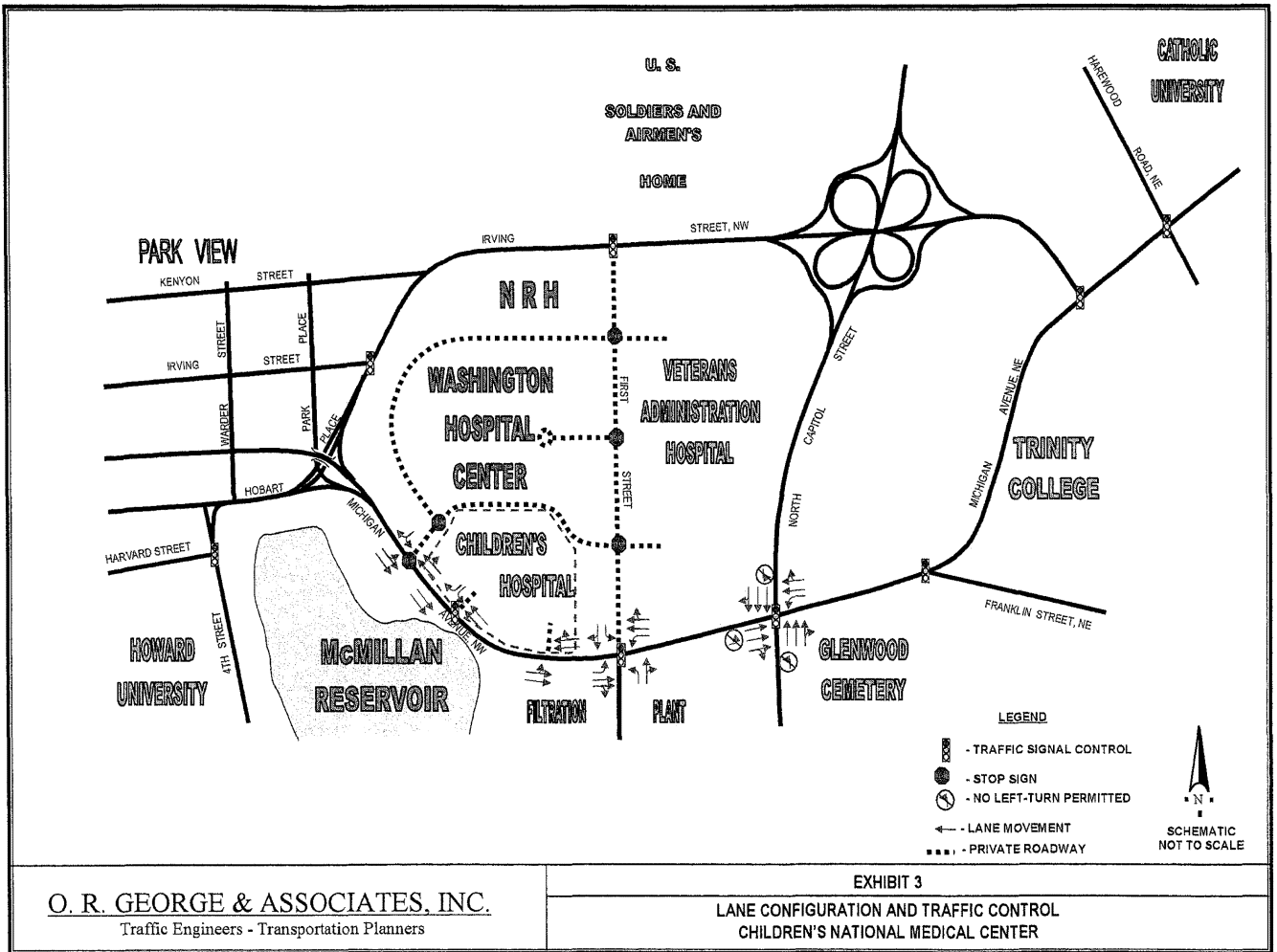
2.2 Study Area Road Network

Regional access to the CNMC site is well served by Irving Street (to the north), North Capitol Street (to the east), Georgia Avenue (to the west) and the abutting Michigan Avenue to the immediate south. North Capitol Street and Georgia Avenue are principal arterials on the City's transportation system and Irving Street and Michigan Avenue are minor arterials. Immediate local access to the site is provided via Michigan Avenue. Based on discussions with the DDOT Transportation Policy and Planning Administration staff, a study area roadway network consisting of five (5) intersections was identified for evaluation. These intersections are as follows:

- a) Michigan Avenue at First Street, NW (Signalized);
- b) Michigan Avenue at Hospital Center Drive South, NW. (unsignalized);
- c) Michigan Avenue at CNMC Parking Garage Entry (unsignalized);
- d) Michigan Avenue at CNMC Parking Garage Exit (Signalized); and
- e) North Capitol Street at Michigan Avenue (Signalized).

The general physical characteristics and service functions of the key study area roadways are summarized below. The layout of the study area roadway network, as well as the lane configuration and traffic control devices provided at the adjacent intersections, are illustrated in Exhibit 3

- **Michigan Avenue:** Michigan Avenue is a Minor Arterial on the City's roadway network. The roadway runs in an east-west direction through the study area and serves approximately 22,750 vehicles per average weekday. The posted speed limit is 30 MPH.
- **First Street, NW:** Between Michigan Avenue and Irving Street this is a private roadway, owned by the Washington Hospital Center. It runs in a north-south direction and provides access to the Washington Hospital Center and the VA Hospital to the immediate north. South of Michigan Avenue, this roadway is classified as a collector and serves approximately 12,000 vehicles per average weekday. The posted speed is 25 MPH, and the City has provided considerable traffic calming features. To the south of Michigan Avenue, First Street is abutted by the McMillan Reservoir property and further south provides access to the Bloomingdale neighborhood with cross-street connections to Howard University and other institutional/public facilities within the Howard University/Le Droit community.
- **North Capitol Street:** North Capitol Street is a Principal Arterial on the City's road network. The roadway serves approximately 35,000 vehicles per average weekday and is a primary commuter route into the Downtown/Central Employment Area.



As noted earlier, the CNMC parking garage has separate (one way) ingress and egress points onto Michigan Avenue, and the exit is signalized. This provides for a more favorable site access situation. It is also important to note that sidewalks are provided along all roadways in the vicinity, and the signalized intersections are equipped with pedestrian countdown signals, which enhances both pedestrian and vehicular flow and promote safety.

2.3 Existing Traffic Situation

In order to assess current traffic operating conditions, field observations were made of the weekday traffic flow conditions, within the defined study area, during the morning and afternoon peak periods. In addition, peak period turning movement counts were undertaken at the study area intersections. Exhibit 4 shows the morning and afternoon peak hour volumes. The count summaries are included as Appendix B.

The peak hour traffic volumes were analyzed using the Highway Capacity Manual (HCM) capacity analysis procedures, in accordance with the DDOT requirements. The results show that the study area intersections currently operate at acceptable Levels of Service¹, during the morning and afternoon peak hours. The Level of Service results are based on the average control delay computed by the HCM procedures for all vehicles utilizing the intersections during the peak hours. Table 1 presents the summary of the capacity analysis results for the existing traffic situation. Detailed capacity analysis worksheets are presented in Appendix C.

TABLE 1
SUMMARY OF CAPACITY ANALYSIS RESULTS -
EXISTING TRAFFIC SITUATION

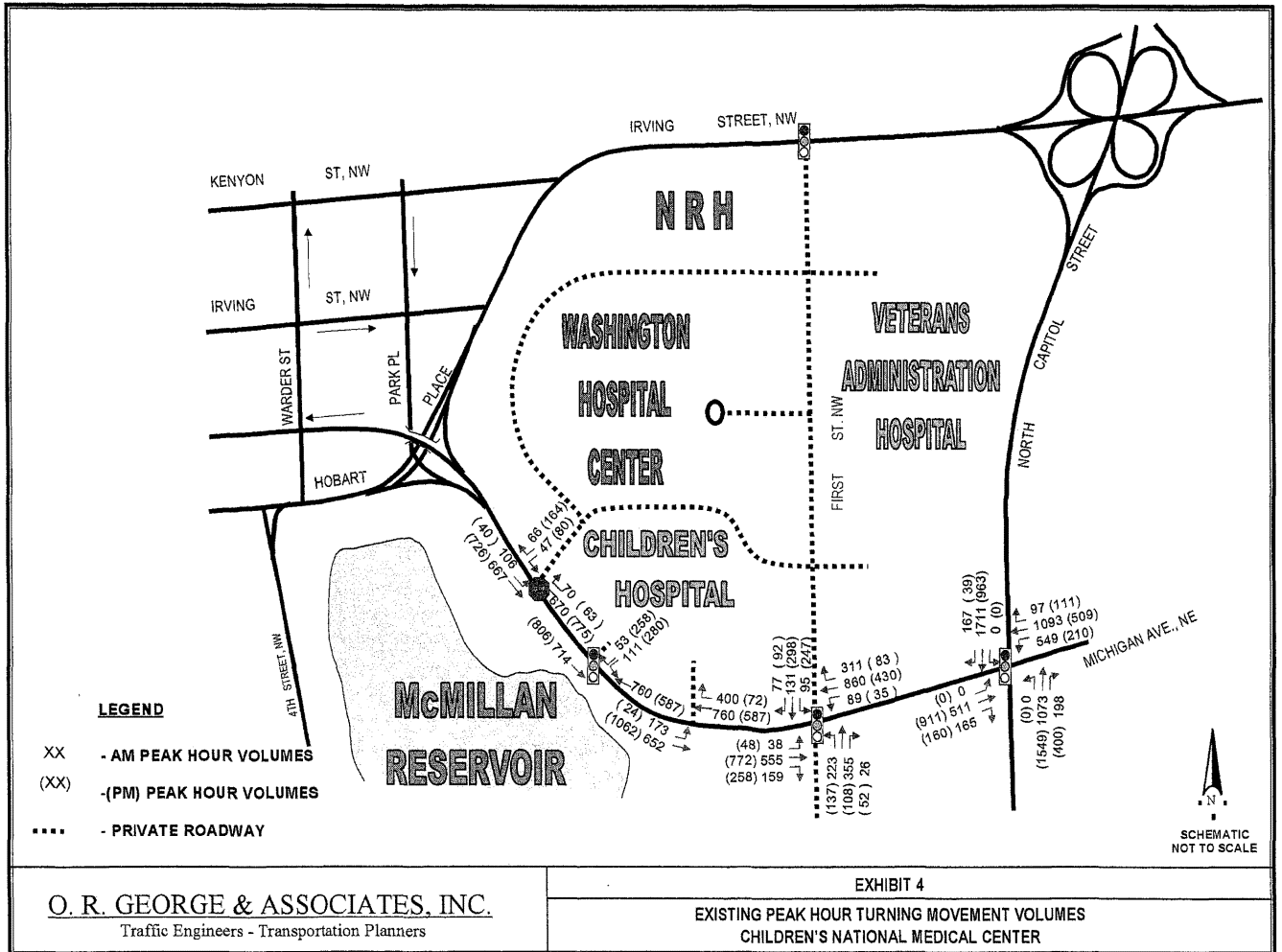
Intersection	AM Peak Hour		PM Peak Hour	
	Level of Service	Avg. Delay (Sec/Veh)*	Level of Service	Avg. Delay (Sec/Veh)*
1) Michigan Ave. at First St., NW (Signalized)	D	35.0	C	34.7
2) Michigan Ave. at Hospital Center Dr. South, NW. (unsignalized)	D	30.6**	D	26.7**
3) Michigan Ave. at CNMC Parking Garage Entry (unsignalized)	B	13.8	A	8.8
4) Michigan Ave. at CNMC Parking Garage Exit (Signalized)	B	10.3	B	19.0
5) North Capitol St. at Michigan Ave. NW (Signalized)	D	41.9	D	39.8

*Sec/Veh = Seconds per Vehicle

** Average delay per intersection (Note: Minor approach serving WHC exiting traffic experiences moderate delay during the peak hours.)

Source: O. R. George & Associates.

¹ "Level of Service" is a qualitative measure describing operational conditions within a traffic stream or at an intersection, and reflects their perception by drivers and other roadway users. Principal considerations are factors such as speed and travel time, delay, and freedom of maneuver, traffic interruptions, comfort, convenience and safety. Current engineering practice defines six (6) Levels of Service (A-F), with "A" representing best operating conditions, and Level of Service "F" representing the worst conditions. Level-of-Service D is generally considered by the District of Columbia as the minimum acceptable conditions for planning and design purposes.



3.0 BACKGROUND TRAFFIC SITUATION

3.1 Projected Year 2007 Background Traffic Situation

As noted in the Applicant's statement, some of the proposed improvements are in progress and the development plan calls for primary build-out by the end of 2007. Therefore, for the purposes of this study, the year 2007 was considered the "design year". Considering the City's guidelines and procedures, the 2007 design year traffic conditions would consist of the following key elements:

- a) Projected trip generation for other planned developments, within the immediate site area, which are likely to be built-out by year 2007; and
- b) Potential increase in through traffic based on historical growth trends.

Review of historical Average Daily Traffic (ADT) provided by DDOT, indicates that traffic volumes on the study area roadways have increased by approximately 3% per year the last six (6) years. It is therefore projected that an increase in traffic within the study area over the next year, i.e., by year 2007, would be similar. This is in keeping with DDOT's typical growth assumptions for roadways serving significant through traffic volumes. The 2007 base year traffic volumes, reflecting that annual growth, are presented as Appendix D.

The background developments considered in this study were based on the following:

- i) 'Economic Development Map of the District of Columbia Office of the Deputy Mayor for Planning and Economic Development;
- ii) Development activity information provided by the Office of Planning; and
- iii) The developments considered by the "Medstar/Washington Hospital Center Rezoning Application and Master Plan - Traffic Impact Analysis" (by O. R. George & Associates, 2000).

Based on the above, it was determined that only the approved Washington Hospital Center (WHC) Master Plan development would have some impact on the local area road network. It is important to note that although the McMillan Reservoir has been under development consideration by the D.C. Office of Planning, its current status is on hold and development is not forecast in the foreseeable future.

The Washington Hospital Center Master Plan and PUD was approved in 2002 and allows a maximum gross floor area (GFA) of 4.5 million SF from its existing 1.4 million SF. The approval was conditioned upon a number of major roadway improvements relating primarily to the access of the WHC major parking facilities within the study area and these are discussed in further detail in Section 3.3 (See page 13). Given the distribution pattern developed for CNMC (see section 4.0) the following improvements associated with the WHC approval were considered in this analysis. This is in accordance with DDOT's guidelines for analyzing approved developments.

- 1) Michigan Avenue at Hospital Center Drive South, NW: Signalization and geometric improvements.
- 2) Michigan Avenue at First Street, NW: Minor geometric and pavement marking improvements and signal phasing modifications. These improvements were implemented by DDOT in the Spring of 2005.

The projected traffic assignment for the WHC development is shown in Appendix E and was extrapolated from the traffic impact analyses undertaken by this consultant for the WHC Master Plan in 2000. The assignment takes into account the proposed development but in order to be conservative and analyze the worst-case scenario, the proposed rerouting of WHC trips from First Street to other major arterials was not considered.

3.2 Traffic Analysis - Year 2007 Background Traffic Situation

The projected year 2007 background traffic situation was derived by combining the year 2007 "base" traffic situation (Appendix D) with the trip assignment for the background development considered (Appendix E). The projected year 2007 total background traffic situation is presented in Exhibit 5. These volumes were analyzed using the HCM analysis procedures, as was done for the existing traffic situation.

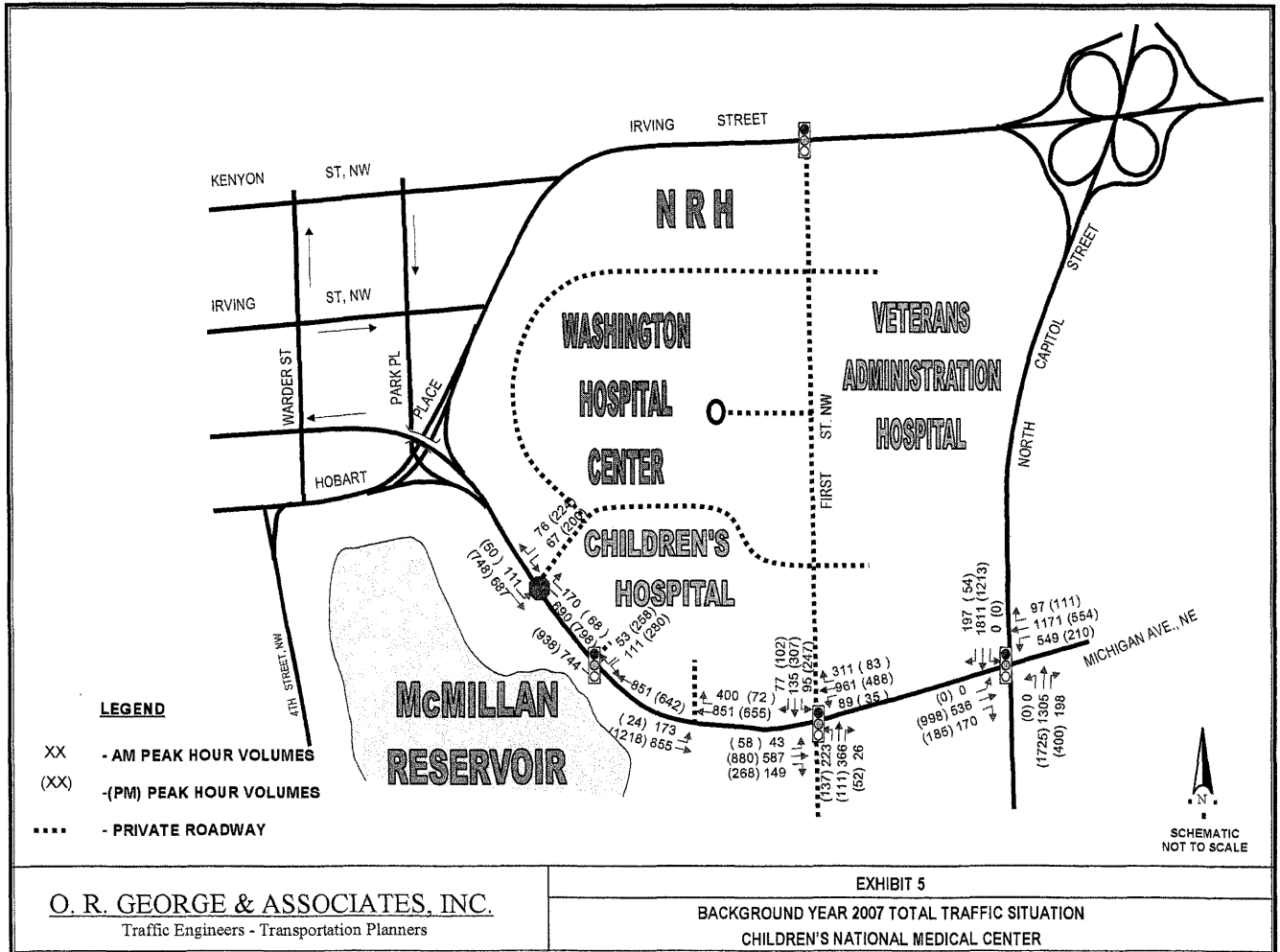
Table 2 below summarizes the capacity analysis results for the projected year 2007 background traffic situation. The results show that the study area road network would continue to operate within the City's acceptable planning standards, during the morning and afternoon peak hours with the conditioned improvements related to the approved WHC development. Appendix F presents the capacity analysis worksheets for the background traffic situation.

TABLE 2
SUMMARY OF CAPACITY ANALYSIS RESULTS -
PROJECTED YEAR 2007 BACKGROUND TRAFFIC SITUATION

Intersection	AM Peak Hour		PM Peak Hour	
	Level of Service	Avg. Delay (Sec/Veh)*	Level of Service	Avg. Delay (Sec/Veh)*
1) Michigan Ave. at First St., NW (Signalized)	D	38.3	D	47.0
2) Michigan Ave. at Hospital Center Dr. South, NW. (Signalized Assumed)	B	11.4	C	21.7
3) Michigan Ave. at CNMC Parking Garage Entry (Unsignalized)	C	15.1	A	9.0
4) Michigan Ave. at CNMC Parking Garage Exit (Signalized)	B	10.5	B	19.3
5) North Capitol St. at Michigan Ave. (Signalized)	D	46.0	D	44.2

*Sec/Veh = Seconds per Vehicle

Source: O. R. George & Associates.



3.3 Planned Roadway Improvements – Washington Hospital Center

The city does not currently have any roadway improvements “programmed” within the local area. However, as discussed earlier the Zoning Commission recently (2002) approved the Washington Hospital Center Master Plan/Rezoning in conjunction with a Planned Unit Development proposal, which called for major improvements over the period 2003 - 2015. Table 3 following highlights the changes covered under the recent approval.

TABLE 3
WHC MASTER PLAN/ PUD
DEVELOPMENT DENSITY PROPOSALS

Site Elements	2000	Master Plan/ PUD Proposal
• Gross Square Feet (GSF)	2.8 Million	5.6 Million
• Gross Floor Area (GFA)	1.4 Million	4.5 Million
• Employees	5,700	7,700
• Parking	4,630 Spaces	6,250 Spaces

Source: WHC Master Plan Zoning Commissions Order No. 969.

In order to support the level of development shown in Table 3, WHC proposed several major roadway improvements geared toward enhancing its site access. Review of the case record shows that the improvements were intended to redistribute WHC peak period traffic flow considering the locations of major parking facilities within the campus. It is specifically noted that approximately 70% of WHC’s parking is located in the northern section of campus directly accessible via a two-lane section of internal service roadway. A subsidiary benefit was that the improvement also provided an access to their Emergency Care department. This allowed emergency vehicles to avoid the section of roadway running between the National Rehabilitation Hospital and the core WHC building, is “outfitted” with several speed bumps/humps and all-way stop signs. For ease of reference Appendix G was developed to include the following:

- a) A description of the roadway improvements (Appendix G 1-3) pages 9 - 11 of Zoning Order 02-43.
- b) Exhibit 11 (page 33) from WHC/Medstar Master Plan and Rezoning document (Appendix G-4).
- c) Exhibit 9 from WHC/Medstar PUD document (Appendix G-5).

It is noteworthy that the Zoning Order called for improving Irving Street between First Street and North Capitol Street (Improvement items 5 and 6). These improvements have been completed with funding from the Federal Highway Administration as part of the North Capitol Street corridor upgrade. No contributions were required from WHC or the City for the construction. The Zoning Order called for additional improvements at the intersection of Michigan Avenue and First Street, NW (item 4). However, these were implemented by DDOT in April, 2005. None of the other improvements required by the WHC PUD order have been completed.

As noted in Appendix G 1 - 3 the improvements discussed above would result in a significant redistribution of traffic. This potential distribution pattern was considered in developing future (2007) CNMC traffic situation, which is analyzed in the following section.

4.0 FUTURE TRAFFIC SITUATION

4.1 Proposed Development Plan

The current CNMC proposal is to expand the hospital facilities by approximately 168,000 square feet of GFA. This would principally be expansion of the operating room facilities and space providing for neo-natal care programs. Specifically, the expansion would consist of the following:

- a) Two additional floors within the East Wing Tower would provide 96,000 GSF space for in-patient bed capacity and for the Neo-natal Intensive Care Unit (NICU).
- b) Eleven (11) new operating rooms totaling 72,000 GSF (including Post-Op Recovery facilities) in conjunction with renovation to the existing Operating Room (OR) Suite.

As noted in Section 1, the future development would continue to be served by 1,930 on-site parking spaces, [1,385 employee spaces and 545 visitor spaces]. CNMC would also maintain the existing 350 spaces for employees at its two (2) satellite lots located on South Dakota Avenue and Massachusetts Avenue. The off-site satellite lots are served by shuttle buses connecting to the hospital. [Details regarding the shuttle schedules are presented in Section 5.]

CNMC management has indicated that the current parking adequately meets the demand and no further parking will be required as a result of the proposed expansion. In addition the hospital also provides a shuttle bus service throughout the day between the hospital and the nearby Brookland/CUA Metrorail Station, and the shuttle operates at 10-minute headways during the peak periods. Further details of these shuttle services and the hospital Transportation Management Plan are included within Section 5.

4.2 Trip Generation

DDOT typically requires that the trip rates recommended by the Institute of Transportation Engineers (ITE) be utilized in conducting traffic impact assessments. The ITE Trip Generation Manual however, defines “Hospitals” as *“any institution where medical or surgical care and overnight accommodations are provided to non-ambulatory and ambulatory patients”*. It notes that the term “Hospital” does not refer to medical clinics or outpatient care. With CNMC proposing expansion of existing facilities site-specific surveys would represent the most reliable base for trip generation data. As such surveys were undertaken over a 12-hour period on a typical weekday at the hospitals main access point/parking garage entrance and exit to establish trip generation rates for the existing facilities.

It is important to note that the trip rates shown in Table 4 below include the shuttle buses that serve the satellite parking lots and the Metrorail Station and therefore incorporate adjustment for transit usage. It is noted that the shuttle services are heavily utilized and serve approximately 800 passengers on a daily basis. The trip rates and projected vehicular trips for the proposed expansion are presented in Table 4.

TABLE 4
PROJECTED PEAK HOUR TRIP GENERATION –
CNMC PLANNED UNIT DEVELOPMENT

Trip Rates	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
• Trips per 1,000 GSF Medical Facility (From ORGA survey of existing access points)	0.56	0.16	0.72	0.09	0.52	0.61
• Trips per 1,000 GSF Hospital (From ITE Manual)	0.84	0.36	1.20	0.35	0.83	1.18
Trip Generation						
• Trips/168,000 GSF	94	27	121	15	87	102

Source: O. R. George & Associates.

It is important to note that the trips shown in Table 4 represent the projected trip generation for the **peak hour** only, and not for the entire peak period. The peak period generation occurs over a 3-4 hour period between 6:00 – 10:00 AM and 3:00 – 7:00 PM. This takes into consideration various types of employee shifts at the hospital, visitors and patients, as well as transportation demand management measures such as flexible work hours, which are being encouraged by both public and private sector employees and government agencies.

4.3 Trip Distribution and Traffic Assignment

The peak hour trip generation and distribution patterns for the proposed expansion would be related to the already well-established patterns observed at CMNC. Examination of current employee residential Zip Code data also provided distribution patterns for the existing facilities at CNMC. Accordingly, the projected trip generation would largely be oriented from the Maryland suburbs to the east and north. The location and institutional use of the site is such that it attracts trips approaching from both the dominant and minor travel directions during the morning and afternoon peak hours. This takes into consideration the proximity of major regional roadways that provides considerable flexibility and opportunity as far as directions of approach for vehicular traffic to the hospital. Based on the above, the assumed distribution pattern and the projected traffic assignment for the proposed expansion are shown in Exhibits 6 and 7.

4.4 Capacity Analysis - Year 2007 Total Traffic Situation

The year 2007 total traffic situation was derived by combining the traffic assignment for the proposed development (Exhibit 7) with the year 2007 total background traffic situation (Exhibit 5). The year 2007 total traffic situation is illustrated in Exhibit 8 (on page 19). These volumes were analyzed using the Highway Capacity Manual (HCM), as was done for the existing and background traffic conditions. The level of service results are presented in Table 5.

With the projected low trip generation of the proposed development, the capacity analysis results indicate that, upon build-out of the proposed development, the study area intersections would

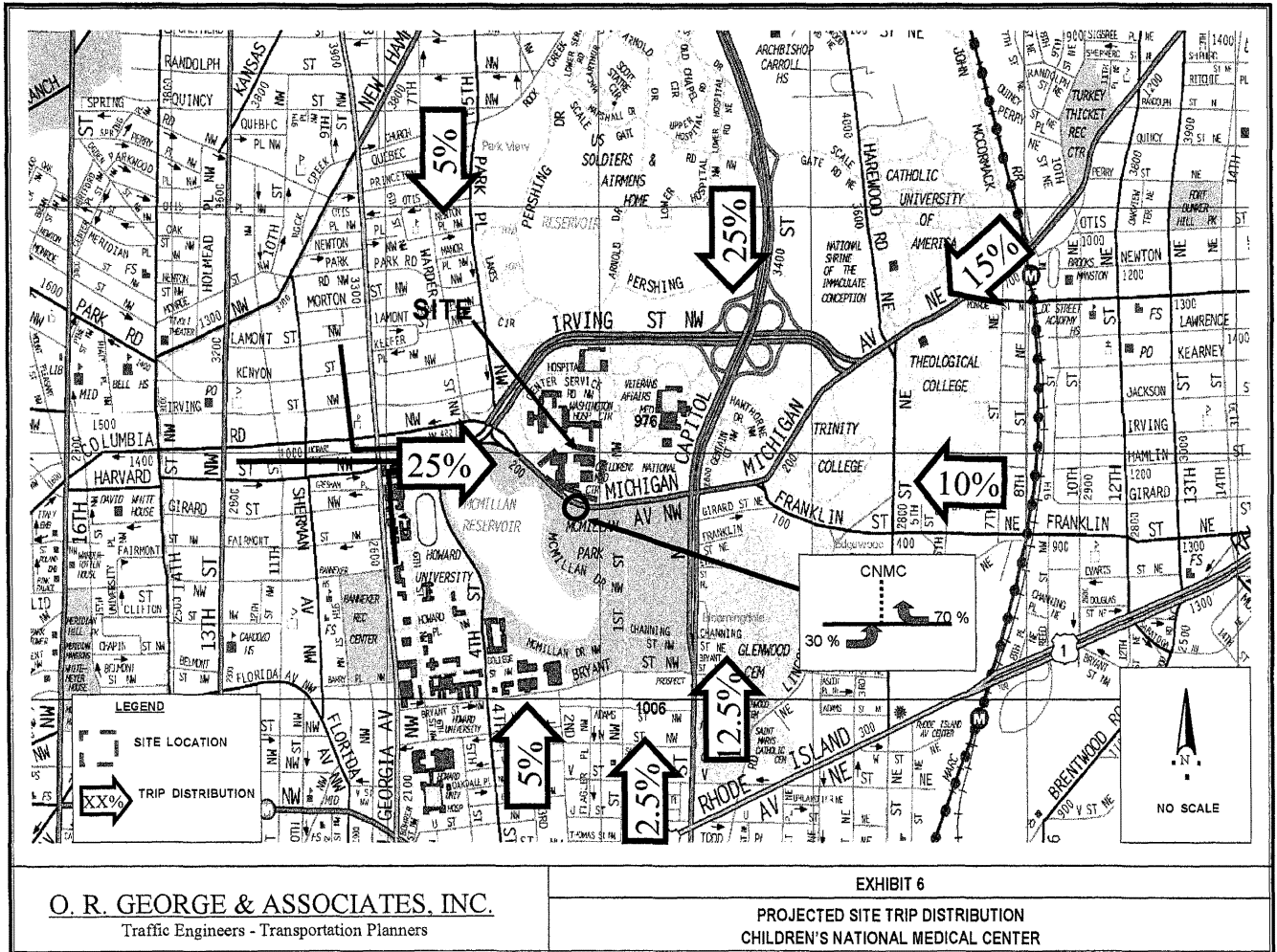
continue to operate acceptably, during the morning and afternoon peak periods. The capacity analysis worksheets for this situation are presented in Appendix H.

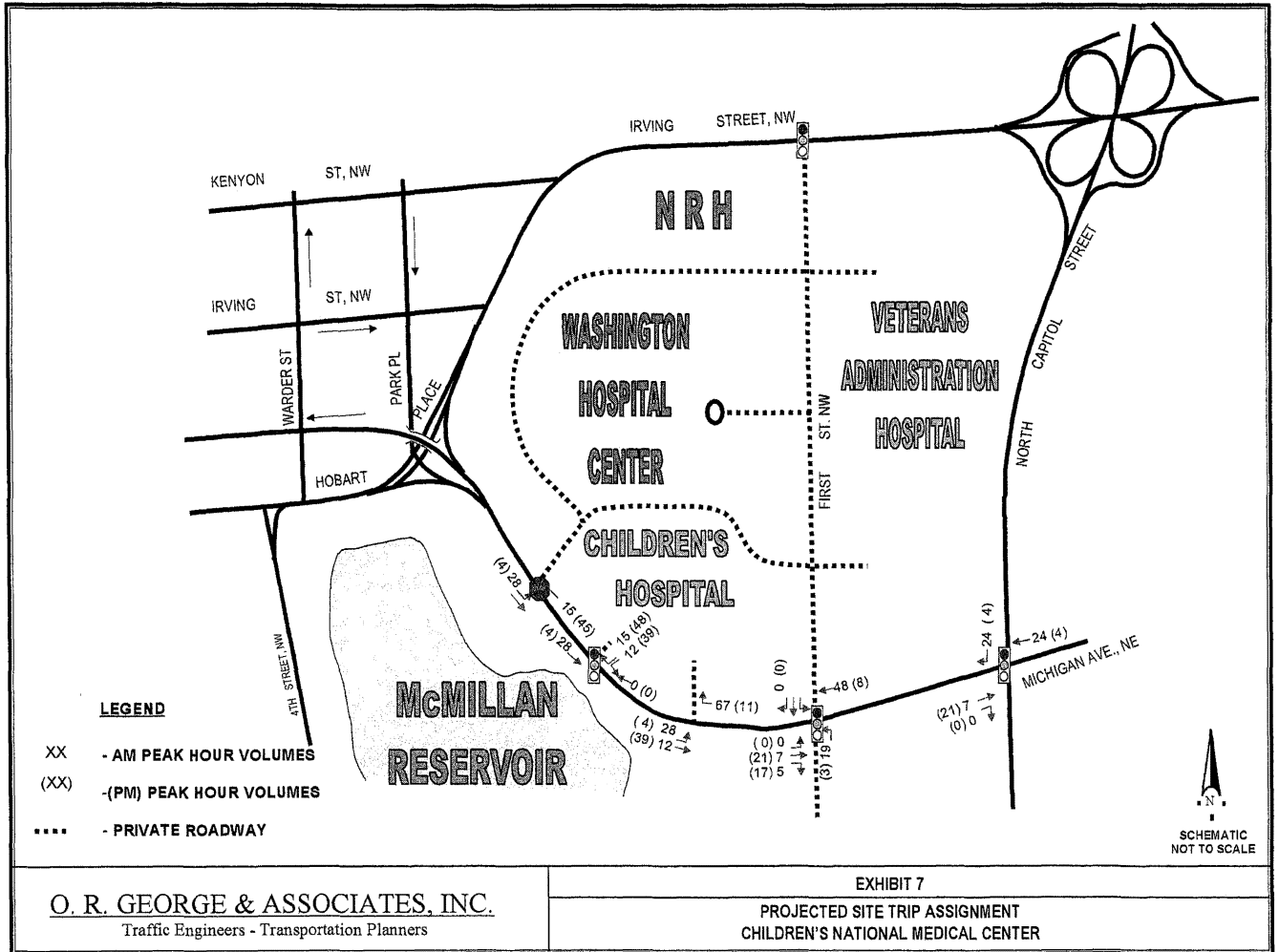
TABLE 5
SUMMARY OF CAPACITY ANALYSIS RESULTS -
PROJECTED 2007 TOTAL TRAFFIC SITUATION
(INCLUDING THE SUBJECT EXPANSION)

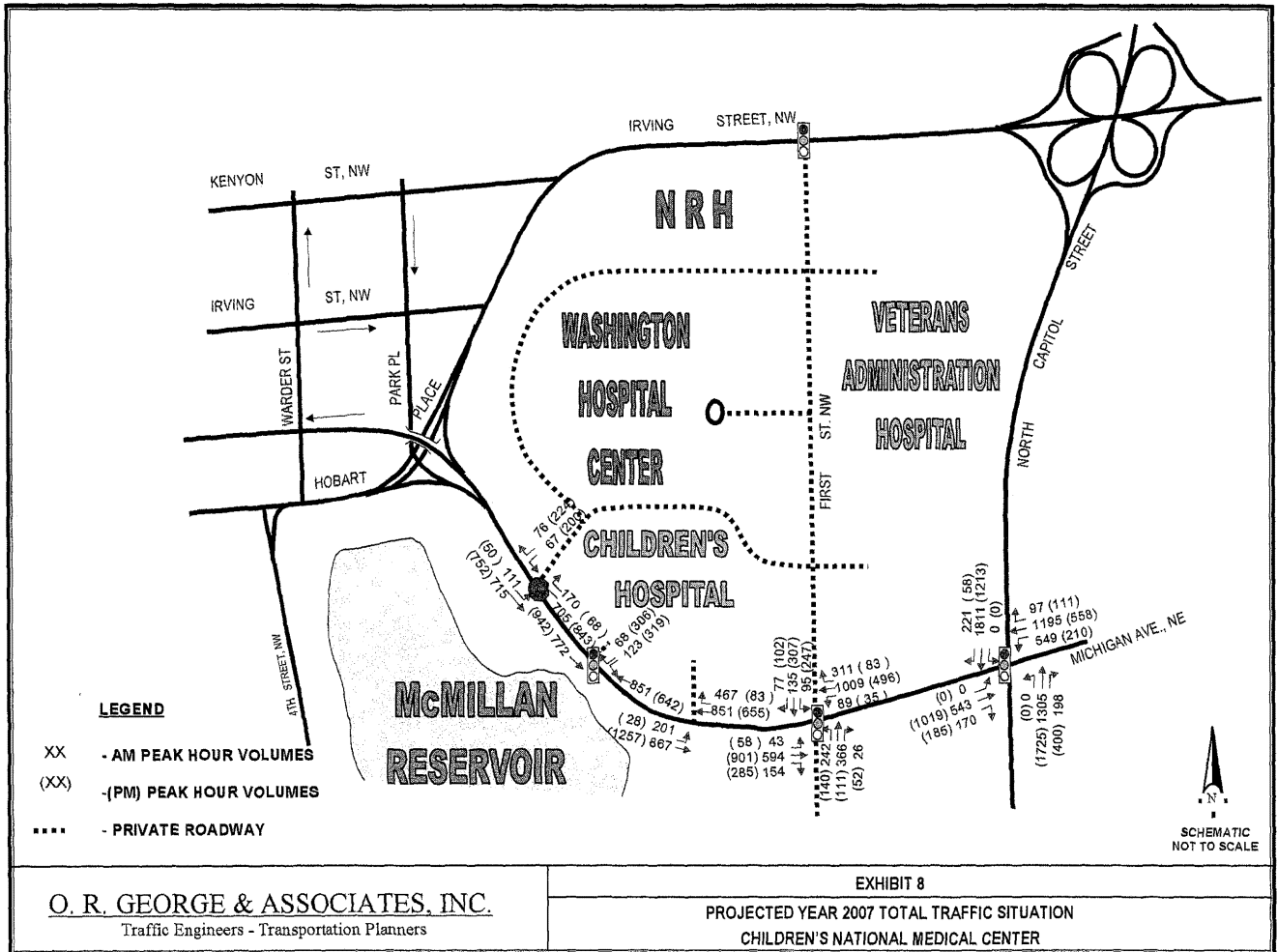
Intersection	AM Peak Hour		PM Peak Hour	
	Level of Service	Avg. Delay (Sec/Veh)*	Level of Service	Avg. Delay (Sec/Veh)*
1) Michigan Ave. at First St., NW (Signalized)	D	41.2	D	53.0
2) Michigan Ave. at Hospital Center Dr. South, NW. (Signalized Assumed)	B	11.4	C	21.8
3) Michigan Ave. at CNMC Parking Garage Entry (Unsignalized)	C	17.3	A	9.0
4) Michigan Ave. at CNMC Parking Garage Exit (Signalized)	B	11.2	C	20.8
5) North Capitol St. at Michigan Ave. (Signalized)	D	47.5	D	45.8

*Sec/Veh = Seconds per Vehicle

Source: O. R. George & Associates.







4.5 Parking and Loading Evaluation

Children's National Medical Center currently has 1,930 on-site parking spaces (1,385 employee spaces and 545 visitor spaces) and approximately 150 off-site spaces in a satellite lot along South Dakota Avenue. An additional satellite lot for employee use is scheduled to open in early August and will provide 200 spaces with a connecting shuttle bus service to the hospital. The City's parking requirements, based on the proposed zoning and land uses, are compared with the off-street parking proposed for the subject development, in Table 6 following:

TABLE 6
REQUIRED VS PROPOSED OFF-STREET PARKING

Land Use	Required Parking Supply	Proposed Parking Supply
- Hospital (1 per each bed)	280	n/a
- Medical Office Use (1 per 1,800 GSF in excess of 2,000GSF)	110	n/a
TOTAL	390	2,280

Source: DCMR Title 11 – Zoning and O. R. George & Associates.

Table 6 shows that the proposed off-street parking will exceed the City's requirements by a factor of almost six. Examination of the existing parking operations show that the available parking supply currently meets the need of CNMC. Table 7 below presents a summary of parking surveys undertaken on typical weekdays at the CNMC garage.

TABLE 7
SUMMARY OF CNMC PARKING USAGE SURVEYS

Parking Designation	Parking Capacity	Observed Usage (Typical)
Employee	1,385	95 %
Visitor	545	95 %
Satellite Lot*	150	37 %
Total	2,085	

* Only the South Dakota Lot was surveyed due to the Massachusetts Avenue Lot not having opened at the time of the survey.

Further visitor spaces could be made available if necessary in the future by moving portions of the on-site employee parking to the satellite lots, which currently are not fully utilized. In addition, the local area due to the characteristics of the roadway network and the surrounding medical/institutional uses, has limited on-street parking spaces and therefore the potential for any spillover parking from CNMC is very restricted.

With regard to the loading, the original PUD approval called for the provision of three (3) 12' x 55' loading berths with associated loading platforms in excess of 200 SF each. These loading requirements are currently provided for on-site, serve the hospital adequately and meet the requirements per the original PUD.

5.0 MITIGATION AND TRANSPORTATION DEMAND CONSIDERATIONS

5.1 Mitigation Measures - Local Area Roadways

Section 5 presented the assessment of the projected traffic situation upon build-out of the uses, which CNMC proposes. For ease of reference, Table 8 following presents the projected levels of service measured against the City's operational "standards" as typically applied to Planned Unit Development and Large Tract Review applications.

TABLE 8

Intersection	City/DDOT Capacity Standards ¹	AM Peak Hour Condition (2007)	PM Peak Hour Condition (2007)
1) Michigan Ave. at First St., NW (Signalized)	LOS D Ave. Delay: 55 Sec	D 41.2 Sec	D 53.0 Sec
2) Michigan Ave. at Hospital Center Dr. - Unsignalized	LOS D Ave. Delay: 35 Sec	F 78.5 Sec	F 236.3 Sec
- Signalized	LOS D Ave. Delay: 55 Sec	B 11.4 Sec	C 21.8 Sec
3) Michigan Ave. at CNMC Parking Garage Entry (unsignalized)	LOS D Ave. Delay: 35 Sec	C 17.3 Sec	A 9.0 Sec
4) Michigan Ave. at CNMC Parking Garage Exit (Signalized)	LOS D Ave. Delay: 55 Sec	B 11.2 Sec	C 20.8 Sec
5) North Capitol St. at Michigan Ave. (Signalized) ²	LOS D Ave. Delay: 55 Sec	D 47.5 Sec	D 45.8 Sec

¹ Delays shown refer to control delay per TRB

² This intersection was recently upgraded as part of the North Capitol St. project

Source: O. R. George & Associates.

As can be seen from the above table, adequate levels of service would be achieved at all except the following location.

- 1) **Michigan Avenue @ Hospital Center Drive, NW:** This is an intersection of a principal arterial and a private drive into the Washington Hospital Center. This study included traffic growth due to the expansion planned by MedStar Health; and the current analysis confirms the conclusion for the WHC Traffic Study that signalization of that entrance would relieve the capacity constraints that have been identified.

5.2 Transportation Demand Management Considerations

As noted in earlier sections of this report, the CNMC is a long-standing institutional establishment, whose physical development has been “phased” over a 35-year period (1970 - 2005). None of the development approvals to date have mandated off-site improvements or Transportation Demand Management (TDM) measures. In addition, the institution’s off-street parking supply is well in excess of what is required per the City’s Zoning Regulations.

CNMC currently has in place a number of TDM Measures that are designed to reduce the level of vehicle trips into the local area and its overall parking demand. These measures include the following:

- a) **Off-site/Satellite Parking Lots:** One in the 2200 block of South Dakota Avenue, NE. (150 spaces); and one in the unit block of Massachusetts Avenue NW (200 spaces). Use of these lots is free to employees and the lots are connected by shuttle bus service [See item (b) below]
- b) **Shuttle Bus Service:** This service involves 30 seat buses running between the satellite lots and the hospital. The service operates at 10-minute headways during the peak hours (6:00 – 10:00 AM) and (2:30 – 5:30 PM) and at 30-minute headways during the off-peak periods, until 8:00 PM on weekdays. CNMC also operates a separate shuttle between Brookland/CUA Metro Station and the hospital (including stops at WHC and NRH) and serves both employees and visitors.
- c) **Transit Subsidies:** CNMC currently provides Metrochek subsidies to enhance transit use by its employees. [Currently approximately 110 employees participate in this program]
- d) **Parking Lots:** CNMC charges both employees and visitors for parking at the hospital, while parking at the satellite lots (and the shuttle service) is free to both employees and visitors. This constitutes a significant incentive for use of both the off-site parking and the shuttle service.
- e) **Transportation Management:** CNMC has a designated “Transportation Manager” who coordinates the institution’s parking and transportation services.

This study finds that CNMC’s size, location and institutional character provide significant opportunity for incorporating additional TDM elements into its program. These measures are listed in Section 6.3 – Proposed Mitigation Measures. It includes minor roadway/intersection improvements that were discussed in *Section 6.1 – Mitigation/Measures – Local Area Roadways*.

5.3 Recommended Mitigation Measures

The data and analyses presented in Sections 5.1 and 5.2 as well as in earlier sections of the report have demonstrated that transportation conditions within the local area of the CNMC site are now within acceptable limits. With very “modest” physical and operational changes at the Michigan Avenue/Hospital Center Drive intersection, favorable operational conditions would be maintained upon build-out of the improvements proposed by CNMC under the current PUD application. This study considers the fact that one of the principal objectives of the PUD process is to identify measures that would constitute “*public benefits*” to the local area. Accordingly, this study recommends that CNMC consider the following measures. For convenience, they are grouped into “physical/operational” and “Transportation Demand Management” measures.

A Physical/Operational Measures

A-1: Signalization of Michigan Avenue at Hospital Center Drive: CNMC would contribute \$35,000.00 toward the \$100,000.00 stipulated by the Zoning Commission for the improvements at this location by the Washington Hospital Center. This amount would be paid at the time WHC has detailed and designed the changes, and had the necessary permits from the District Department of Transportation to implement this work.

A-2: CNMC Entrance Signage: CNMC would work with DDOT to supplement signage in the area of the Hospital's two entrances. This measure would include potential crosswalks and related signage that would enhance safety for vehicular traffic as well as for transit passengers accessing the hospital. [Note: There are Metrobus transit stops along the north and south side of Michigan Avenue abutting the site]

B Transportation Management Plan Measures

The principal objective of the TMP is to reduce the number of single-occupant vehicular work trips, particularly during the morning and afternoon peak periods. The results are the reduction of traffic congestion, vehicle miles of travel and vehicular emissions. There is currently no Federal or local legislation with similar mandates for private sector employment centers. However, it is noted that regional planning agencies such as the Metropolitan Washington Council of Governments (MW-COG) and the National Capital Planning Commission, as well as various planning and review agencies of the District of Columbia Government strongly encourage the development of such plans. The recommended measures would include the following:

B-1: Employee Transportation Coordination (ETC): CNMC would designate a specific full-time employee to be responsible for implementing and monitoring a formal Transportation Management Plan, and ensuring its effectiveness. The ETC would be accessible to employees during normal business hours, and would generally provide transit and ridesharing information. The designated employee would also have responsibility for promoting the adopted program strategies. This responsibility would include activities such as sales of transit passes, parking management, and conducting employee surveys for program monitoring and evaluation.

B-2: Parking Management: Parking management involves the strategies that are used to balance the supply and demand for parking spaces. It is one of the more powerful tools, which can be used to influence employee commuting mode choice. Elements of this strategy will include primarily parking pricing, preferential assignment of spaces for high occupancy vehicles, transportation allowances, as well as satellite parking and shuttle bus linkages.

B-3: Carpools: Basically, this arrangement calls for employees to share auto use, and is formed with a minimum of two (2) persons who commute together on a regular basis. Participants generally share common residential areas and work schedules. The ETC can be effective in promoting this strategy by providing preferential parking assignment of carpool vehicles as well as subsidies [See B-2 above]. The implementation of Diamond/HOV lanes on the regional commuting routes is a further incentive for this strategy, due to the likely reduction in employee travel times. [See also item B-9 Guaranteed Ride Home]

- B-4: Vanpools:** Under this arrangement, employees of the campus would be encouraged to share the ride to work using vans with capacities of 7-15 passengers. Options would include use of employer-owned/leased vans, employee-owned/leased vans, as well as contractor/operator-provided vans. Inducements for program participation would include subsidies and preferential parking assignments. [See also item B-9 Guaranteed Ride Home]
- B-5: Transit Services:** The CNMC Campus is favorably situated with respect to two (2) Metrorail stations, i.e., the Brookland/Catholic University and Georgia Avenue/Petworth Metrorail Stations. The adjacent WHC campus also serves as a transfer point for routes on the Metro bus system. Direct connections to the campus from the rail station is provided via WMATA Metrobus service, as well as through shuttle bus service provided by the CNMC management. CNMC would continue its shuttle bus service as well as promote public transportation use through its Metrocheck subsidies.
- B-6: Variable Work Hours:** Under this arrangement, the CNMC management will implement a work program which includes flextime, a compressed work week and staggered work hours to reduce vehicular trip making, particularly during the morning and afternoon peak periods. CNMC would investigate the feasibility of reserving a reasonable number of parking spaces for such employees in conjunction with the carpool in program. [See also item B-9 Guaranteed Ride Home]
- B-7: Institutional Coordination:** The CNMC ETC would emphasize interaction with her/his counterpart at the Washington Hospital Center and the Veterans Administration Hospital to capitalize on the potential opportunities for synergy between their respective Transportation Management Plans, as appropriate.
- B-8: Zip-car/Flex-car:** CNMC is aware that this transportation mode option is quite compatible with several elements of Transportation Demand Strategies. CNMC will investigate the feasibility of having a Zip-car/Flex-car unit within its premises, or in an alternate local location potentially serving the WHC/VA/CNMC medical triangle.
- B-9: Guaranteed Ride Home:** CNMC is aware that the Metropolitan Washington Council of Governments operates this program as part of its regional public services; and that it's provision compliments the carpool and vanpool program very well. CNMC therefore would take the necessary steps to provide the necessary "linkage" to its TMP.
- B-10: Enhanced Travel Information:** Recognizing the increased role that information technology is playing in the decision-making process of personal travel, CNMC will dedicate a page on its website to information on travel opportunities. This would detail parking opportunities, the free shuttle services, (schedules, routes), public transportation routes and schedules, etc. CNMC would also seek to provide links with the websites of public agencies and other organizations such as Metropolitan Washington Council of Governments, District Department of Transportation and various media outlets.

This study recommends that CNMC submit Transportation Management Plan “*Audit/Activity Report*” to the DDOT Transportation Policy & Planning Administration (currently headed by Mr. Kenneth G. Laden) based upon the following schedule:

- 1) Upon the initiation of the Plan (estimated as of January 1, 2007) and annually during 2007 to 2010.

Copies of the TMP Audit/Activity Reports would also be submitted to the Director of the Office of Planning. It is also proposed that DDOT would have the opportunity to comment on, and indicate further requirements of the activity reporting schedule as part of its referral on the subject PUD application.

6.0 SUMMARY OF FINDINGS AND CONCLUSION

6.1 Summary of Findings

This study has examined the potential impacts of the proposed modification to the Children's National Medical Center Planned Unit Development, in keeping with the requirements of the City's Planned Unit Development review process. The PUD process requires the Applicant to demonstrate that increased density and related elements of the proposed improvements would not adversely impact area land uses or be a "burden" to the City. To the extent that there are impacts, mitigation must be demonstrated. The study was performed in accordance with the general guidelines stipulated by the District of Columbia Department of Transportation (DDOT) Policy and Planning Administration, regarding the evaluation of the transportation impacts of development proposals. The principal findings of the study are as follows:

- a) The defined study area roadway network currently operates at acceptable Levels of Service, during both the morning and afternoon peak periods.
- b) The proposed development is favorably situated relative to public transportation facilities; and the existing Transportation Management Plan includes shuttle bus services to the nearby Metrorail Station as well as satellite employee parking lots;
- c) The design year (2007) "background" traffic conditions considered potential growth in through traffic along the key study area roadways. Based on information provided by the Office of Planning, the only background development planned for the immediate site area would be the Washington Hospital Center. The roadway network would continue to operate acceptably under the background traffic conditions taking into consideration roadway improvements conditioned as part of the WHC approval.
- d) The proposed development would generate an average of one hundred ten (110) vehicle trips during the morning and afternoon peak hours. These trips would be well distributed (directionally) resulting in minimal impacts on the study area intersections.
- e) The study area roadway network would continue to operate at acceptable Levels of Service, during the morning and afternoon peak periods, under the projected (2007) traffic conditions, including the proposed development.
- f) Although CNMC has a significant Transportation Management Plan, there are a number of improvements that have been recommended.

The hospital would continue to be provided with the existing 1,930 off-street parking spaces and three (3) 55-Ft. loading berths. The parking supply would significantly exceed the number of spaces required by the City's Zoning Regulations, and both the parking and loading would adequately satisfy the needs of the hospital.

6.2 Conclusion

Based on the foregoing data, discussions and analysis, this study has determined that the Children's National Medical Center Planned Unit Development modification can be accommodated without any appreciable adverse traffic impacts on the local area. The Transportation Management Plan provisions would also further enhance traffic operations within the local area. In particular, the shuttle bus service, which is provided free of cost to employees and visitors alike, would also continue to serve as a significant public benefit and amenity. The subject proposal should therefore satisfy the City's requirements for adequate public (transportation) facilities.

<<<<:~::~>>>>

APPENDIX

A

TRAFFIC STUDY SCOPING AGREEMENT
AND RELEVANT CORRESPONDENCE
WITH DDOT STAFF

O. R. GEORGE & ASSOCIATES, INC.

Traffic Engineers – Transportation Planners

10210 Greenbelt Road, Suite # 310 • Lanham, Maryland 20706

Tel: (301) 794-7700 • Fax: (301) 794-4400

E-mail: admin@orgengineering.com

June 26, 2006

Mr. Abdoulaye Bah, Sr. Transportation Engineer
Transportation Policy and Planning Administration
District of Columbia Department of Transportation
2000 14th Street, N.W. 7th Floor
Washington, D.C. 20009

Re: Children's National Medical Center (CNMC) - Planned Unit Development Application

Dear Mr. Bah:

Further to our recent telephone conversation, we are pleased to confirm that Children's National Medical Center has retained our firm to prepare a Transportation Impact Analysis in support of the referenced application. The purpose of this letter is to advise your office of the project background, and the key study parameters we propose to use for the study.

As background, we note that CNMC is a 7.0+ Acre property situated north of Michigan Avenue west of 1st Street in Northwest, adjacent to the Washington Hospital Center complex. The Hospital, which opened in 1977, is seeking a modification to a Planned Unit Development originally approved in 1970 and modified in 1989. The applicant proposes an increase in development density of 168,000 GSF, with the additional space programmed for expansion of the operating theatres and the hospital's neo-natal services. In order to address the requirements of the Zoning Commission, we propose to evaluate traffic conditions at the following intersections;

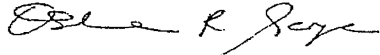
- 1) Michigan Avenue @ First Street, NW (Primary Evaluation)
- 2) Michigan Avenue @ Site Entrances (Primary Evaluation)
- 3) Michigan Avenue @ Hospital Center Drive, NW (Secondary Evaluation)
- 4) Michigan Avenue @ Park Place, NW (Secondary Evaluation)
- 5) Michigan Avenue @ North Capitol Street (Secondary Evaluation)

We will consider traffic growth and background developments in projecting future traffic conditions, in accordance with your Department's usual requirements. Please note that CNMC has in place several Transportation Management Plan measures including shuttle bus service to the Brookland/CUA Metrorail Station and the off-site parking lots. We will be working with the applicant to enhance these measures as part of the study.

Mr Abdoulaye Bah, Sr. Transportation Engineer
DDOT – Policy and Planning Administration
Children's National Medical Center PUD Application
June 26, 2006, Page 2 of 2

Please confirm that the above is in accordance with DDOT's general requirements, as well as with any specific requirements that may be applicable to the area of the site. We would also appreciate any additional information or perspective that could be useful to our study and to the application process. Thanks for your usual attention and assistance in this matter.

Sincerely,
O. R. GEORGE & ASSOCIATES, INC.



Osborne R. George
President

Cc: Ms. Sharlene Reed (DDOT Ward 5 Planner)
Ms. Jody Burdell (CNMC)
Christine Moseley Shiker, Esquire (Holland & Knight, LLP)
Mr. Patrick Duke (KLMK Group, LLC)

APPENDIX

B

TRAFFIC TURNING MOVEMENT COUNT
SUMMARIES - EXISTING TRAFFIC
SITUATION

O.R.George & Associates

10210 Greenbelt Road, Suite 310

Lanham, MD 20706 - 2218

Tel: (301) 974-7700 Fax: (301) 794-4400

Counted by:

Board :

City/County:

Weather :

File Name : 1ST@MIC

Site Code : 23231908

Start Date : 05/30/2006

Page No : 1

Groups Printed- 1 - Passenger Vehicles - 2 - Trucks - 3 - Buses

End Time	1ST STREET From North					MICHIGAN AVENUE From East					1ST STREET From South					MICHIGAN AVENUE From West					Int. Total
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	
07:15	16	20	15	3	54	56	160	11	11	238	5	92	60	0	157	17	78	7	0	102	551
07:30	12	20	12	8	52	79	171	17	6	273	3	94	55	0	152	20	102	10	0	132	609
07:45	18	33	24	12	87	74	164	25	13	276	9	111	42	0	162	44	145	9	0	198	723
08:00	28	34	33	11	106	90	235	20	6	351	5	83	66	0	154	46	134	12	0	192	803
Total	74	107	84	34	299	299	730	73	36	1138	22	380	223	0	625	127	459	38	0	624	2686
08:15	16	29	17	3	65	77	214	25	13	329	5	89	60	1	155	30	144	9	0	183	732
08:30	15	35	21	9	80	70	247	19	18	354	7	72	55	0	134	39	132	8	0	179	747
08:45	24	29	27	5	85	50	219	33	8	310	5	69	58	1	133	36	136	8	0	180	708
09:00	18	27	28	11	84	56	198	23	21	298	13	63	49	0	125	31	146	8	0	185	692
Total	73	120	93	28	314	253	878	100	60	1291	30	293	222	2	547	136	558	33	0	727	2879
14:45	16	41	47	6	110	24	129	6	5	164	12	49	52	0	113	21	103	8	0	132	519
15:00	18	56	49	2	125	39	135	5	1	180	13	55	48	0	116	28	140	5	3	176	597
Total	34	97	96	8	235	63	264	11	6	344	25	104	100	0	229	49	243	13	3	308	1116
15:15	30	51	61	9	151	36	120	8	11	175	14	41	40	0	95	34	156	9	0	199	620
15:30	22	51	55	7	135	30	123	11	15	179	10	41	36	0	87	27	156	6	0	189	590
15:45	24	76	73	12	185	21	95	5	24	145	15	37	33	0	85	46	196	5	0	247	662
16:00	17	85	62	11	175	35	112	9	12	168	8	43	28	0	79	56	190	7	0	253	675
Total	93	263	251	39	646	122	450	33	62	667	47	162	137	0	346	163	698	27	0	888	2547
16:15	25	102	74	3	204	24	84	12	11	131	9	25	29	1	64	43	159	10	0	212	611
16:30	29	80	58	15	182	22	100	12	5	139	9	30	29	0	68	51	200	10	0	261	650
16:45	21	99	79	9	208	17	94	6	17	134	13	24	28	0	65	64	196	12	0	272	679
17:00	21	76	60	12	169	24	109	14	15	162	15	30	39	0	84	66	177	12	1	256	671
Total	96	357	271	39	763	87	387	44	48	566	46	109	125	1	281	224	732	44	1	1001	2611
17:15	28	60	54	7	149	16	120	6	9	151	15	25	33	0	73	38	175	13	0	226	599
17:30	22	63	54	6	145	26	107	9	8	150	9	29	37	0	75	90	224	11	0	325	695
17:45	26	35	52	7	120	17	111	11	7	146	18	32	46	0	96	42	205	3	0	250	612
18:00	11	47	53	7	118	20	110	20	5	155	10	27	47	0	84	49	185	13	0	247	604
Total	87	205	213	27	532	79	448	46	29	602	52	113	163	0	328	219	789	40	0	1048	2510
Grand Total	457	1149	1008	175	2789	903	3157	307	241	4608	222	1161	970	3	2356	918	3479	195	4	4596	14349
Apprch %	16.4	41.2	36.1	6.3		19.6	68.5	6.7	5.2		9.4	49.3	41.2	0.1		20.0	75.7	4.2	0.1		
Total %	3.2	8.0	7.0	1.2	19.4	6.3	22.0	2.1	1.7	32.1	1.5	8.1	6.8	0.0	16.4	6.4	24.2	1.4	0.0	32.0	

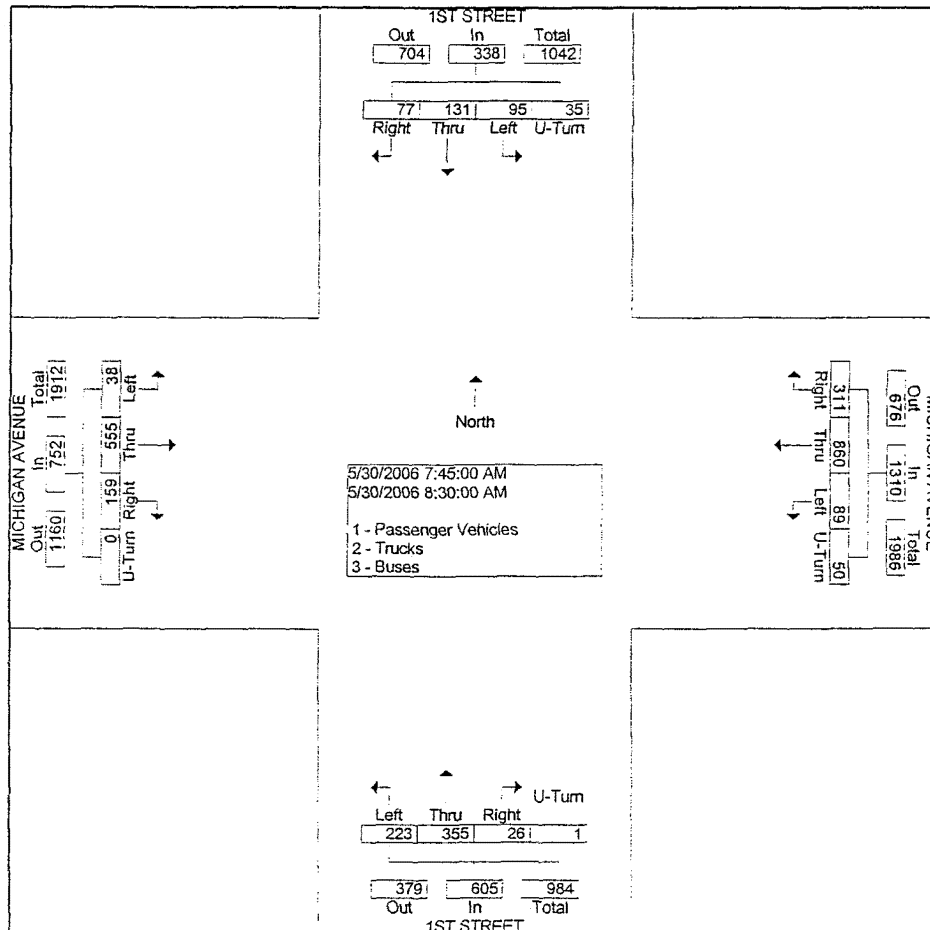
B-1

O.R.George & Associates
 10210 Greenbelt Road, Suite 310
 Lanham, MD 20706 - 2218
 Tel: (301) 974-7700 Fax: (301) 794-4400

Counted by:
 Board :
 City/County:
 Weather :

File Name : 1ST@MIC
 Site Code : 23231908
 Start Date : 05/30/2006
 Page No : 2

	1ST STREET From North					MICHIGAN AVENUE From East					1ST STREET From South					MICHIGAN AVENUE From West					
End Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour From 07:15 to 11:45 - Peak 1 of 1																					
Intersection	07:45																				
Volume	77	131	95	35	338	311	860	89	50	1310	26	355	223	1	605	159	555	38	0	752	3005
Percent	22.8	38.8	28.1	10.4		23.7	65.6	6.8	3.8		4.3	58.7	36.9	0.2		21.1	73.8	5.1	0.0		
Volume	77	131	95	35	338	311	860	89	50	1310	26	355	223	1	605	159	555	38	0	752	3005
Volume	28	34	33	11	106	90	235	20	6	351	5	83	66	0	154	46	134	12	0	192	803
Peak Factor																					0.936
High Int.	08:00					08:30					07:45					07:45					
Volume	28	34	33	11	106	70	247	19	18	354	9	111	42	0	162	44	145	9	0	198	
Peak Factor	0.797					0.925					0.934					0.949					

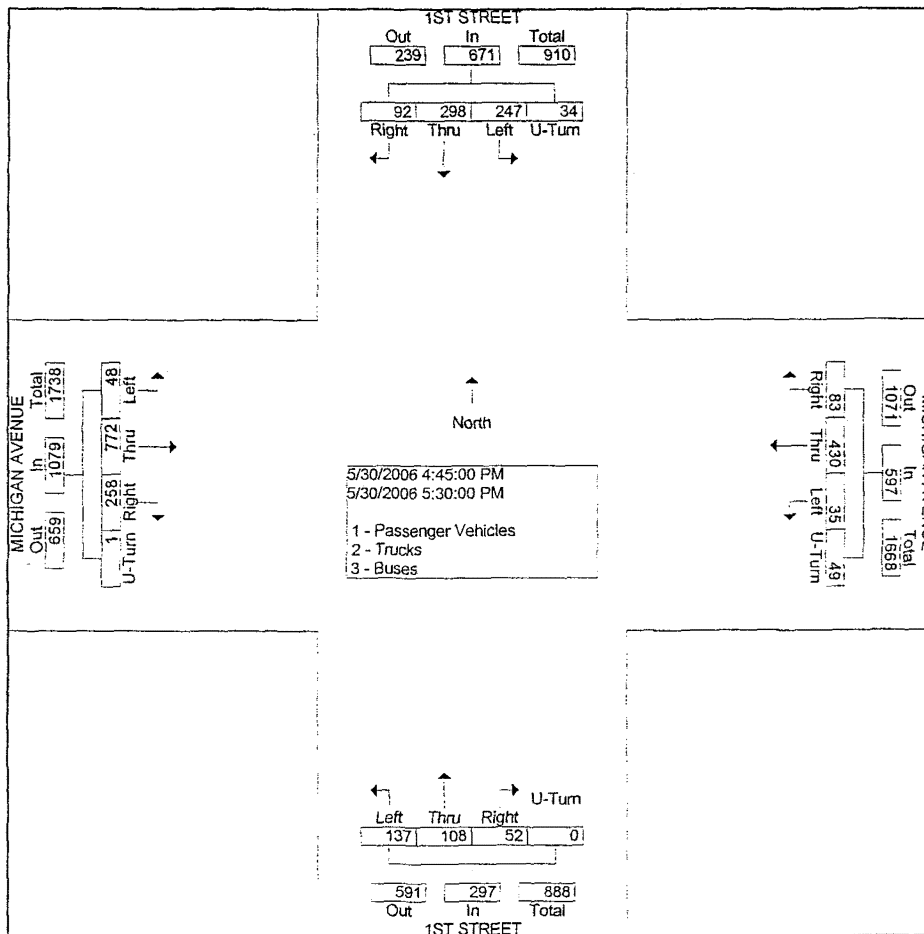


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Counted by:
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 Weather :

File Name : 1ST@MIC
 Site Code : 23231908
 Start Date : 05/30/2006
 Page No : 3

	1ST STREET From North					MICHIGAN AVENUE From East					1ST STREET From South					MICHIGAN AVENUE From West									
End Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total				
Peak Hour From 12:00 to 18:00 - Peak 1 of 1																									
Intersection	16:45																								
Volume	92	298	247	34	671	83	430	35	49	597	52	108	137	0	297	258	772	48	1	1079	2644				
Percent	13.7	44.4	36.8	5.1		13.9	72.0	5.9	8.2		17.5	36.4	46.1	0.0		23.9	71.5	4.4	0.1						
Volume	92	298	247	34	671	83	430	35	49	597	52	108	137	0	297	258	772	48	1	1079	2644				
Volume	22	63	54	6	145	26	107	9	8	150	9	29	37	0	75	90	224	11	0	325	695				
Peak Factor																					0.951				
High Int.	16:45					17:00					17:00					17:30									
Volume	21	99	79	9	208	24	109	14	15	162	15	30	39	0	84	90	224	11	0	325					
Peak Factor	0.806										0.921					0.884					0.830				



O.R.George & Associates

10210 Greenbelt Road, Suite 310

Lanham, MD 20706 - 2218

Tel: (301) 974-7700 Fax: (301) 794-4400

File Name : CNMC-I-1

Site Code : 22242239

Start Date : 06/22/2006

Page No : 1

Counted by:

Board :

City/County:

Weather :

Groups Printed- Passenger Vehicles - Trucks - Buses

End Time	From North					Michigan Avenue - CNMC Entry From East					From South					Michigan Avenue - CNMC Entry From West					Int. Total
	Righ t	Thru	Left	U-Turn	App. Total	Righ t	Thru	Left	U-Turn	App. Total	Righ t	Thru	Left	U-Turn	App. Total	Righ t	Thru	Left	U-Turn	App. Total	
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
06:15	0	0	0	0	0	14	0	0	0	14	0	0	0	0	0	0	0	6	0	6	20
06:30	0	0	0	0	0	38	0	0	0	38	0	0	0	0	0	0	0	16	0	16	54
06:45	0	0	0	0	0	103	0	0	0	103	0	0	0	0	0	0	0	21	0	21	124
07:00	0	0	0	0	0	151	0	0	0	151	0	0	0	0	0	0	0	55	0	55	206
Total	0	0	0	0	0	306	0	0	0	306	0	0	0	0	0	0	0	98	0	98	404
07:15	0	0	0	0	0	80	0	0	0	80	0	0	0	0	0	0	0	29	0	29	109
07:30	0	0	0	0	0	79	0	0	0	79	0	0	0	0	0	0	0	26	0	26	105
07:45	0	0	0	0	0	98	0	0	0	98	0	0	0	0	0	0	0	39	0	39	137
08:00	0	0	0	0	0	116	0	0	0	116	0	0	0	0	0	0	0	56	0	56	172
Total	0	0	0	0	0	373	0	0	0	373	0	0	0	0	0	0	0	150	0	150	523
08:15	0	0	0	0	0	102	0	0	0	102	0	0	0	0	0	0	0	37	0	37	139
08:30	0	0	0	0	0	84	0	0	0	84	0	0	0	0	0	0	0	41	0	41	125
08:45	0	0	0	0	0	80	0	0	0	80	0	0	0	0	0	0	0	24	0	24	104
09:00	0	0	0	0	0	88	0	0	0	88	0	0	0	0	0	0	0	31	0	31	119
Total	0	0	0	0	0	354	0	0	0	354	0	0	0	0	0	0	0	133	0	133	487
09:15	0	0	0	0	0	74	0	0	0	74	0	0	0	0	0	0	0	29	0	29	103
09:30	0	0	0	0	0	71	0	0	0	71	0	0	0	0	0	0	0	19	0	19	90
09:45	0	0	0	0	0	44	0	0	0	44	0	0	0	0	0	0	0	24	0	24	68
10:00	0	0	0	0	0	50	0	0	0	50	0	0	0	0	0	0	0	17	0	17	67
Total	0	0	0	0	0	239	0	0	0	239	0	0	0	0	0	0	0	89	0	89	328
10:15	0	0	0	0	0	33	0	0	0	33	0	0	0	0	0	0	0	17	0	17	50
10:30	0	0	0	0	0	30	0	0	0	30	0	0	0	0	0	0	0	15	0	15	45
10:45	0	0	0	0	0	42	0	0	0	42	0	0	0	0	0	0	0	17	0	17	59
11:00	0	0	0	0	0	58	0	0	0	58	0	0	0	0	0	0	0	10	0	10	68
Total	0	0	0	0	0	163	0	0	0	163	0	0	0	0	0	0	0	59	0	59	222
11:15	0	0	0	0	0	27	0	0	0	27	0	0	0	0	0	0	0	13	0	13	40
11:30	0	0	0	0	0	21	0	0	0	21	0	0	0	0	0	0	0	10	0	10	31
11:45	0	0	0	0	0	34	0	0	0	34	0	0	0	0	0	0	0	8	0	8	42
12:00	0	0	0	0	0	33	0	0	0	33	0	0	0	0	0	0	0	12	0	12	45
Total	0	0	0	0	0	115	0	0	0	115	0	0	0	0	0	0	0	43	0	43	158
*** BREAK ***																					
14:15	0	0	0	0	0	15	0	0	0	15	0	0	0	0	0	0	0	2	0	2	17
14:30	0	0	0	0	0	24	0	0	0	24	0	0	0	0	0	0	0	10	0	10	34
14:45	0	0	0	0	0	30	0	0	0	30	0	0	0	0	0	0	0	10	0	10	40
15:00	0	0	0	0	0	41	0	0	0	41	0	0	0	0	0	0	0	9	0	9	50
Total	0	0	0	0	0	110	0	0	0	110	0	0	0	0	0	0	0	31	0	31	141
15:15	0	0	0	0	0	32	0	0	0	32	0	0	0	0	0	0	0	13	0	13	45
15:30	0	0	0	0	0	32	0	0	0	32	0	0	0	0	0	0	0	10	0	10	42
15:45	0	0	0	0	0	17	0	0	0	17	0	0	0	0	0	0	0	12	0	12	29
16:00	0	0	0	0	0	16	0	0	0	16	0	0	0	0	0	0	0	11	0	11	27
Total	0	0	0	0	0	97	0	0	0	97	0	0	0	0	0	0	0	46	0	46	143
16:15	0	0	0	0	0	13	0	0	0	13	0	0	0	0	0	0	0	9	0	9	22
16:30	0	0	0	0	0	24	0	0	0	24	0	0	0	0	0	0	0	5	0	5	29
16:45	0	0	0	0	0	15	0	0	0	15	0	0	0	0	0	0	0	7	0	7	22
17:00	0	0	0	0	0	16	0	0	0	16	0	0	0	0	0	0	0	7	0	7	23
Total	0	0	0	0	0	68	0	0	0	68	0	0	0	0	0	0	0	28	0	28	96
17:15	0	0	0	0	0	17	0	0	0	17	0	0	0	0	0	0	0	5	0	5	22
17:30	0	0	0	0	0	17	0	0	0	17	0	0	0	0	0	0	0	8	0	8	25
17:45	0	0	0	0	0	10	0	0	0	10	0	0	0	0	0	0	0	4	0	4	14
18:00	0	0	0	0	0	14	0	0	0	14	0	0	0	0	0	0	0	8	0	8	22
Total	0	0	0	0	0	58	0	0	0	58	0	0	0	0	0	0	0	25	0	25	83

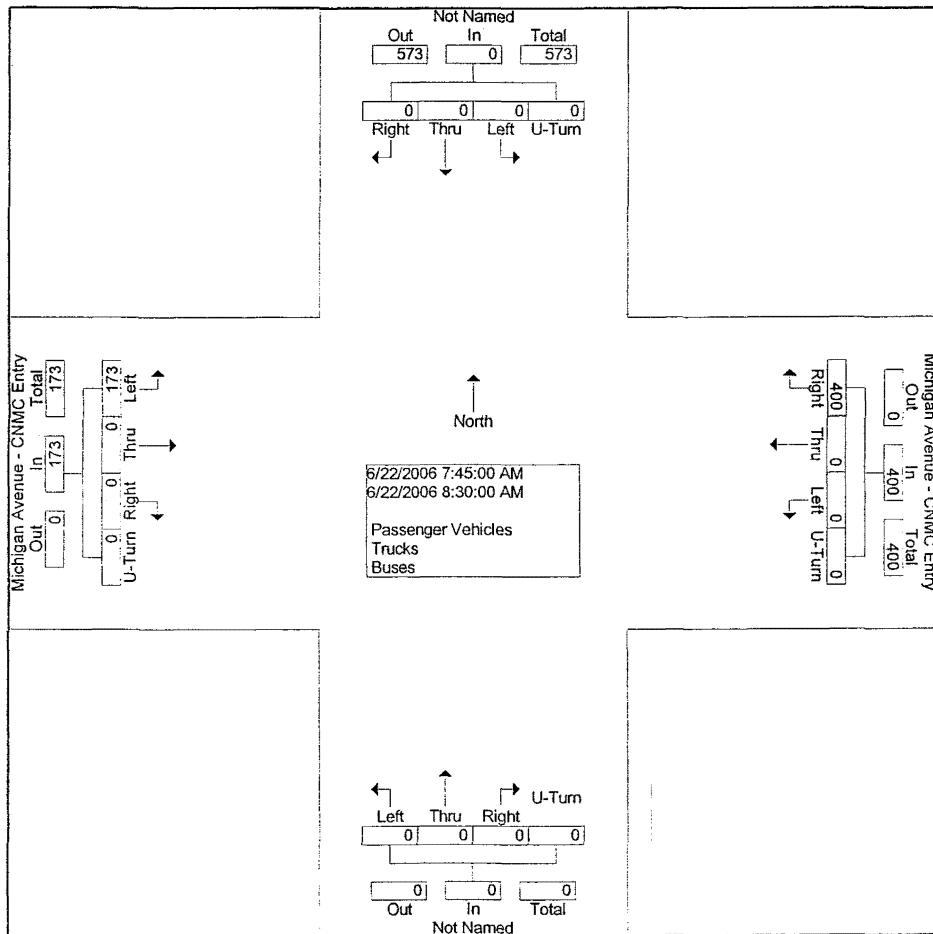
B-4

18:15	0	0	0	0	0	24	0	0	0	24	0	0	0	0	0	0	0	1	0	1	25
18:30	0	0	0	0	0	20	0	0	0	20	0	0	0	0	0	0	0	6	0	6	26
18:45	0	0	0	0	0	36	0	0	0	36	0	0	0	0	0	0	0	9	0	9	45
19:00	0	0	0	0	0	64	0	0	0	64	0	0	0	0	0	0	0	15	0	15	79
Total	0	0	0	0	0	144	0	0	0	144	0	0	0	0	0	0	0	31	0	31	175
19:15	0	0	0	0	0	20	0	0	0	20	0	0	0	0	0	0	0	4	0	4	24
19:30	0	0	0	0	0	17	0	0	0	17	0	0	0	0	0	0	0	5	0	5	22
19:45	0	0	0	0	0	26	0	0	0	26	0	0	0	0	0	0	0	4	0	4	30
20:00	0	0	0	0	0	16	0	0	0	16	0	0	0	0	0	0	0	6	0	6	22
Total	0	0	0	0	0	79	0	0	0	79	0	0	0	0	0	0	0	19	0	19	98
Grand Total	0	0	0	0	0	2106	0	0	0	2106	0	0	0	0	0	0	0	752	0	752	2858
Apprch %	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	100.0	
Total %	0.0	0.0	0.0	0.0	0.0	73.7	0.0	0.0	0.0	73.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	26.3	0.0	26.3	

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 Tel: (301) 974-7700 Fax: (301) 794-4400

File Name : CNMC-I-1
 Site Code : 22242239
 Start Date : 06/22/2006
 Page No : 3

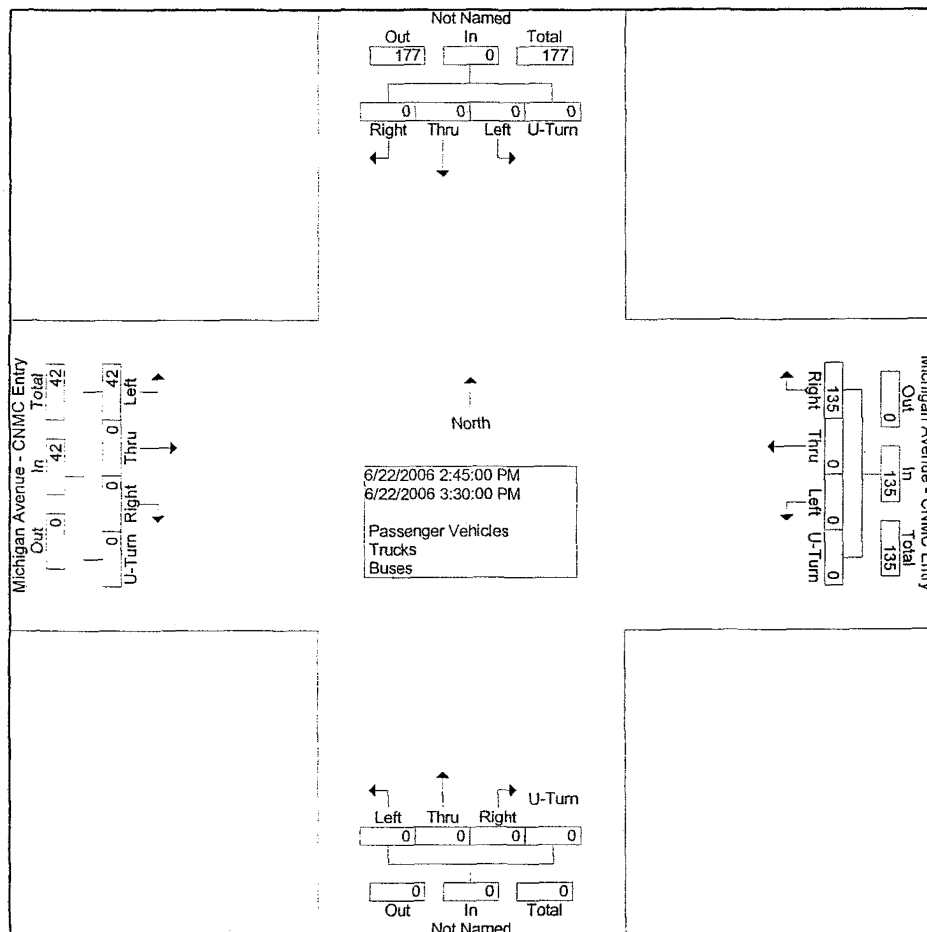
	From North					Michigan Avenue - CNMC Entry From East					From South					Michigan Avenue - CNMC Entry From West					
End Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour From 06:15 to 11:45 - Peak 1 of 1																					
Intersection	07:45																				
Volume	0	0	0	0	0	400	0	0	0	400	0	0	0	0	0	0	0	173	0	173	573
Percent	0.0	0.0	0.0	0.0		100.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	100.0	0.0		
Volume	0	0	0	0	0	400	0	0	0	400	0	0	0	0	0	0	0	173	0	173	573
Volume	0	0	0	0	0	116	0	0	0	116	0	0	0	0	0	0	0	56	0	56	172
Peak Factor																					0.833
High Int.	6:00:00 AM					08:00					6:00:00 AM					08:00					
Volume	0	0	0	0	0	116	0	0	0	116	0	0	0	0	0	0	0	56	0	56	
Peak Factor						0.862										0.772					



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File Name : CNMC-I-1
 Site Code : 22242239
 Start Date : 06/22/2006
 Page No : 4

	From North					Michigan Avenue - CNMC Entry From East					From South					Michigan Avenue - CNMC Entry From West					
End Time	Righ t	Thru	Left	U-Turn	App. Total	Righ t	Thru	Left	U-Turn	App. Total	Righ t	Thru	Left	U-Turn	App. Total	Righ t	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour From 12:00 to 20:00 - Peak 1 of 1																					
Intersection 14:45																					
Volume	0	0	0	0	0	135	0	0	0	135	0	0	0	0	0	0	0	42	0	42	177
Percent	0.0	0.0	0.0	0.0		100.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	100.0	0.0		
Volume	0	0	0	0	0	135	0	0	0	135	0	0	0	0	0	0	0	42	0	42	177
Volume	0	0	0	0	0	41	0	0	0	41	0	0	0	0	0	0	0	9	0	9	50
Peak Factor																					0.885
High Int.						15:00					15:15										
Volume	0	0	0	0	0	41	0	0	0	41	0	0	0	0	0	0	0	13	0	13	
Peak Factor										0.823										0.808	



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Counted by:
 Board :
 City/County:
 Weather :

File Name : CNMC-O-1
 Site Code : 22231908
 Start Date : 06/22/2006
 Page No : 1

Groups Printed- Passenger Vehicles - Trucks - Buses

End Time	Hospital Exit From North					From East					From South					From West					Int. Total
	Righ t	Thru	Left	U-Turn	App. Total	Righ t	Thru	Left	U-Turn	App. Total	Righ t	Thru	Left	U-Turn	App. Total	Righ t	Thru	Left	U-Turn	App. Total	
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
06:15	2	0	5	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
06:30	3	0	6	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
06:45	5	0	14	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19
07:00	10	0	11	0	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21
Total	20	0	36	0	56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	56
07:15	7	0	14	0	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21
07:30	11	0	23	0	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34
07:45	18	0	46	0	64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	64
08:00	15	0	29	0	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	44
Total	51	0	112	0	163	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	163
08:15	9	0	13	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22
08:30	9	0	21	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30
08:45	11	0	12	0	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23
09:00	5	0	25	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30
Total	34	0	71	0	105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	105
09:15	7	0	19	0	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26
09:30	10	0	16	0	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26
09:45	17	0	17	0	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34
10:00	9	0	8	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17
Total	43	0	60	0	103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	103
10:15	5	0	7	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
10:30	18	0	18	0	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36
10:45	10	0	30	0	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40
11:00	12	0	21	0	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33
Total	45	0	76	0	121	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	121
11:15	8	0	27	0	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35
11:30	9	0	28	0	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37
11:45	15	0	34	0	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49
12:00	18	0	25	0	43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43
Total	50	0	114	0	164	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	164
*** BREAK ***																					
14:15	26	0	29	0	55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	55
14:30	18	0	28	0	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	46
14:45	16	0	45	0	61	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	61
15:00	12	0	36	0	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	48
Total	72	0	138	0	210	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	210
15:15	22	0	45	0	67	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	67
15:30	23	0	49	0	72	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	72
15:45	49	0	62	0	111	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	111
16:00	22	2	42	0	66	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	66
Total	116	2	198	0	316	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	316
16:15	39	0	39	0	78	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	78
16:30	31	0	39	0	70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70
16:45	56	0	68	0	124	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	124
17:00	58	0	47	0	105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	105
Total	184	0	193	0	377	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	377
17:15	82	0	94	0	176	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	176
17:30	62	0	71	0	133	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	133
17:45	49	0	61	0	110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	110
18:00	32	0	42	0	74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	74
Total	225	0	268	0	493	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	493

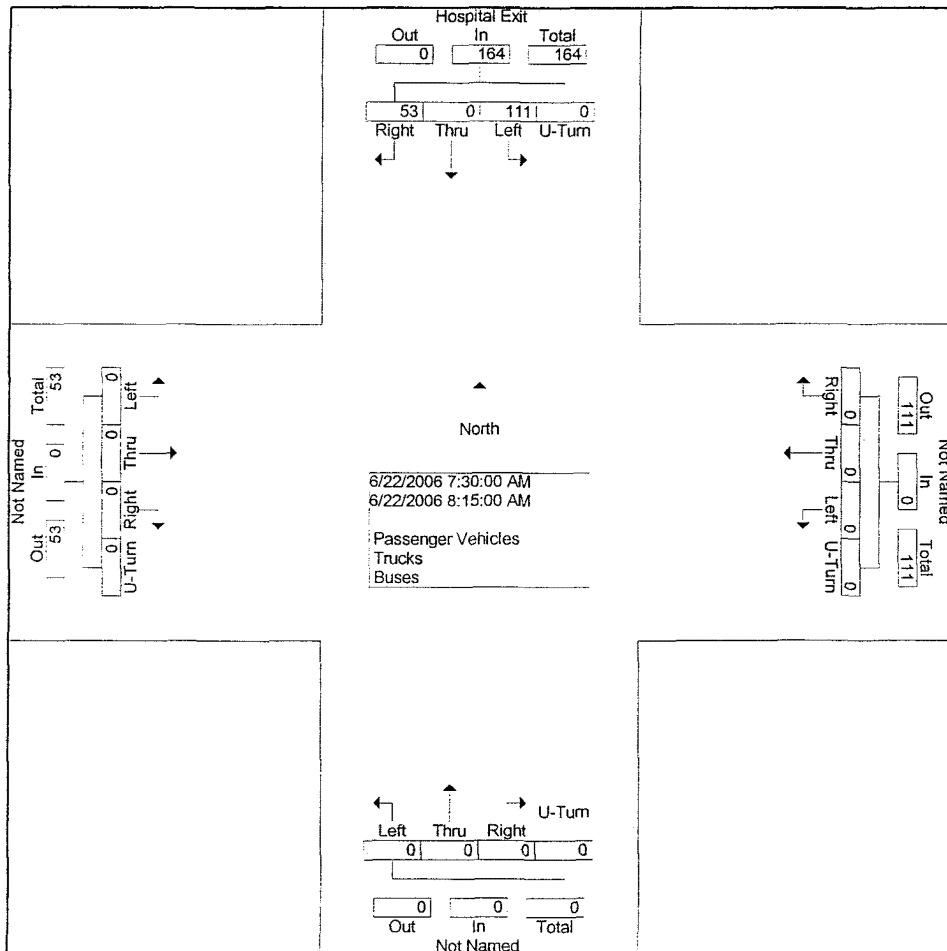
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18:15	30	0	52	0	82	0	0	0	0	0	0	0	0	0	0	0	0	0	0	82
18:30	27	0	31	0	58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	58
18:45	29	0	34	0	63	0	0	0	0	0	0	0	0	0	0	0	0	0	0	63
19:00	18	0	30	0	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	48
Total	104	0	147	0	251	0	0	0	0	0	0	0	0	0	0	0	0	0	0	251
19:15	17	0	33	0	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50
19:30	16	0	49	0	65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	65
19:45	20	0	42	0	62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	62
20:00	13	0	38	0	51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	51
Total	66	0	162	0	228	0	0	0	0	0	0	0	0	0	0	0	0	0	0	228
Grand Total	101	2	157	0	2587	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2587
	0		5																	
Apprch %	39.0	0.1	60.9	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total %	39.0	0.1	60.9	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

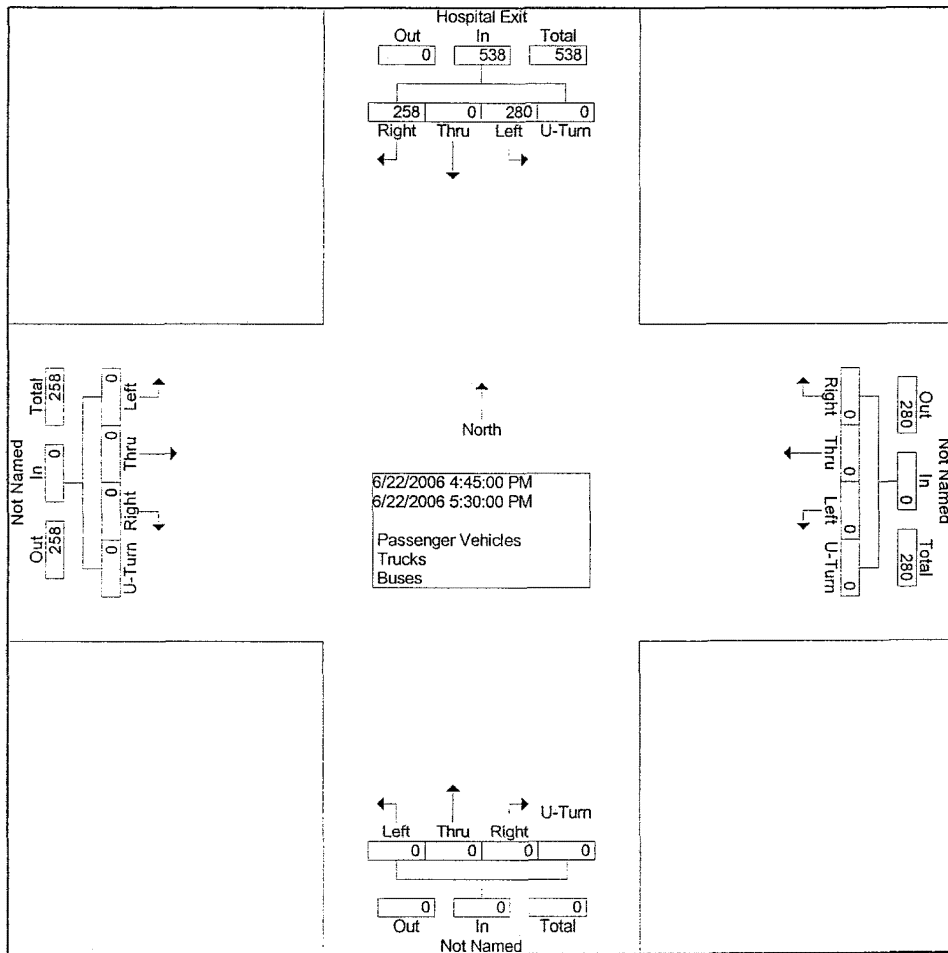
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File Name : CNMC-O~1
 Site Code : 22231908
 Start Date : 06/22/2006
 Page No : 3

	Hospital Exit From North					From East					From South					From West					Int. Total
End Time	Right t	Thru	Left	U-Turn	App. Total	Right t	Thru	Left	U-Turn	App. Total	Right t	Thru	Left	U-Turn	App. Total	Right t	Thru	Left	U-Turn	App. Total	
Peak Hour From 06:15 to 11:45 - Peak 1 of 1																					
Intersection	07:30																				
Volume	53	0	111	0	164	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	164
Percent	32.3	0.0	67.7	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		
Volume	53	0	111	0	164	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	164
Volume	18	0	46	0	64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	64
Peak Factor																					0.641
High Int.	07:45					6:00:00 AM					6:00:00 AM					6:00:00 AM					
Volume	18	0	46	0	64																
Peak Factor						0.641															



	Hospital Exit From North					From East					From South					From West					Int Total
End Time	Righ t	Thru	Left	U- Turn	App. Total	Righ t	Thru	Left	U- Turn	App. Total	Righ t	Thru	Left	U- Turn	App. Total	Righ t	Thru	Left	U- Turn	App. Total	
Peak Hour From 12:00 to 20:00 - Peak 1 of 1																					
Intersection	16:45																				
Volume	258	0	280	0	538	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	538
Percent	48.0	0.0	52.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		
Volume	258	0	280	0	538	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	538
Volume	82	0	94	0	176	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	176
Peak Factor																					0.764
High Int.	17:15																				
Volume	82	0	94	0	176																
Peak Factor					0.764																



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Counted by: ORGA-AL

Board : D4-1908

City/County: Washington, D.C.

Weather : Hot/Sunny/Dry

File Name : HCD@MICH

Site Code : 28231607

Start Date : 06/29/2006

Page No : 1

Groups Printed- Passenger Vehicles - Trucks - Buses

End Time	Hospital Center Drive, N.W. From North				Michigan Avenue, N.W. From East				Michigan Avenue, N.W. From West				Int. Total
	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	
07:15	8	2	0	10	30	116	0	146	97	25	0	122	278
07:30	8	8	0	16	17	123	0	140	122	34	0	156	312
07:45	29	20	0	49	15	158	0	173	123	33	0	156	378
08:00	14	10	0	24	21	159	0	180	174	30	0	204	408
Total	59	40	0	99	83	556	0	639	516	122	0	638	1376
08:15	13	8	0	21	20	171	0	191	177	22	0	199	411
08:30	10	9	0	19	14	182	0	196	193	21	0	214	429
08:45	8	6	0	14	11	150	0	161	170	15	0	185	360
09:00	6	7	0	13	10	141	0	151	165	14	0	179	343
Total	37	30	0	67	55	644	0	699	705	72	0	777	1543
16:15	43	28	0	71	11	156	0	167	162	14	0	176	414
16:30	35	25	0	60	12	174	0	186	180	10	0	190	436
16:45	49	26	0	75	16	170	0	186	169	8	0	177	438
17:00	35	11	0	46	18	216	0	234	191	8	0	199	479
Total	162	90	0	252	57	716	0	773	702	40	0	742	1767
17:15	45	18	0	63	17	215	0	232	186	14	0	200	495
17:30	28	19	0	47	7	185	0	192	185	8	0	193	432
17:45	22	16	0	38	5	173	0	178	201	6	0	207	423
18:00	19	9	0	28	7	191	0	198	191	7	0	198	424
Total	114	62	0	176	36	764	0	800	763	35	0	798	1774
Grand Total	372	222	0	594	231	2680	0	2911	2686	269	0	2955	6460
Apprch %	62.6	37.4	0.0		7.9	92.1	0.0		90.9	9.1	0.0		
Total %	5.8	3.4	0.0	9.2	3.6	41.5	0.0	45.1	41.6	4.2	0.0	45.7	

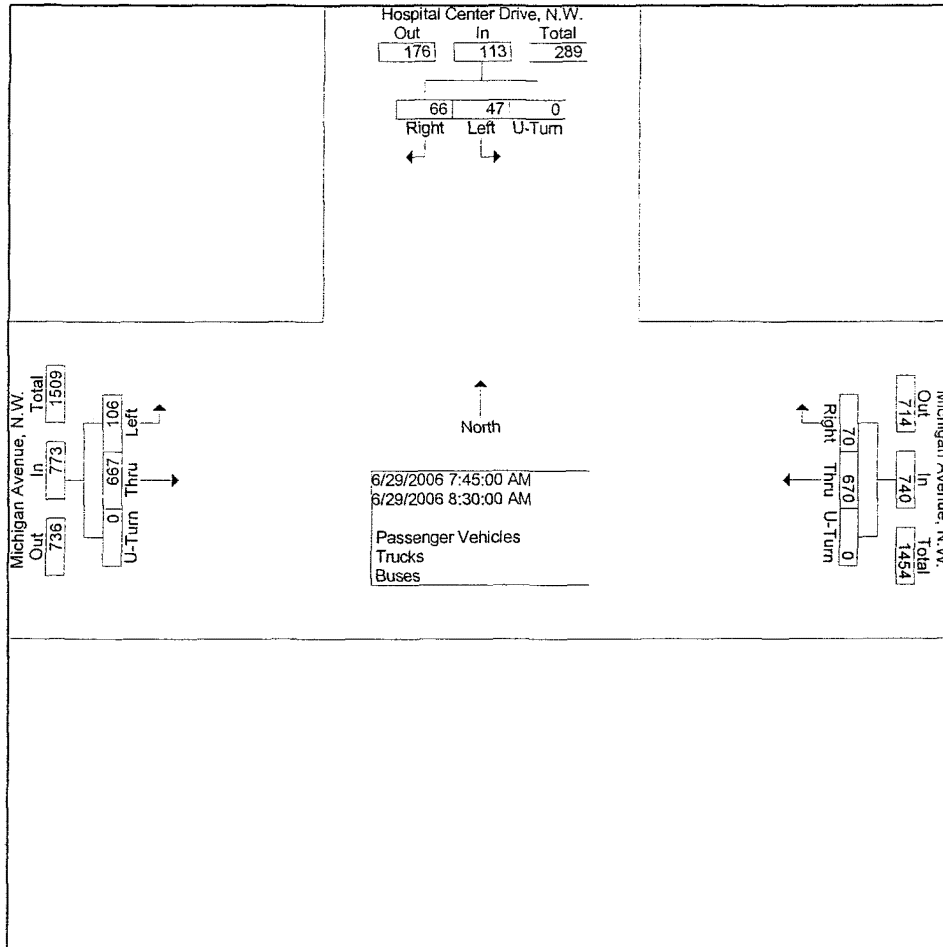
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Counted by: ORGA-AL
 Board : D4-1908
 City/County: Washington, D.C.
 Weather : Hot/Sunny/Dry

File Name : HCD@MICH
 Site Code : 28231607
 Start Date : 06/29/2006
 Page No : 2

	Hospital Center Drive, N.W.				Michigan Avenue, N.W.				Michigan Avenue, N.W.				
	From North				From East				From West				
End Time	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour From 07:15 to 11:45 - Peak 1 of 1													
Intersection 07:45													
Volume	66	47	0	113	70	670	0	740	667	106	0	773	1626
Percent	58.4	41.6	0.0		9.5	90.5	0.0		86.3	13.7	0.0		
Volume	66	47	0	113	70	670	0	740	667	106	0	773	1626
Volume	10	9	0	19	14	182	0	196	193	21	0	214	429
Peak Factor													0.948
High Int. 07:45					08:30				08:30				
Volume	29	20	0	49	14	182	0	196	193	21	0	214	
Peak Factor				0.577				0.944				0.903	



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Counted by: ORGA-AL

Board : D4-1908

City/County: Washington, D.C.

Weather : Hot/Sunny/Dry

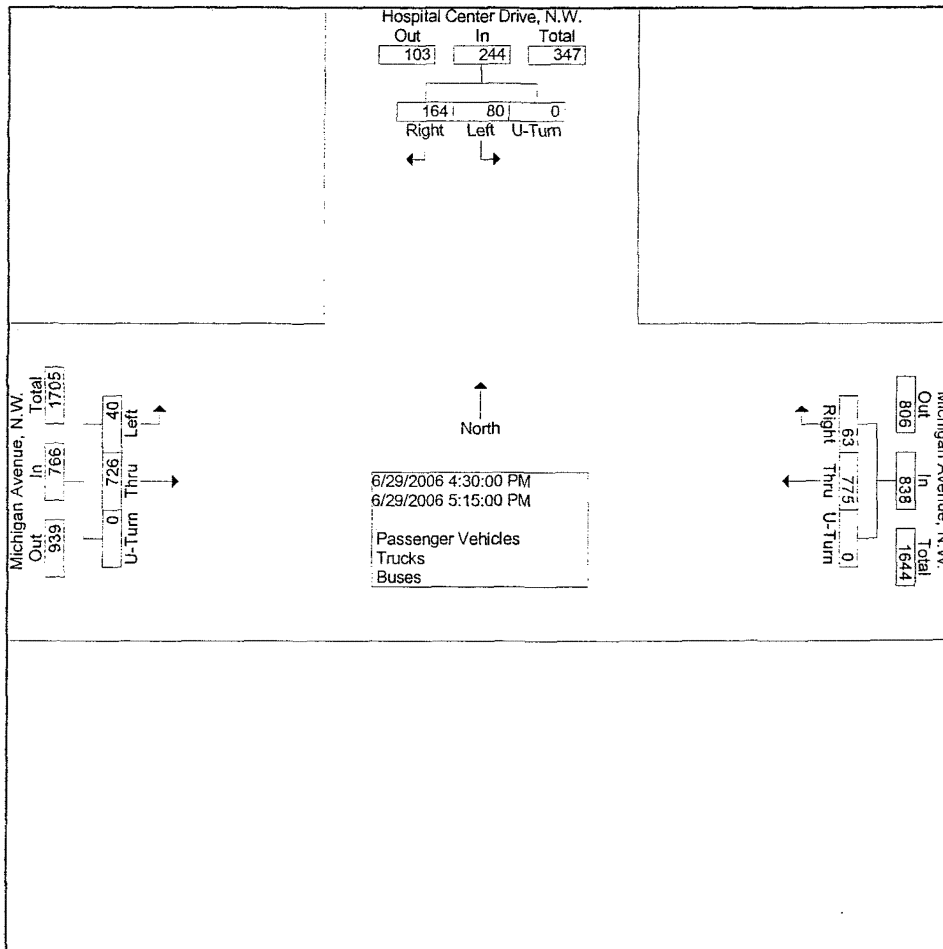
File Name : HCD@MICH

Site Code : 28231607

Start Date : 06/29/2006

Page No : 3

	Hospital Center Drive, N.W.				Michigan Avenue, N.W.				Michigan Avenue, N.W.					
	From North				From East				From West					
End Time	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total	
Peak Hour From 12:00 to 18:00 - Peak 1 of 1														
Intersection	16:30												0.933	
Volume	164	80	0	244	63	775	0	838	726	40	0	766		1848
Percent	67.2	32.8	0.0		7.5	92.5	0.0		94.8	5.2	0.0			
Volume	164	80	0	244	63	775	0	838	726	40	0	766		1848
Volume	45	18	0	63	17	215	0	232	186	14	0	200		495
Peak Factor														
High Int.	16:45				17:00				17:15					
Volume	49	26	0	75	18	216	0	234	186	14	0	200		
Peak Factor				0.813				0.895				0.958		



APPENDIX

C

CAPACITY ANALYSIS WORKSHEETS -
EXISTING TRAFFIC SITUATION

SHORT REPORT

General Information						Site Information					
Analyst	ORGA -IJB					Intersection	MICHIGAN AVE@1ST ST				
Agency or Co.	C.R. GEORGE & ASSOCIATES, INC					Area Type	All other areas				
Date Performed	6/23/2006					Jurisdiction	D.C.				
Time Period	AM PEAK					Analysis Year	2006				

Volume and Timing Input												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Lane group	L	TR		L	TR		L	TR		L	TR	
Volume (vph)	38	555	159	89	860	311	223	355	26	95	131	77
% Heavy veh	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.95	0.95	0.95	0.93	0.93	0.93	0.93	0.93	0.93	0.80	0.80	0.80
Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup lost time	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Ext. eff. green	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Arrival type	3	3		3	3		3	3		3	3	
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Ped/Bike/RTOR Volume	0		0	50		0	1		0	35		0
Lane Width	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/hr												
Bus stops/hr	0	0		0	0		0	0		0	0	
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Phasing	EW Perm	Excl. Left	03	04	NS Perm	06	07	08				
Timing	G = 37.3	G = 6.1	G =	G =	G = 42.6	G =	G =	G =				
	Y = 5	Y = 4	Y =	Y =	Y = 5	Y =	Y =	Y =				
Duration of Analysis (hrs) = 0.25								Cycle Length C = 100.0				

Lane Group Capacity, Control Delay, and LOS Determination												
	EB			WB			NB			SB		
Adj. flow rate	40	751		96	1259		240	410		119	260	
Lane group cap.	276	1304		365	1296		431	801		304	765	
v/c ratio	0.14	0.58		0.26	0.97		0.56	0.51		0.39	0.34	
Green ratio	0.48	0.37		0.48	0.37		0.43	0.43		0.43	0.43	
Unif. delay d1	36.2	25.0		24.6	30.8		21.6	21.1		19.8	19.3	
Delay factor k	0.50	0.50		0.50	0.50		0.50	0.50		0.50	0.50	
Incram. delay d2	1.1	1.9		1.8	19.0		5.1	2.3		3.8	1.2	
PF factor	1.000	1.000		1.000	1.000		1.000	1.000		1.000	1.000	
Control delay	37.3	26.9		26.4	49.9		26.7	23.4		23.5	20.5	
Lane group LOS	D	C		C	D		C	C		C	C	
Apprch. delay	27.4			48.2			24.6			21.4		
Approach LOS	C			D			C			C		
Intersec. delay	35.0			Intersection LOS						D		

SHORT REPORT

General Information						Site Information					
Analyst	ORGA -IJB					Intersection	MICHIGAN AVE@1ST ST				
Agency or Co.	O.R.GEORGE & ASSOCIATES. INC					Area Type	All other areas				
Date Performed	6/23/2006					Jurisdiction	D.C.				
Time Period	PM PEAK					Analysis Year	2006				

Volume and Timing Input												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Lane group	L	TR		L	TR		L	TR		L	TR	
Volume (vph)	48	772	258	83	430	35	137	108	52	247	298	92
% Heavy veh	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.83	0.83	0.83	0.92	0.92	0.92	0.88	0.88	0.88	0.81	0.81	0.81
Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup lost time	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Ext. eff. green	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Arrival type	3	3		3	3		3	3		3	3	
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Ped/Bike/RTOR Volume	1		0	49		0	0		0	34		0
Lane Width	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/hr												
Bus stops/hr	0	0		0	0		0	0		0	0	
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Phasing	EW Perm	Excl. Left	03	04	NS Perm	06	07	08				
Timing	G = 37.3	G = 6.1	G =	G =	G = 42.6	G =	G =	G =				
	Y = 5	Y = 4	Y =	Y =	Y = 5	Y =	Y =	Y =				
Duration of Analysis (hrs) = 0.25							Cycle Length C = 100.0					

Lane Group Capacity, Control Delay, and LOS Determination												
	EB			WB			NB			SB		
Adj. flow rate	58	1241		90	505		156	182		305	482	
Lane group cap.	470	1299		276	1334		247	770		502	781	
v/c ratio	0.12	0.96		0.33	0.38		0.63	0.24		0.61	0.62	
Green ratio	0.48	0.37		0.48	0.37		0.43	0.43		0.43	0.43	
Unif. delay d1	18.3	30.5		37.1	22.9		22.5	18.3		22.2	22.3	
Delay factor k	0.50	0.50		0.50	0.50		0.50	0.50		0.50	0.50	
Increm. delay d2	0.5	16.3		3.1	0.8		11.7	0.7		5.4	3.6	
PF factor	1.000	1.000		1.000	1.000		1.000	1.000		1.000	1.000	
Control delay	18.8	46.9		40.2	23.7		34.2	19.0		27.6	26.0	
Lane group LOS	B	D		D	C		C	B		C	C	
Apprch. delay	45.6			26.2			26.0			26.6		
Approach LOS	D			C			C			C		
Intersec. delay	34.7			Intersection LOS						C		

TWO-WAY STOP CONTROL SUMMARY

General Information				Site Information			
Analyst	ORGA-IJB			Intersection	Michigan @ Entrance		
Agency/Co.	O.R. GEORGE & ASSOCIATES			Jurisdiction	D.C.		
Date Performed	8/1/2006			Analysis Year	2006		
Analysis Time Period	AM PEAK						
Project Description CNMC							
East/West Street: MICHIGAN AVENUE				North/South Street: Entrance			
Intersection Orientation: East-West				Study Period (hrs): 0.25			
Vehicle Volumes and Adjustments							
Major Street	Eastbound			Westbound			
Movement	1	2	3	4	5	6	
	L	T	R	L	T	R	
Volume (veh/h)	173	752	0	0	760	400	
Peak-hour factor, PHF	0.90	0.90	1.00	1.00	0.94	0.94	
Hourly Flow Rate (veh/h)	192	835	0	0	808	425	
Proportion of heavy vehicles, P_{HV}	0	--	--	0	--	--	
Median type	Undivided						
RT Channelized?			0			0	
Lanes	0	2	0	0	2	0	
Configuration	LT	T			T	TR	
Upstream Signal		0			1		
Minor Street	Northbound			Southbound			
Movement	7	8	9	10	11	12	
	L	T	R	L	T	R	
Volume (veh/h)	0	0	0	0	0	0	
Peak-hour factor, PHF	1.00	1.00	1.00	0.58	1.00	0.58	
Hourly Flow Rate (veh/h)	0	0	0	0	0	0	
Proportion of heavy vehicles, P_{HV}	0	0	0	0	0	0	
Percent grade (%)	0			0			
Flared approach		N			N		
Storage		0			0		
RT Channelized?			0			0	
Lanes	0	0	0	0	0	0	
Configuration							
Control Delay, Queue Length, Level of Service							
Approach	EB	WB	Northbound			Southbound	
Movement	1	4	7	8	9	10	11 12
Lane Configuration	LT						
Volume, v (vph)	192						
Capacity, c_m (vph)	601						
v/c ratio	0.32						
Queue length (95%)	1.37						
Control Delay (s/veh)	13.8						
LOS	B						
Approach delay (s/veh)	--	--					
Approach LOS	--	--					

TWO-WAY STOP CONTROL SUMMARY

General Information			Site Information				
Analyst	ORGA-IJB		Intersection	Michigan @ Entrance			
Agency/Co.	O.R. GEORGE & ASSOCIATES		Jurisdiction	D.C.			
Date Performed	8/1/2006		Analysis Year	2006			
Analysis Time Period	PM PEAK						
Project Description CNMC							
East/West Street: MICHIGAN AVENUE			North/South Street: Entrance				
Intersection Orientation: East-West			Study Period (hrs): 0.25				
Vehicle Volumes and Adjustments							
Major Street	Eastbound			Westbound			
Movement	1	2	3	4	5	6	
	L	T	R	L	T	R	
Volume (veh/h)	27	1079	0	0	594	65	
Peak-hour factor, PHF	0.90	0.90	1.00	1.00	0.94	0.94	
Hourly Flow Rate (veh/h)	30	1198	0	0	631	69	
Proportion of heavy vehicles, P_{HV}	0	--	--	0	--	--	
Median type	Undivided						
RT Channelized?			0			0	
Lanes	0	2	0	0	2	0	
Configuration	LT	T			T	TR	
Upstream Signal		0			1		
Minor Street	Northbound			Southbound			
Movement	7	8	9	10	11	12	
	L	T	R	L	T	R	
Volume (veh/h)	0	0	0	0	0	0	
Peak-hour factor, PHF	1.00	1.00	1.00	0.58	1.00	0.58	
Hourly Flow Rate (veh/h)	0	0	0	0	0	0	
Proportion of heavy vehicles, P_{HV}	0	0	0	0	0	0	
Percent grade (%)	0			0			
Flared approach		N			N		
Storage		0			0		
RT Channelized?			0			0	
Lanes	0	0	0	0	0	0	
Configuration							
Control Delay, Queue Length, Level of Service							
Approach	EB	WB	Northbound			Southbound	
Movement	1	4	7	8	9	10	11
Lane Configuration	LT						
Volume, v (vph)	30						
Capacity, c_m (vph)	988						
v/c ratio	0.03						
Queue length (95%)	0.09						
Control Delay (s/veh)	8.8						
LOS	A						
Approach delay (s/veh)	--	--					
Approach LOS	--	--					

SHORT REPORT												
General Information						Site Information						
Analyst ORGA - IJB						Intersection MICHIGAN AT EXIT						
Agency or Co. O.R. GEORGE & ASSOCIATES, INC						Area Type All other areas						
Date Performed 6/26/2006						Jurisdiction D.C.						
Time Period AM PEAK						Analysis Year 2006						
Volume and Timing Input												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	0	2	0	0	2	0	0	0	0	1	0	1
Lane group		T			T					L		R
Volume (vph)		714			760					111		53
% Heavy veh		0			0					0		0
PHF		0.95			0.93					0.64		0.64
Actuated (P/A)		P			P					P		P
Startup lost time		2.0			2.0					2.0		2.0
Ext. eff. green		2.0			2.0					2.0		2.0
Arrival type		3			3					3		3
Unit Extension		3.0			3.0					3.0		3.0
Ped/Bike/RTOR Volume							0			0		0
Lane Width		12.0			12.0					12.0		12.0
Parking/Grade/Parking	N	0	N	N	0	N	N		N	N	0	N
Parking/hr												
Bus stops/hr		0			0					0		0
Unit Extension		3.0			3.0					3.0		3.0
Phasing	Thru Only	02	03	04	SB Only	06	07	08				
Timing	G = 73.3	G =	G =	G =	G = 16.7	G =	G =	G =				
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =				
Duration of Analysis (hrs) = 0.25						Cycle Length C = 100.0						
Lane Group Capacity, Control Delay, and LOS Determination												
	EB			WB			NB			SB		
Adj. flow rate		752			817					173		83
Lane group cap.		2652			2652					301		270
v/c ratio		0.28			0.31					0.57		0.31
Green ratio		0.73			0.73					0.17		0.17
Unif. delay d1		4.5			4.6					38.4		36.6
Delay factor k		0.50			0.50					0.50		0.50
Increment. delay d2		0.3			0.3					7.8		2.9
PF factor		1.000			1.000					1.000		1.000
Control delay		4.8			4.9					46.1		39.5
Lane group LOS		A			A					D		D
Approch. delay		4.8			4.9					44.0		
Approach LOS		A			A					D		
Intersec. delay		10.3			Intersection LOS						B	

SHORT REPORT												
General Information						Site Information						
Analyst	ORGA - IJB					Intersection	MICHIGAN AT EXIT					
Agency or Co.	O.R. GEORGE & ASSOCIATES, INC					Area Type	All other areas					
Date Performed	6/26/2006					Jurisdiction	D.C.					
Time Period	PM PEAK					Analysis Year	2006					
Volume and Timing Input												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	0	2	0	0	2	0	0	0	0	1	0	1
Lane group		T			T					L		R
Volume (vph)		806			587					280		258
% Heavy veh		0			0					0		0
PHF		0.83			0.90					0.76		0.76
Actuated (P/A)		P			P					P		P
Startup lost time		2.0			2.0					2.0		2.0
Ext. eff. green		2.0			2.0					2.0		2.0
Arrival type		3			3					3		3
Unit Extension		3.0			3.0					3.0		3.0
Ped/Bike/RTOR Volume							0			0		0
Lane Width		12.0			12.0					12.0		12.0
Parking/Grade/Parking	N	0	N	N	0	N	N		N	N	0	N
Parking/hr												
Bus stops/hr		0			0					0		0
Unit Extension		3.0			3.0					3.0		3.0
Phasing	Thru Only	02	03	04	SB Only	06	07	08				
Timing	G = 56.5	G =	G =	G =	G = 33.5	G =	G =	G =				
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =				
Duration of Analysis (hrs) = 0.25				Cycle Length C = 100.0								
Lane Group Capacity, Control Delay, and LOS Determination												
	EB			WB			NB			SB		
Adj. flow rate		971			652					368		339
Lane group cap.		2044			2044					605		541
v/c ratio		0.48			0.32					0.61		0.63
Green ratio		0.56			0.56					0.34		0.34
Unif. delay d1		12.9			11.5					27.8		28.0
Delay factor k		0.50			0.50					0.50		0.50
Increm. delay d2		0.8			0.4					4.5		5.4
PF factor		1.000			1.000					1.000		1.000
Control delay		13.7			12.0					32.3		33.4
Lane group LOS		B			B					C		C
Apprch. delay	13.7			12.0						32.8		
Approach LOS	B			B						C		
Intersec. delay	19.0			Intersection LOS						B		

TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	ORGA-IJB			Intersection	Michigan @ Hospital Dr. sth			
Agency/Co.	O.R. GEORGE & ASSOCIATES			Jurisdiction	D.C.			
Date Performed	8/1/2006			Analysis Year	2006			
Analysis Time Period	AM PEAK							
Project Description CNMC								
East/West Street: MICHIGAN AVENUE				North/South Street: HOSPITAL CENTER DR. STH				
Intersection Orientation: East-West				Study Period (hrs): 0.25				
Vehicle Volumes and Adjustments								
Major Street	Eastbound			Westbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	106	667	0	0	670	70		
Peak-hour factor, PHF	0.90	0.90	1.00	1.00	0.94	0.94		
Hourly Flow Rate (veh/h)	117	741	0	0	712	74		
Proportion of heavy vehicles, P _{HV}	0	--	--	0	--	--		
Median type	Undivided							
RT Channelized?			0			0		
Lanes	0	2	0	0	2	0		
Configuration	LT	T			T	TR		
Upstream Signal		0			1			
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)	0	0	0	47	0	66		
Peak-hour factor, PHF	1.00	1.00	1.00	0.58	1.00	0.58		
Hourly Flow Rate (veh/h)	0	0	0	81	0	113		
Proportion of heavy vehicles, P _{HV}	0	0	0	0	0	0		
Percent grade (%)	0			0				
Flared approach		N			N			
Storage		0			0			
RT Channelized?			0			0		
Lanes	0	0	0	1	0	1		
Configuration				L		R		
Control Delay, Queue Length, Level of Service								
Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT					L		R
Volume, v (vph)	117					81		113
Capacity, c _m (vph)	913					143		786
v/c ratio	0.13					0.57		0.14
Queue length (95%)	0.44					2.86		0.50
Control Delay (s/veh)	9.5					58.9		10.3
LOS	A					F		B
Approach delay (s/veh)	--	--				30.6		
Approach LOS	--	--				D		

TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	ORGA-IJB			Intersection	Michigan @ Hospital Dr. sth			
Agency/Co.	O.R.GEORGE & ASSOCIATES			Jurisdiction	D.C.			
Date Performed	8/1/2006			Analysis Year	2006			
Analysis Time Period	PM PEAK							
Project Description CNMC								
East/West Street: MICHIGAN AVENUE				North/South Street: HOSPITAL CENTER DR. STH				
Intersection Orientation: East-West				Study Period (hrs): 0.25				
Vehicle Volumes and Adjustments								
Major Street	Eastbound			Westbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	40	726	0	0	775	63		
Peak-hour factor, PHF	0.96	0.96	1.00	1.00	0.90	0.90		
Hourly Flow Rate (veh/h)	41	756	0	0	861	70		
Proportion of heavy vehicles, P_{HV}	0	--	--	0	--	--		
Median type	Undivided							
RT Channelized?			0			0		
Lanes	0	2	0	0	2	0		
Configuration	LT	T			T	TR		
Upstream Signal		0			1			
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)	0	0	0	80	0	164		
Peak-hour factor, PHF	1.00	1.00	1.00	0.81	1.00	0.81		
Hourly Flow Rate (veh/h)	0	0	0	98	0	202		
Proportion of heavy vehicles, P_{HV}	0	0	0	0	0	0		
Percent grade (%)	0			0				
Flared approach		N			N			
Storage		0			0			
RT Channelized?			0			0		
Lanes	0	0	0	1	0	1		
Configuration				L		R		
Control Delay, Queue Length, Level of Service								
Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT					L		R
Volume, v (vph)	41					98		202
Capacity, c_m (vph)	814					160		748
v/c ratio	0.05					0.61		0.27
Queue length (95%)	0.16					3.32		1.09
Control Delay (s/veh)	9.7					57.8		11.6
LOS	A					F		B
Approach delay (s/veh)	--	--				26.7		
Approach LOS	--	--				D		

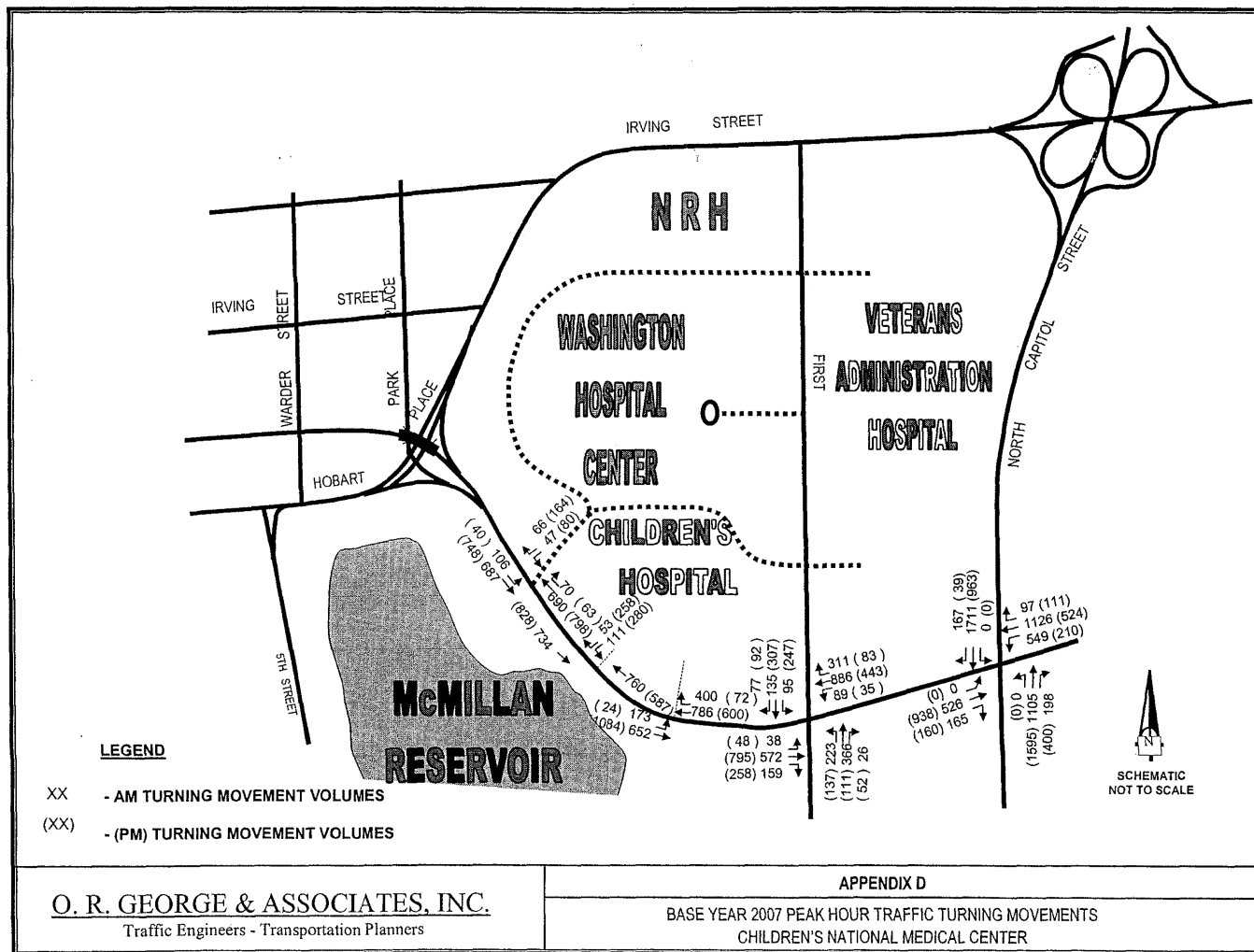
SHORT REPORT												
General Information							Site Information					
Analyst	ORGA -IJB						Intersection	MICHIGAN AVE@NCS				
Agency or Co.	O.R. GEORGE & ASSOCIATES, INC						Area Type	All other areas				
Date Performed	6/23/2006						Jurisdiction	D.C.				
Time Period	AM PEAK						Analysis Year	2006				
Volume and Timing Input												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	0	3	0	1	2	0	0	3	0	0	3	0
Lane group		TR		L	TR			TR			TR	
Volume (vph)		511	165	549	1093	97		1073	198		1711	197
% Heavy veh		0	0	0	0	0		0	0		0	0
PHF		0.95	0.95	0.93	0.93	0.93		0.95	0.95		0.96	0.96
Actuated (P/A)		P	P	P	P	P		P	P		P	P
Startup lost time		2.0		2.0	2.0			2.0			2.0	
Ext. eff. green		2.0		2.0	2.0			2.0			2.0	
Arrival type		3		3	3			3			3	
Unit Extension		3.0		3.0	3.0			3.0			3.0	
Ped/Bike/RTOR Volume	0		0	50		0	0		0	35		0
Lane Width		12.0		12.0	12.0			12.0			12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/hr												
Bus stops/hr		0		0	0			0			0	
Unit Extension		3.0		3.0	3.0			3.0			3.0	
Phasing	WB Only	Thru & RT	03	04	Thru & RT	06	07	08				
Timing	G = 29.6	G = 15.4	G =	G =	G = 41.0	G =	G =	G =				
	Y = 4	Y = 5	Y =	Y =	Y = 5	Y =	Y =	Y =				
Duration of Analysis (hrs) = 0.25						Cycle Length C = 100.0						
Lane Group Capacity, Control Delay, and LOS Determination												
	EB			WB			NB			SB		
Adj. flow rate		712		590	1279			1337			1987	
Lane group cap.		768		534	1751			2073			2089	
v/c ratio		0.93		1.10	0.73			0.64			0.95	
Green ratio		0.15		0.30	0.49			0.41			0.41	
Unif. delay d1		41.7		35.2	20.3			23.7			28.5	
Delay factor k		0.50		0.50	0.50			0.50			0.50	
Increm. delay d2		18.9		70.8	2.7			1.6			11.1	
PF factor		1.000		1.000	1.000			1.000			1.000	
Control delay		60.7		106.0	23.0			25.2			39.7	
Lane group LOS		E		F	C			C			D	
Apprch. delay	60.7			49.2			25.2			39.7		
Approach LOS	E			D			C			D		
Intersec. delay	41.9			Intersection LOS						D		

SHORT REPORT												
General Information						Site Information						
Analyst ORGA -IJB						Intersection MICHIGAN AVE@NCS						
Agency or Co. O.R.GEORGE & ASSOCIATES. INC						Area Type All other areas						
Date Performed 6/23/2006						Jurisdiction D.C.						
Time Period PM PEAK						Analysis Year 2006						
Volume and Timing Input												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	0	3	0	1	2	0	0	3	0	0	3	0
Lane group		TR		L	TR			TR			TR	
Volume (vph)		911	160	210	509	111		1549	400		963	39
% Heavy veh		0	0	0	0	0		0	0		0	0
PHF		0.95	0.95	0.93	0.93	0.93		0.96	0.96		0.93	0.93
Actuated (P/A)		P	P	P	P	P		P	P		P	P
Startup lost time		2.0		2.0	2.0			2.0			2.0	
Ext. eff. green		2.0		2.0	2.0			2.0			2.0	
Arrival type		3		3	3			3			3	
Unit Extension		3.0		3.0	3.0			3.0			3.0	
Ped/Bike/RTOR Volume	0		0	0		0	0		0	0		0
Lane Width		12.0		12.0	12.0			12.0			12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/hr												
Bus stops/hr		0		0	0			0			0	
Unit Extension		3.0		3.0	3.0			3.0			3.0	
Phasing	WB Only	Thru & RT	03	04	Thru & RT	06	07	08				
Timing	G = 22.0	G = 23.0	G =	G =	G = 41.0	G =	G =	G =				
	Y = 4	Y = 5	Y =	Y =	Y = 5	Y =	Y =	Y =				
Duration of Analysis (hrs) = 0.25						Cycle Length C = 100.0						
Lane Group Capacity, Control Delay, and LOS Determination												
	EB			WB			NB			SB		
Adj. flow rate		1127		226	666			2031			1077	
Lane group cap.		1164		397	1725			2057			2109	
v/c ratio		0.97		0.57	0.39			0.99			0.51	
Green ratio		0.23		0.22	0.49			0.41			0.41	
Unif. delay d1		38.1		34.8	16.0			29.2			22.0	
Delay factor k		0.50		0.50	0.50			0.50			0.50	
Increm. delay d2		19.8		5.8	0.7			17.1			0.9	
PF factor		1.000		1.000	1.000			1.000			1.000	
Control delay		57.9		40.6	16.7			46.3			22.9	
Lane group LOS		E		D	B			D			C	
Apprch. delay		57.9		22.7				46.3			22.9	
Approach LOS		E		C				D			C	
Intersec. delay		39.8		Intersection LOS							D	

APPENDIX

D

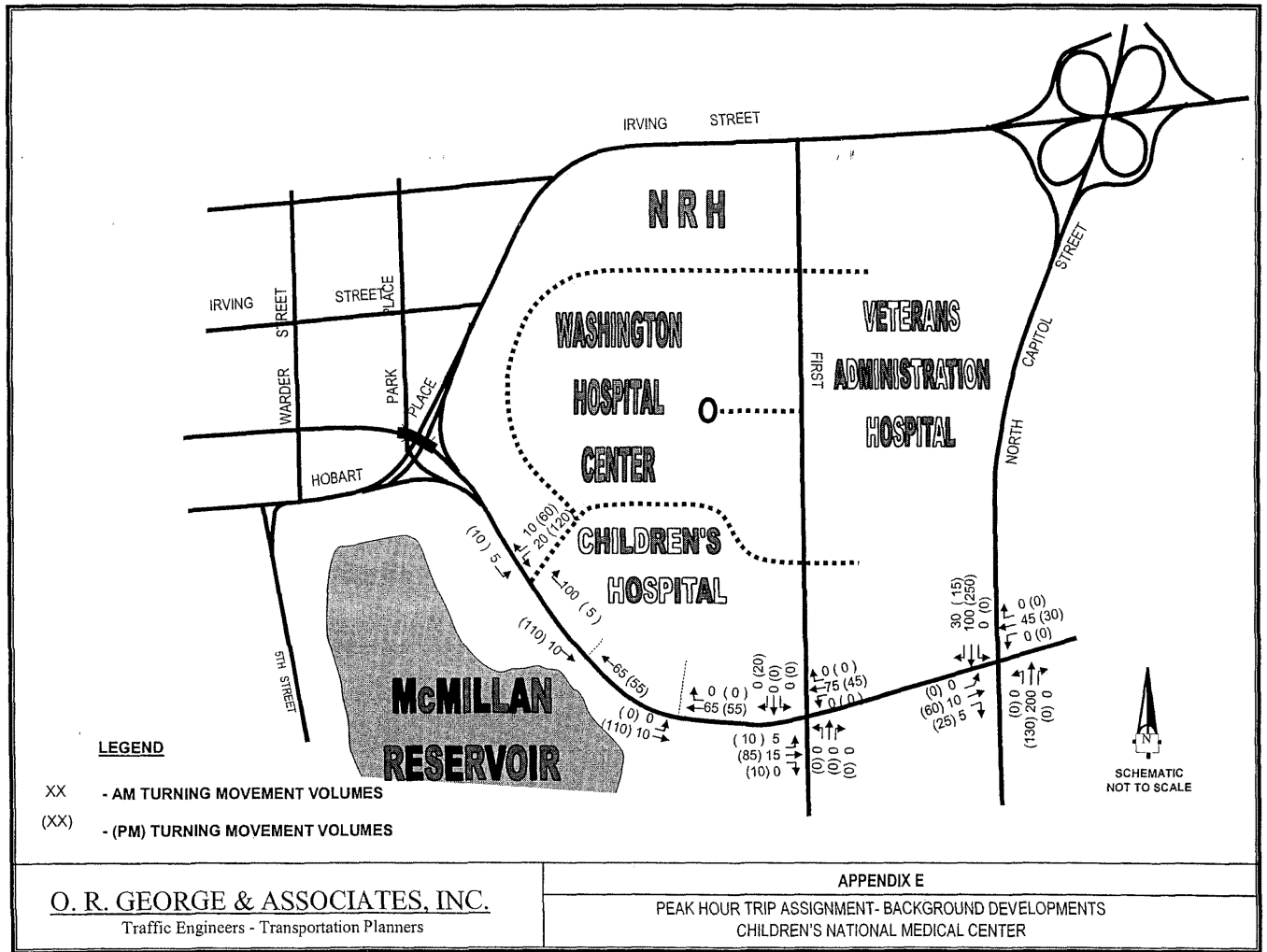
2007 'BASE' TRAFFIC SITUATION



APPENDIX

E

PEAK HOUR TRIP ASSIGNMENT –
BACKGROUND DEVELOPMENT



APPENDIX

F

CAPACITY ANALYSIS WORKSHEETS -
2007 BACKGROUND TRAFFIC SITUATION

SHORT REPORT													
General Information							Site Information						
Analyst	ORGA -IJB						Intersection	MICHIGAN AVE@1ST ST					
Agency or Co.	O.R.GEORGE & ASSOCIATES, INC						Area Type	All other areas					
Date Performed	6/23/2006						Jurisdiction	D.C.					
Time Period	AM PEAK						Analysis Year	2007 Background					
Volume and Timing Input													
	EB			WB			NB			SB			
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Num. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0	
Lane group	L	TR		L	TR		L	TR		L	TR		
Volume (vph)	43	587	149	89	961	311	223	366	26	95	135	77	
% Heavy veh	0	0	0	0	0	0	0	0	0	0	0	0	
PHF	0.95	0.95	0.95	0.93	0.93	0.93	0.93	0.93	0.93	0.80	0.80	0.80	
Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P	
Startup lost time	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0		
Ext. eff. green	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0		
Arrival type	3	3		3	3		3	3		3	3		
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		
Ped/Bike/RTOR Volume	0		0	50		0	1		0	35		0	
Lane Width	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0		
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N	
Parking/hr													
Bus stops/hr	0	0		0	0		0	0		0	0		
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		
Phasing	EW Perm	Excl. Left	03	04	NS Perm	06	07	08					
Timing	G = 52.9	G = 6.1	G =	G =	G = 27.0	G =	G =	G =					
	Y = 5	Y = 4	Y =	Y =	Y = 5	Y =	Y =	Y =					
Duration of Analysis (hrs) = 0.25			Cycle Length C = 100.0										
Lane Group Capacity, Control Delay, and LOS Determination													
	EB			WB			NB			SB			
Adj. flow rate	45	775		96	1367		240	422		119	265		
Lane group cap.	297	1856		494	1844		220	508		95	485		
v/c ratio	0.15	0.42		0.19	0.74		1.09	0.83		1.25	0.55		
Green ratio	0.64	0.53		0.64	0.53		0.27	0.27		0.27	0.27		
Unif. delay d1	22.7	14.2		12.2	18.2		36.5	34.3		36.5	31.3		
Delay factor k	0.50	0.50		0.50	0.50		0.50	0.50		0.50	0.50		
Increment. delay d2	1.1	0.7		0.9	2.7		87.0	14.6		174.8	4.4		
PF factor	1.000	1.000		1.000	1.000		1.000	1.000		1.000	1.000		
Control delay	23.8	14.9		13.1	21.0		123.5	48.9		211.3	35.6		
Lane group LOS	C	B		B	C		F	D		F	D		
Approch. delay	15.4			20.5			76.0			90.1			
Approach LOS	B			C			E			F			
Intersec. delay	38.3			Intersection LOS						D			

SHORT REPORT													
General Information							Site Information						
Analyst	ORGA -IJB						Intersection	MICHIGAN AVE@1ST ST/					
Agency or Co.	O.R.GEORGE & ASSOCIATES. INC						Area Type	All other areas					
Date Performed	6/23/2006						Jurisdiction	D.C.					
Time Period	PM PEAK						Analysis Year	2007 Background					
Volume and Timing Input													
	EB			WB			NB			SB			
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Num. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0	
Lane group	L	TR		L	TR		L	TR		L	TR		
Volume (vph)	58	880	268	35	488	83	137	111	52	247	307	102	
% Heavy veh	0	0	0	0	0	0	0	0	0	0	0	0	
PHF	0.83	0.83	0.83	0.92	0.92	0.92	0.88	0.88	0.88	0.81	0.81	0.81	
Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P	
Startup lost time	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0		
Ext. eff. green	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0		
Arrival type	3	3		3	3		3	3		3	3		
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		
Ped/Bike/RTOR Volume	1		0	49		0	0		0	34		0	
Lane Width	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0		
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N	
Parking/hr													
Bus stops/hr	0	0		0	0		0	0		0	0		
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		
Phasing	EW Perm	Excl. Left	03	04	NS Perm	06	07	08					
Timing	G = 37.3	G = 6.1	G =	G =	G = 42.6	G =	G =	G =					
	Y = 5	Y = 4	Y =	Y =	Y = 5	Y =	Y =	Y =					
Duration of Analysis (hrs) = 0.25						Cycle Length C = 100.0							
Lane Group Capacity, Control Delay, and LOS Determination													
	EB			WB			NB			SB			
Adj. flow rate	70	1383		38	620		156	185		305	505		
Lane group cap.	418	1302		276	1320		229	771		500	779		
v/c ratio	0.17	1.06		0.14	0.47		0.68	0.24		0.61	0.65		
Green ratio	0.48	0.37		0.48	0.37		0.43	0.43		0.43	0.43		
Unif. delay d1	20.7	31.4		36.8	23.8		23.2	18.3		22.3	22.8		
Delay factor k	0.50	0.50		0.50	0.50		0.50	0.50		0.50	0.50		
Increm. delay d2	0.9	43.3		1.0	1.2		15.2	0.7		5.5	4.1		
PF factor	1.000	1.000		1.000	1.000		1.000	1.000		1.000	1.000		
Control delay	21.6	74.6		37.8	25.0		38.4	19.1		27.7	26.9		
Lane group LOS	C	E		D	C		D	B		C	C		
Apprch. delay	72.1			25.8			27.9			27.2			
Approach LOS	E			C			C			C			
Intersec. delay	47.0			Intersection LOS						D			

F-2

TWO-WAY STOP CONTROL SUMMARY							
General Information				Site Information			
Analyst	ORGA-IJB			Intersection	Michigan @ Entrance		
Agency/Co.	O.R.GEORGE & ASSOCIATES			Jurisdiction	D.C.		
Date Performed	8/1/2006			Analysis Year	2007 Background		
Analysis Time Period	AM PEAK						
Project Description CNMC							
East/West Street: MICHIGAN AVENUE				North/South Street: Entrance			
Intersection Orientation: East-West				Study Period (hrs): 0.25			
Vehicle Volumes and Adjustments							
Major Street	Eastbound			Westbound			
Movement	1	2	3	4	5	6	
	L	T	R	L	T	R	
Volume (veh/h)	173	855	0	0	851	400	
Peak-hour factor, PHF	0.90	0.90	1.00	1.00	0.94	0.94	
Hourly Flow Rate (veh/h)	192	950	0	0	905	425	
Proportion of heavy vehicles, P_{HV}	0	--	--	0	--	--	
Median type	Undivided						
RT Channelized?			0			0	
Lanes	0	2	0	0	2	0	
Configuration	LT	T			T	TR	
Upstream Signal		0			1		
Minor Street	Northbound			Southbound			
Movement	7	8	9	10	11	12	
	L	T	R	L	T	R	
Volume (veh/h)	0	0	0	0	0	0	
Peak-hour factor, PHF	1.00	1.00	1.00	0.58	1.00	0.58	
Hourly Flow Rate (veh/h)	0	0	0	0	0	0	
Proportion of heavy vehicles, P_{HV}	0	0	0	0	0	0	
Percent grade (%)	0			0			
Flared approach		N			N		
Storage		0			0		
RT Channelized?			0			0	
Lanes	0	0	0	0	0	0	
Configuration							
Control Delay, Queue Length, Level of Service							
Approach	EB	WB	Northbound			Southbound	
Movement	1	4	7	8	9	10	11
Lane Configuration	LT						
Volume, v (vph)	192						
Capacity, c_m (vph)	548						
v/c ratio	0.35						
Queue length (95%)	1.56						
Control Delay (s/veh)	15.1						
LOS	C						
Approach delay (s/veh)	--	--					
Approach LOS	--	--					

TWO-WAY STOP CONTROL SUMMARY							
General Information				Site Information			
Analyst	ORGA-IJB			Intersection	Michigan @ Entrance		
Agency/Co.	O.R. GEORGE & ASSOCIATES			Jurisdiction	D.C.		
Date Performed	8/1/2006			Analysis Year	2007 Background		
Analysis Time Period	PM PEAK						
Project Description CNMC							
East/West Street: MICHIGAN AVENUE				North/South Street: Entrance			
Intersection Orientation: East-West				Study Period (hrs): 0.25			
Vehicle Volumes and Adjustments							
Major Street	Eastbound			Westbound			
Movement	1	2	3	4	5	6	
	L	T	R	L	T	R	
Volume (veh/h)	27	1218	0	0	645	72	
Peak-hour factor, PHF	0.90	0.90	1.00	1.00	0.94	0.94	
Hourly Flow Rate (veh/h)	30	1353	0	0	686	76	
Proportion of heavy vehicles, P_{HV}	0	--	--	0	--	--	
Median type	Undivided						
RT Channelized?			0			0	
Lanes	0	2	0	0	2	0	
Configuration	LT	T			T	TR	
Upstream Signal		0			1		
Minor Street	Northbound			Southbound			
Movement	7	8	9	10	11	12	
	L	T	R	L	T	R	
Volume (veh/h)	0	0	0	0	0	0	
Peak-hour factor, PHF	1.00	1.00	1.00	0.58	1.00	0.58	
Hourly Flow Rate (veh/h)	0	0	0	0	0	0	
Proportion of heavy vehicles, P_{HV}	0	0	0	0	0	0	
Percent grade (%)	0			0			
Flared approach		N			N		
Storage		0			0		
RT Channelized?			0			0	
Lanes	0	0	0	0	0	0	
Configuration							
Control Delay, Queue Length, Level of Service							
Approach	EB	WB	Northbound			Southbound	
Movement	1	4	7	8	9	10	11 12
Lane Configuration	LT						
Volume, v (vph)	30						
Capacity, c_m (vph)	933						
v/c ratio	0.03						
Queue length (95%)	0.10						
Control Delay (s/veh)	9.0						
LOS	A						
Approach delay (s/veh)	--	--					
Approach LOS	--	--					

SHORT REPORT												
General Information						Site Information						
Analyst ORGA - IJB Agency or Co. O.R. GEORGE & ASSOCIATES, INC Date Performed 6/26/2006 Time Period AM PEAK						Intersection MICHIGAN AT EXIT Area Type All other areas Jurisdiction D.C. Analysis Year 2007 Background						
Volume and Timing Input												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	0	2	0	0	2	0	0	0	0	1	0	1
Lane group		T			T					L		R
Volume (vph)		744			851					111		53
% Heavy veh		0			0					0		0
PHF		0.95			0.93					0.64		0.64
Actuated (P/A)		P			P					P		P
Startup lost time		2.0			2.0					2.0		2.0
Ext. eff. green		2.0			2.0					2.0		2.0
Arrival type		3			3					3		3
Unit Extension		3.0			3.0					3.0		3.0
Ped/Bike/RTOR Volume							0			0		0
Lane Width		12.0			12.0					12.0		12.0
Parking/Grade/Parking	N	0	N	N	0	N	N		N	N	0	N
Parking/hr												
Bus stops/hr		0			0					0		0
Unit Extension		3.0			3.0					3.0		3.0
Phasing	Thru Only	02	03	04	SB Only	06	07	08				
Timing	G = 70.0	G =	G =	G =	G = 20.0	G =	G =	G =				
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =				
Duration of Analysis (hrs) = 0.25						Cycle Length C = 100.0						
Lane Group Capacity, Control Delay, and LOS Determination												
	EB			WB			NB			SB		
Adj. flow rate		783			915					173		83
Lane group cap.		2533			2533					361		323
v/c ratio		0.31			0.36					0.48		0.26
Green ratio		0.70			0.70					0.20		0.20
Unif. delay d1		5.7			6.0					35.4		33.7
Delay factor k		0.50			0.50					0.50		0.50
Increm. delay d2		0.3			0.4					4.5		1.9
PF factor		1.000			1.000					1.000		1.000
Control delay		6.1			6.4					39.9		35.6
Lane group LOS		A			A					D		D
Apprch. delay		6.1			6.4					38.5		
Approach LOS		A			A					D		
Intersec. delay		10.5			Intersection LOS						B	