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November 18, 2002

Carol Mitten, Chair
D.C. Zoning Commission
441-4th Street, N.W.
Suite 210
Washington, D.C. 20001

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Re: Pre-Hearing Submission, Zoning Commission Case No. 02-38
(Waterfront-PUD)

Dear Ms. Mitten:

As a supplement to our prehearing submission we are providing herewith:

Twenty copies of a traffic impact analysis for the above-referenced project.

Thank you for the opportunity to provide this information.

Sincerely,

Cynthia A. Giordano

ZONING COMMISSION
District of Columbia
Case 02-38
Exhibit 19

ZONING COMMISSION
District of Columbia
CASE NO.02-38
EXHIBIT NO.19

WATERFRONT DEVELOPMENT
SOUTHWEST WASHINGTON, D.C.

Traffic Impact Analysis

Prepared for

Waterside Association, LLC
Washington, DC

Prepared by

Gorove/Slade Associates, Inc.
1140 Connecticut Avenue NW
Suite 700
Washington, D.C. 20036
202-296-8625

November 11, 2002

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EXECUTIVE SUMMARY

This report contains the findings of a traffic impact study, Loading Dock Assessment, and Roadway Design Assessment conducted for the proposed Waterfront Development, currently know as the Waterside Mall, a mixed-use development with office, ground floor retail, and a supermarket store located in Southwest Washington, DC.

The project site is bound by M street to the south, 6th Street/Makimie Place to the west, Eye Street to the north, and 3rd Street/Wesley Place to the east. Currently, direct access to the site is provided from M street and 6th Street/Wesley Street. This access will be maintained throughout the proposed redevelopment along with access proposed along the planned extension of 4th Street from M Street in the south to Eye Street in the north. The project site is anticipated to be developed over three phases with the first phase scheduled for completion in the year 2005, the second phase to be completed in 2010, and the final build out phase to be completed in 2022.

The analysis presented in this report supports the following major conclusions:

- Existing conditions (2002) indicate that all of the intersections with the exceptions of the 4th Street and M Street, 4th Street and Eye Street, and 3rd Street and Eye Street under P.M. conditions operate at an acceptable overall LOS "D" or better during the A.M. and P.M. commuter peak hours. The 4th Street and M Street intersection under P.M. conditions operate at an overall LOS "F" due to the northbound left turn approach to M street and the eastbound left turn approach to 4th Street/Waterfront Development. The intersection of 4th Street and Eye Street under P.M. conditions operates at and overall LOS "E" due to the southbound left turns from 4th Street to Eye Street. The 3rd Street and Eye Street intersection under the P.M. conditions operates at and overall LOS "E" due to the eastbound approach along Eye Street to 3rd Street. All other intersections operate at acceptable overall levels of service.

- Existing conditions traffic volumes with 4th Street connections (2002) indicate that all of the intersections within the vicinity of the site will operate at an acceptable overall LOS "D" or better during the A.M. and P.M. commuter peak hours. Each intersection within the vicinity of the site will operate at acceptable levels of service due to the redistribution of traffic along 4th Street along with the adjustment of the signal timings and signal cycle length. All intersections within the vicinity of the site were analyzed with Synchro to determine the best offsets, cycle lengths, and signal timings. The Synchro analyses were then transferred into the Highway Capacity Software to report the levels of service at each intersection. All other intersections operate at acceptable overall levels of service.

- Phase I conditions (2005) indicate that all of the intersections within the vicinity of the site will operate at an acceptable overall LOS "D" or better during the A.M. and P.M. commuter peak hours. Each intersection within the vicinity of the site will operate at acceptable levels of service due to the adjustment of the signal timings and signal cycle lengths. All intersections within the vicinity of the site were analyzed with Synchro to determine the best offsets, cycle lengths, and signal timings. The Synchro analyses were

then transferred into the Highway Capacity Software to report the levels of service at each intersection.

- Phase II conditions (2010) indicate that all of the intersections within the vicinity of the site will operate at an acceptable overall LOS "D" or better during the A.M. and P.M. commuter peak hours. Each intersection within the vicinity of the site will operate at acceptable levels of service due to the adjustment of the signal timings and signal cycle lengths. All intersections within the vicinity of the site were analyzed with Synchro to determine the best offsets, cycle lengths, and signal timings. The Synchro analyses were then transferred into the Highway Capacity Software to report the levels of service at each intersection.

- Phase III conditions (2022) indicate that all of the intersections within the vicinity of the site, with the exception of the 4th Street and M under P.M. conditions, operate at an acceptable overall LOS "D" or better during the A.M. and P.M. commuter peak hours. The degradation in level of service at the following intersection is due to, in large part, the 22% background growth. The 4th Street and M Street intersection under P.M. conditions operate at an overall LOS "F" due to the northbound, southbound, and eastbound approaches. All other intersections operate at acceptable overall levels of service.

- Based on the land use of the proposed development and the mode choice, the number of parking spaces required for this site is sufficient for this site based on the DCMR zoning 11 ordinances for Washington D.C.

- Extensive maneuvering analysis was conducted for all dock locations within the vicinity of the site for all phases of development. Each loading dock berth is able to handle, at minimum, a trash truck, a single unit 30-foot truck, and/or a Wheel Base 50 foot truck.

INTRODUCTION

This report contains the findings of a traffic impact study, Loading Dock Assessment, Roadway Design Assessment conducted for the proposed Waterfront Development, currently known as the Waterside Mall, a mixed-use development with office, ground floor retail, and a supermarket store located in Southwest Washington, DC.

The project site is bound by M street to the south, 6th Street/Makimie Place to the west, Eye Street to the north, and 3rd Street/Wesley Place to the east. Currently, direct access to the site is provided from M Street and 6th Street/Wesley Street. This access will be maintained throughout the proposed redevelopment along with access proposed along the planned extension of 4th Street from M Street in the south to Eye Street in the north. The project site is anticipated to be developed over three phases with the first phase scheduled for completion in the year 2005, the second phase to be completed in 2010, and the final build out phase to be completed in 2022. A regional map showing the location of the site is included in Figure 1.

The following tasks were completed as part of this study:

- Field reconnaissance in the vicinity of the project site was conducted to collect information related to existing traffic controls, roadway geometry and operational characteristics;

- Traffic counts were conducted on February 19, 20, 21, 26, & 27, 2002 during the morning and afternoon peak periods at the intersections surrounding the Waterfront Development site;

- Average Daily Traffic Volumes were collected during the week of February 24 through to March 3, 2002 along M street and 4th street in Southwest Washington, DC;

- Existing traffic volumes were redistributed along 4th Street between M Street and I Street based on existing peak hour traffic volume patterns, average daily traffic volumes at major roadway sections, and surrounding roadway travel corridors;

- Future traffic volumes were projected using background growth rates based on historical traffic volume data throughout the District of Columbia;

- Site traffic volumes were generated based on the methodology outlined in the Institute of Transportation Engineers' (ITE) Trip Generation, 6th Edition along with reduction of trips based on historical growth patterns within the Washington, D.C. metropolitan area, and the 1989 Washington Metropolitan Area Transit Authority study;

- Intersection capacity analysis were performed for existing, existing with the new 4th Street connection, total future - Phase I (2005), total future Phase II (2010), and total future Phase III Build out (2022) peak hour traffic conditions at the intersections contained within the study area;

- All existing and future loading docks were assessed base on the location and maneuverability of vehicles into and out of the dock areas; and

- Garage ramp locations were assessed based on overall circulation of vehicles into and out of the site, the garage system, and the local roadway network.

Sources of data for this study include Washington DC Department of Public Works and Department of Planning, the Washington Metropolitan Area Transit Authority, and the office files and field reconnaissance efforts of Gorove/Slade Associates, Inc.

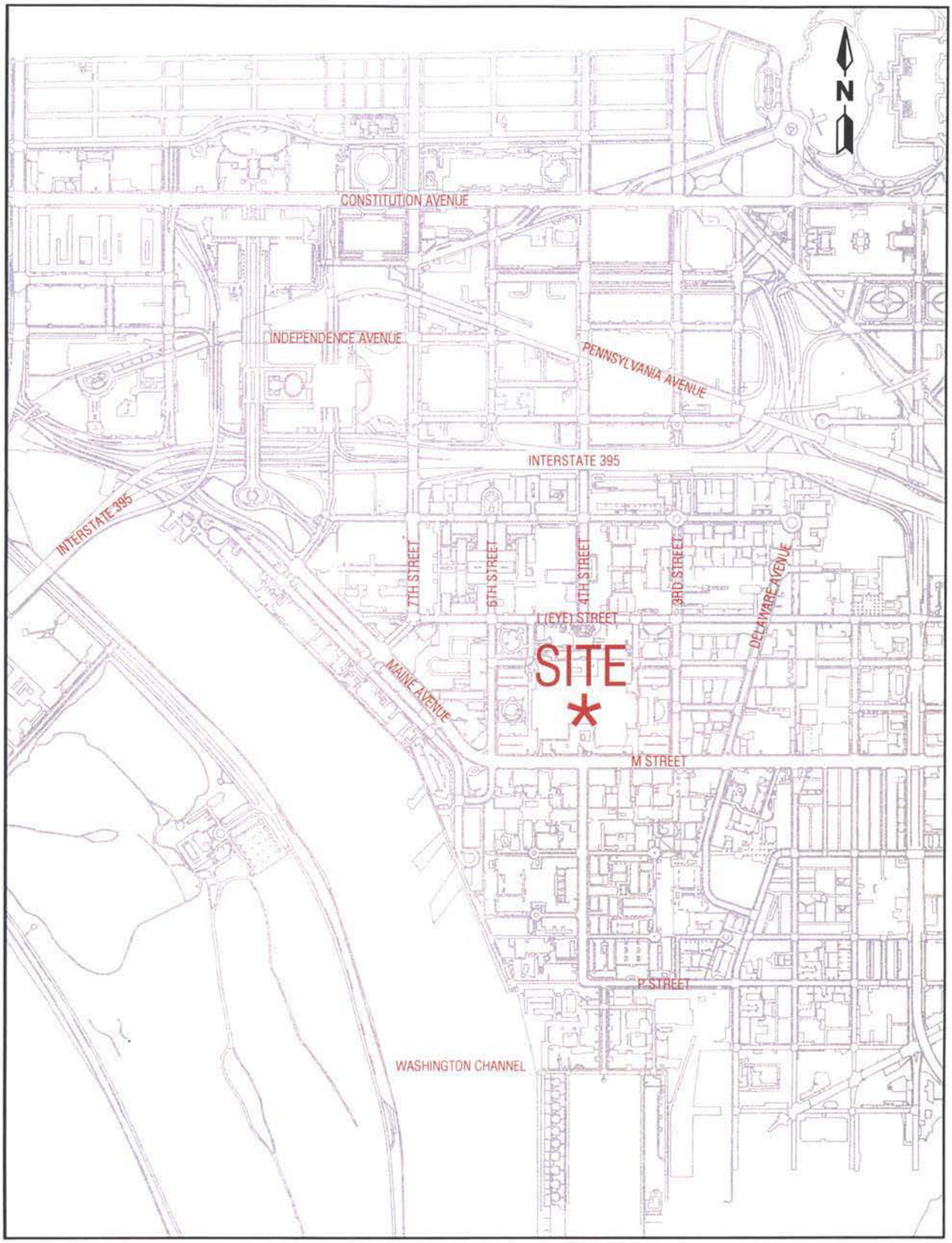


Figure 1
Area Map and Site Location

Scope of Study

The following intersections were identified in an internal-team-scoping meeting for inclusion in this traffic study:

- M Street and 7th Street
- M Street and 6th Street
- M Street and 4th Street
- M Street and 3rd Street
- I Street and 3rd Street
- I Street and 4th Street
- I Street and 6th Street
- P Street and 4th Street

The following roadway segments were identified as locations to collect Average Daily Traffic Data for inclusion in the traffic study:

- M Street West of 6th Street
- M Street East of 3rd Street
- 4th Street North of I Street
- 4th Street South of M Street

Report Outline

This report presents the findings of analyses performed for the following conditions:

- ***Existing Conditions***

  Considers existing traffic volumes and existing roadway configurations;

- ***Existing Conditions with 4th Street open between M Street and I Street***

  Considers existing traffic volumes, redistributed to include the newly constructed 4th Street connection from M street in the south to I street in the north.

- ***Future Development Conditions Phase I (Year 2005)***

  Considers future traffic volumes (2005) including background traffic growth and traffic generated by the Waterfront Development.

- ***Future Development Conditions Phase II (Year 2010)***

  Considers future traffic volumes (2010) including background traffic growth and traffic generated by the Waterfront Development.

- ***Future Development Conditions Phase III Build out (Year 2022)***

  Considers future traffic volumes (2022) including background traffic growth and traffic generated by the Waterfront Development.

- ***Parking Assessment***

  Considers future parking at the Waterfront Development

- ***Loading Dock Assessment***

  Considers future loading dock configurations at the Waterfront Development

- ***Garage Access Assessment***

  Considers future garage access at the Waterfront Development

The results of the analysis and the traffic impacts associated with the proposed development plan are presented in the Conclusion section of this report.

EXISTING CONDITIONS

Site Access

The proposed development is located in Southwest, Washington, DC. The project site is bound by M street to the south, 6th Street/Makimie Place to the west, Eye Street to the north, and 3rd Street/Wesley Place to the east. There currently is direct access to the site from M street, and 6th Street/Makimie Place. Figure 2 shows the local roadway network with the existing intersections.

Existing Roadway Network

M Street

M Street is a six-lane divided east-west major collector that is currently constructed from Maine Avenue, southwest, to the west and terminates at 11th street, southeast to the east. The posted speed limit in the vicinity of the site is 30 mph.

I Street

I Street is a four-lane east-west minor collector that is currently constructed from 7th Street, southwest in the west to New Jersey Avenue, south east in the east. The posted speed limit in the vicinity of the site is 30 mph.

4th Street

Fourth Street is a four-lane north-south minor collector that is currently constructed from P Street, southwest, in the south to M Street, southwest in the north . Then, 4th Street continues from I Street, southwest, in the south to Pennsylvania Avenue, northwest, in the north. Fourth originally continued from P Street to Pennsylvania, but was split as part of the Waterside Mall development. The current plan is to reconnect 4th Street from P Street in the south to Pennsylvania Avenue in the north. The posted speed limit in the vicinity of the site is 30 mph.

3rd Street

Third Street is a two-lane north-south minor collector that is currently constructed from M Street in the south to G Street in the north, southwest. The posted speed limit in the vicinity of the site is 30 mph.

6th Street

Sixth Street is a four-lane north-south minor collector that is currently constructed from Water Street in the south to G Street in the north, southwest. The posted speed limit in the vicinity of the site is 30 mph.

7th Street

Seventh Street is a is a four-lane north-south major collector that is currently constructed from Water Street, southwest, to the south and terminates at New Hampshire Avenue, northwest, in the north. The posted speed limit in the vicinity of the site is 30 mph.

Makimie Place

Makimie Place is a two-lane north-south/east-west minor roadway that is currently constructed from I Street in the north to 6th Street in the west, southwest. The posted speed limit in the vicinity of the site is 25 mph.

Wesley Place

Wesley Place is a two-lane north-south/east-west minor roadway that is currently constructed from I Street in the north to 3rd Street in the east, southwest. The posted speed limit in the vicinity of the site is 25 mph

K Street

K Street is a is a two-lane east-west minor collector that is currently constructed from Wesley Place, southwest, to the west, and terminates at 5th Street, southeast, in the east. The posted speed limit in the vicinity of the site is 30 mph

L Street

L Street is a two-lane east-west minor collector that is currently constructed from 3rd Street in the west to 1st Street in the east, southwest. The posted speed limit in the vicinity of the site is 30 mph

Existing Traffic Volumes

In order to determine the peak hour turning movement traffic volumes, traffic counts were performed on Tuesday, February 19, Wednesday, February 20, Thursday February 21, Tuesday February 26, and Wednesday February 27, 2002 from 6:00 a.m. to 9:00 a.m. and from 4:00 p.m. to 7:00 p.m. The existing traffic volumes for the intersections contained within the study area are shown in Figure 3. Analysis of the existing traffic data determined that the peak hours are as follows:

- A.M. Peak Hour; 7:30 a.m. to 8:30 a.m.
- P.M. Peak Hour; 5:00 p.m. to 6:00 p.m.

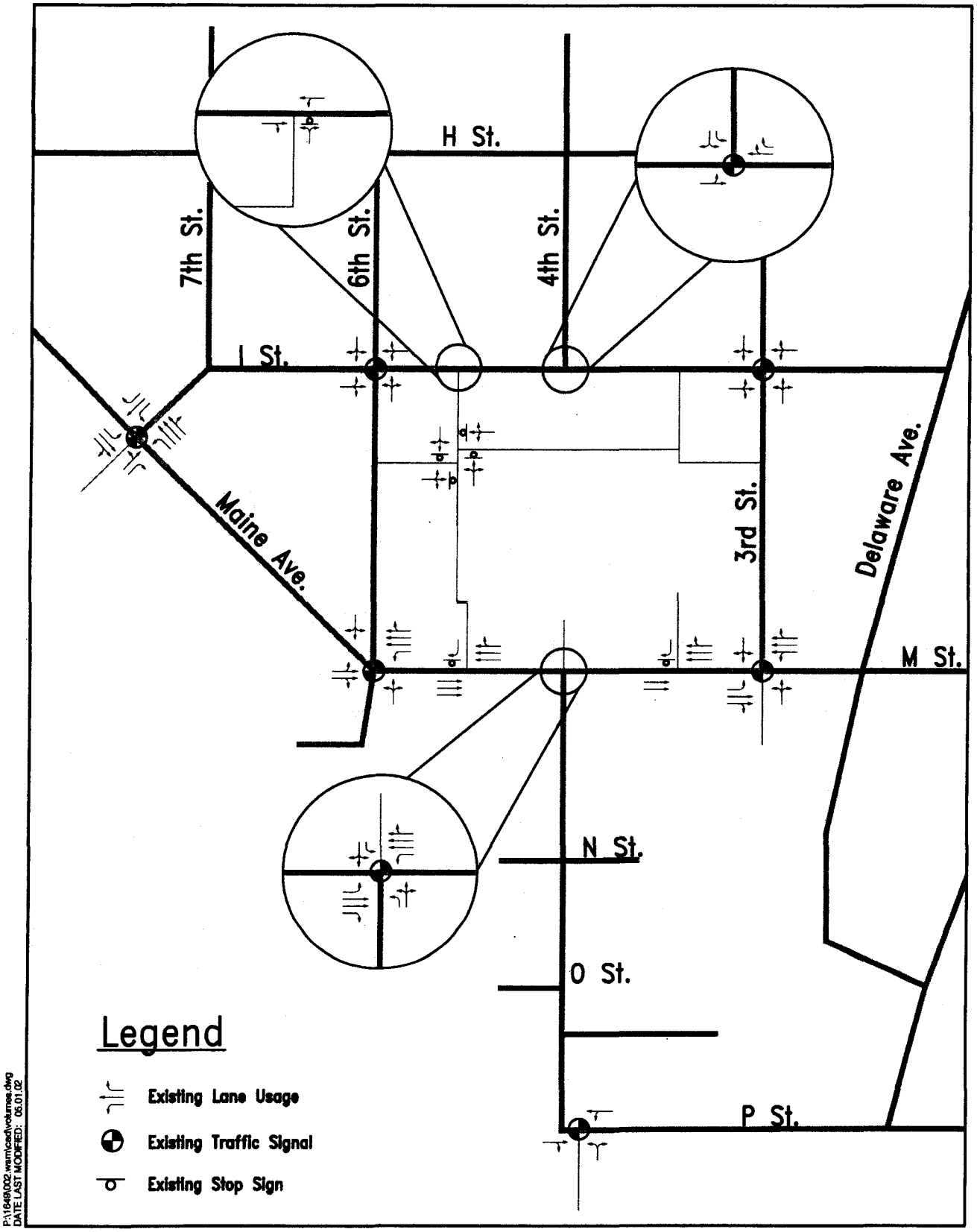
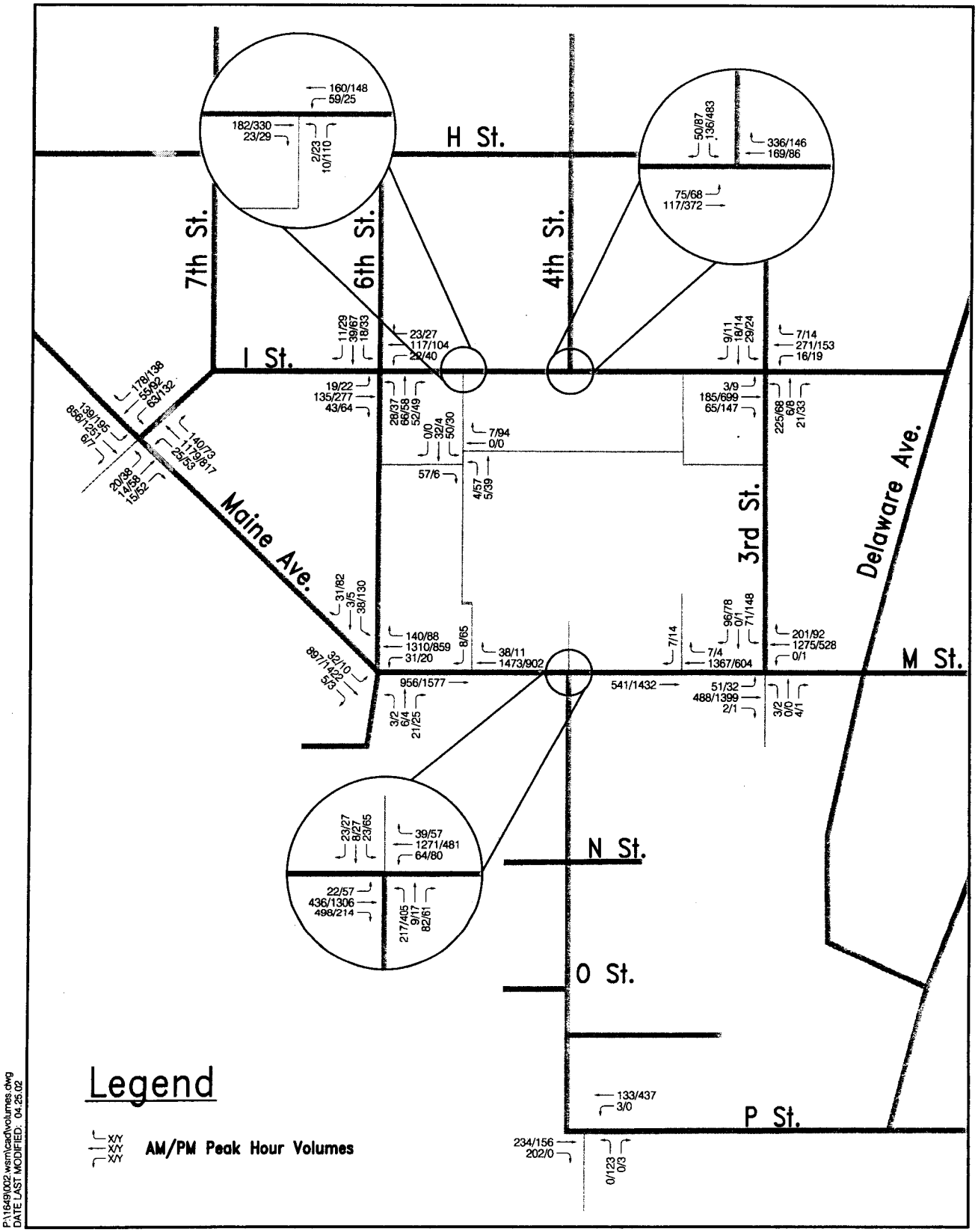


Figure 2
Existing Local Roadway Network



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Figure 3
Existing Peak Hour Volumes

Existing Conditions Capacity Analysis

Capacity analyses were performed for the existing morning and evening peak hours for the intersection within the study area using the existing traffic signal timings, Synchro, and the Highway Capacity Software 4.1b (HCS-2000). Table 1 gives the existing levels of service for the intersection by approach, where applicable based on HCS, and Figure 4 illustrates the capacity analysis results graphically. The detailed analysis worksheets are contained in the Technical Appendix.

Table 1
Existing Intersection Capacity Analysis

Roadway Intersection	Level of Service	
	AM Peak	PM Peak
Maine Avenue and 7th Street ***(signalized)***		
Overall	**C (25.1)**	**D (38.5)**
Eastbound Approach (7th)	C (20.2)	C (21.6)
Westbound Approach (7th)	B (13.4)	B (18.3)
Northbound Approach (Maine)	C (28.8)	C (22.6)
Southbound Approach (Maine)	C (23.9)	E (55.6)
6th Street and I Street ***(signalized)***		
Overall	**B (12.7)**	**B (17.0)**
Eastbound Approach	B (18.2)	C (23.9)
Westbound Approach	B (17.4)	C (20.3)
Northbound Approach	A (1.5)	A (1.7)
Southbound Approach	A (9.7)	B (10.5)
4th Street and I Street ***(signalized)***		
Overall	**C (34.3)**	**E (56.0)**
Eastbound Approach	C (20.8)	C (27.5)
Westbound Approach	D (43.1)	C (28.5)
Southbound Approach	C (24.3)	F (89.1)
3rd Street and I Street ***(signalized)***		
Overall	**B (12.5)**	**E (68.2)**
Eastbound Approach	B (17.5)	F (91.7)
Westbound Approach	B (15.5)	B (14.1)
Northbound Approach	A (4.0)	A (2.3)
Southbound Approach	B (12.3)	B (12.2)
6th Street and M Street ***(signalized)***		
Overall	**C (20.6)**	**C (20.9)**
Eastbound Approach	B (15.0)	C (24.4)
Westbound Approach	C (24.3)	B (15.6)
Northbound Approach	B (14.3)	B (14.3)
Southbound Approach	C (22.0)	C (22.1)
4th Street and M Street ***(signalized)***		
Overall	**D (36.5)**	**F (126.3)**
Eastbound Approach	C (25.9)	F (165.6)
Westbound Approach	D (44.4)	C (25.6)
Northbound Approach	D (36.8)	F (150.9)
Southbound Approach	C (22.7)	C (26.4)

Table 1
Existing Intersection Capacity Analysis (Cont.)

Roadway Intersection	Level of Service	
	AM Peak	PM Peak
3rd Street and M Street (signalized)		
Overall	**C (21.3)**	**B (17.9)**
Eastbound Approach	A (1.9)	B (17.3)
Westbound Approach	C (28.3)	B (17.5)
Northbound Approach	B (17.7)	B (17.6)
Southbound Approach	C (22.0)	C (23.4)

The results of the existing capacity analysis indicate that all of the intersections with the exceptions of the 4th Street and M street, 4th Street and Eye Street, and 3rd Street and Eye Street under P.M. conditions operate at an acceptable overall LOS "D" or better during the A.M. and P.M. commuter peak hours. The 4th Street and M Street intersection under P.M. conditions operates at an overall LOS "F" due to the northbound left turn approach to M street and the eastbound left turn approach to 4th Street/Waterfront Development. The intersection of 4th Street and Eye Street under P.M. conditions operates at and overall LOS "E" due to the southbound left turns from 4th Street to Eye Street. The 3rd Street and Eye Street intersection under the P.M. conditions operates at and overall LOS "E" due to the eastbound approach along Eye Street to 3rd Street. All other intersections operate at acceptable overall levels of service.

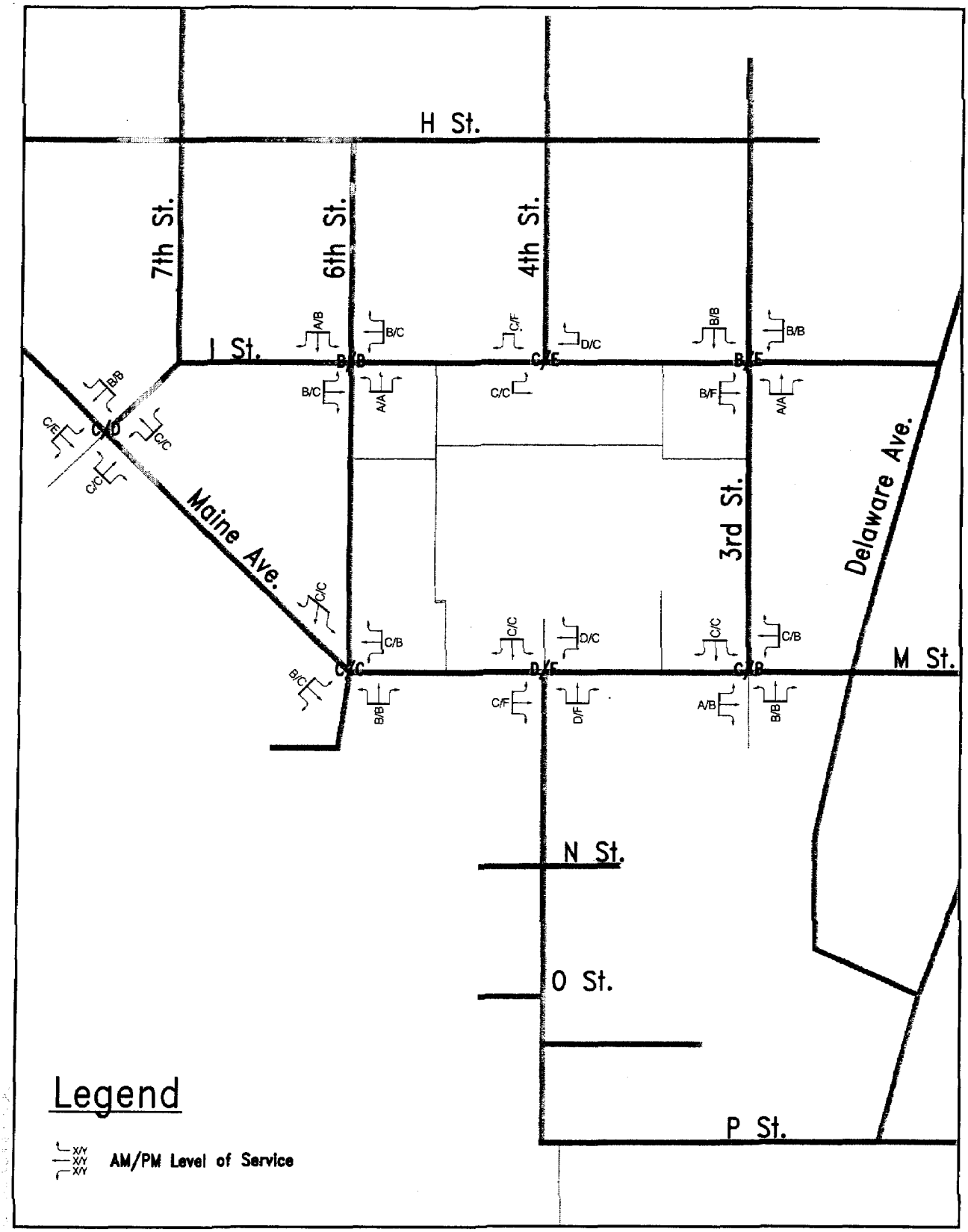


Figure 4
Existing Levels of Service

4TH STREET CONNECTION (2002) BASED ON EXISTING TRAFFIC VOLUMES

Proposed 4th Street Roadway Configuration

In order to determine the appropriate cross section for the newly constructed 4th Street from M Street in the south to Eye Street in the north, existing traffic volumes were redistributed along 4th Street based on global traffic patterns, local average daily traffic volumes, and peak hour turning movement traffic volumes within the vicinity of the site. A newly designed 4th Street was developed based on the redistributed traffic volumes along 4th Street. The 4th Street connection from M Street to Eye Street will consist of a 55-foot cross section from north to south. This cross section will allow for two parking lanes, two through lanes (one northbound and one southbound) and one left turn lane/bay. Each lane will be approximately 11 feet in width. The 55-foot cross section from north to south will also allow both ends of 4th street to align with the existing 4th Street cross section.

The new lane configuration at the 4th Street and M Street intersection is proposed to have one southbound left turn lane, one southbound through and left lane, and one southbound right turn lane. All other approaches to the intersection will maintain existing lane geometry. The proposed lane configuration at the 4th Street and Eye Street intersection will allow for one through-right turn lane and one left turn lane along both the northbound and southbound approaches to Eye Street with Eye Street remaining as existing conditions along the eastbound and westbound approaches to 4th Street.

In addition, 4th Street was assumed to have two garage access points, one garage access along the west side of 4th Street and one garage access to the east side of 4th Street. These garage access points will be approximately 400 feet south of Eye Street and directly across from one another. Each garage will have an exclusive left turn lane to access the site. The analysis only considers two garage access points along 4th Street as a worst-case scenario. Under the PUD application, the Waterfront Development shows 3 and sometimes 4 garage access points along 4th Street depending on site access alternatives. The additional garage access points will help reduce the two concentration of traffic at the proposed access points and therefore allow for similar conditions throughout the 4th Street connection. The proposed lane geometry within the vicinity of the site based on the existing traffic volumes is shown on Figure 5.

Existing Traffic Volumes Redistributed based on New 4th Street Connection

In order to determine the peak hour turning movement traffic volumes with the newly constructed 4th Street from M Street in the south to Eye Street in the north, existing traffic volumes were redistributed along 4th Street based on global traffic patterns, local average daily traffic volumes and peak hour turning movement traffic volumes within the vicinity of the site. The 4th Street only redistributed traffic volumes at the intersections of M Street with 4th Street and Eye Street with 4th Street are shown in Figure 6. The existing redistributed traffic volumes for the intersections contained within the study area are shown in Figure 7.

4th Street Connection changes to M Street

The M Street corridor will not be altered for the purposes of this report with the exception of the 4th Street and M Street intersection. Possible median breaks may occur at the M Street entrance to Safeway just east of 4th Street as well as the office entrance along M Street just west of 4th Street. The two median breaks would help alleviate possible vehicular circulation issues within the vicinity of the site as well as help discourage any possible U-Turn traffic at the up stream and downstream signals. A median break along M Street may also help relieve any congestion at the 4th Street and M Street Intersection. The median breaks along M Street were not included in this traffic study to allow for a more conservative baseline at the major intersections within the vicinity of the site. Further analysis may be necessary to evaluate the possibilities of breaking the median along M Street.

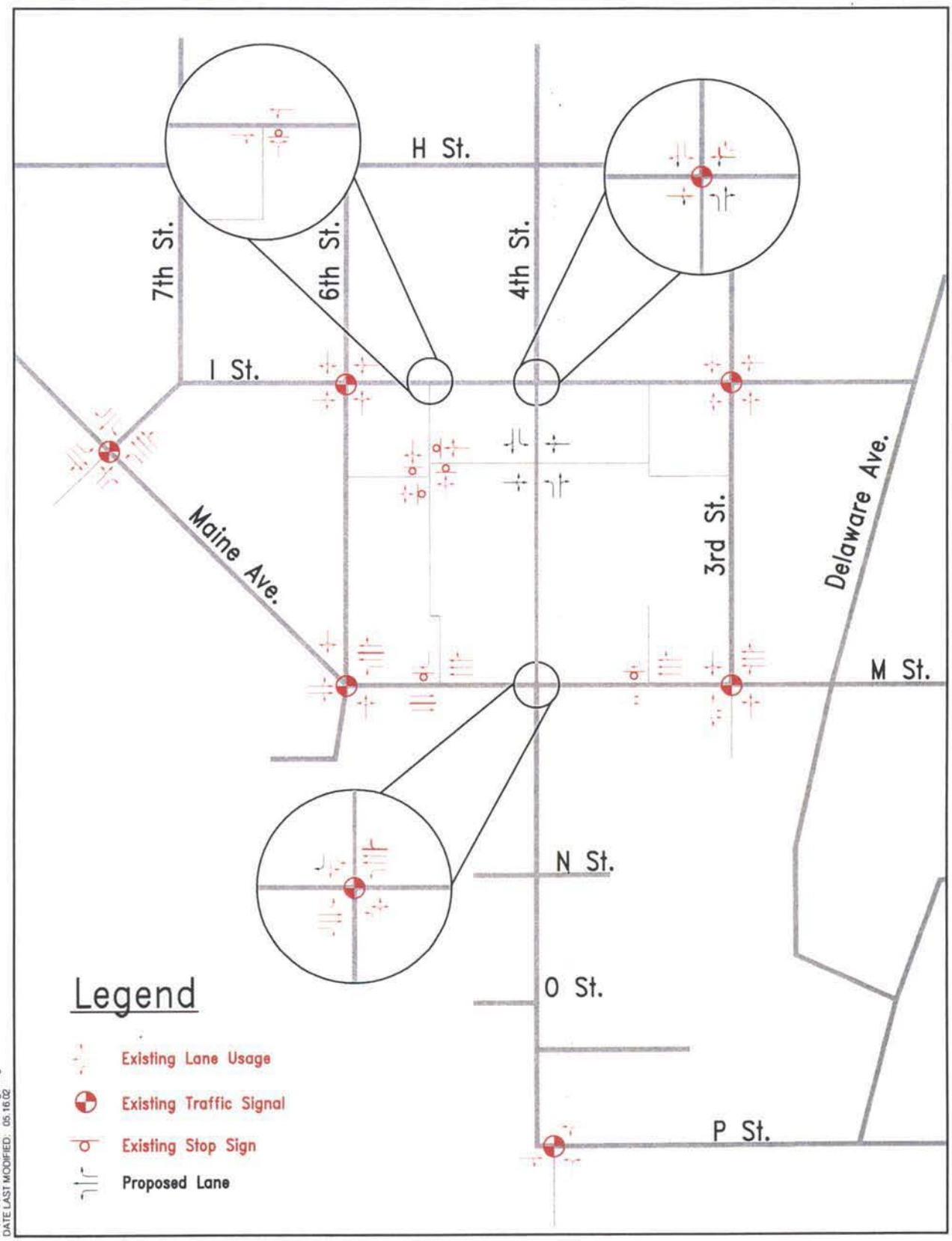


Figure 5
Proposed Local Roadway Network with 4th Street Connection

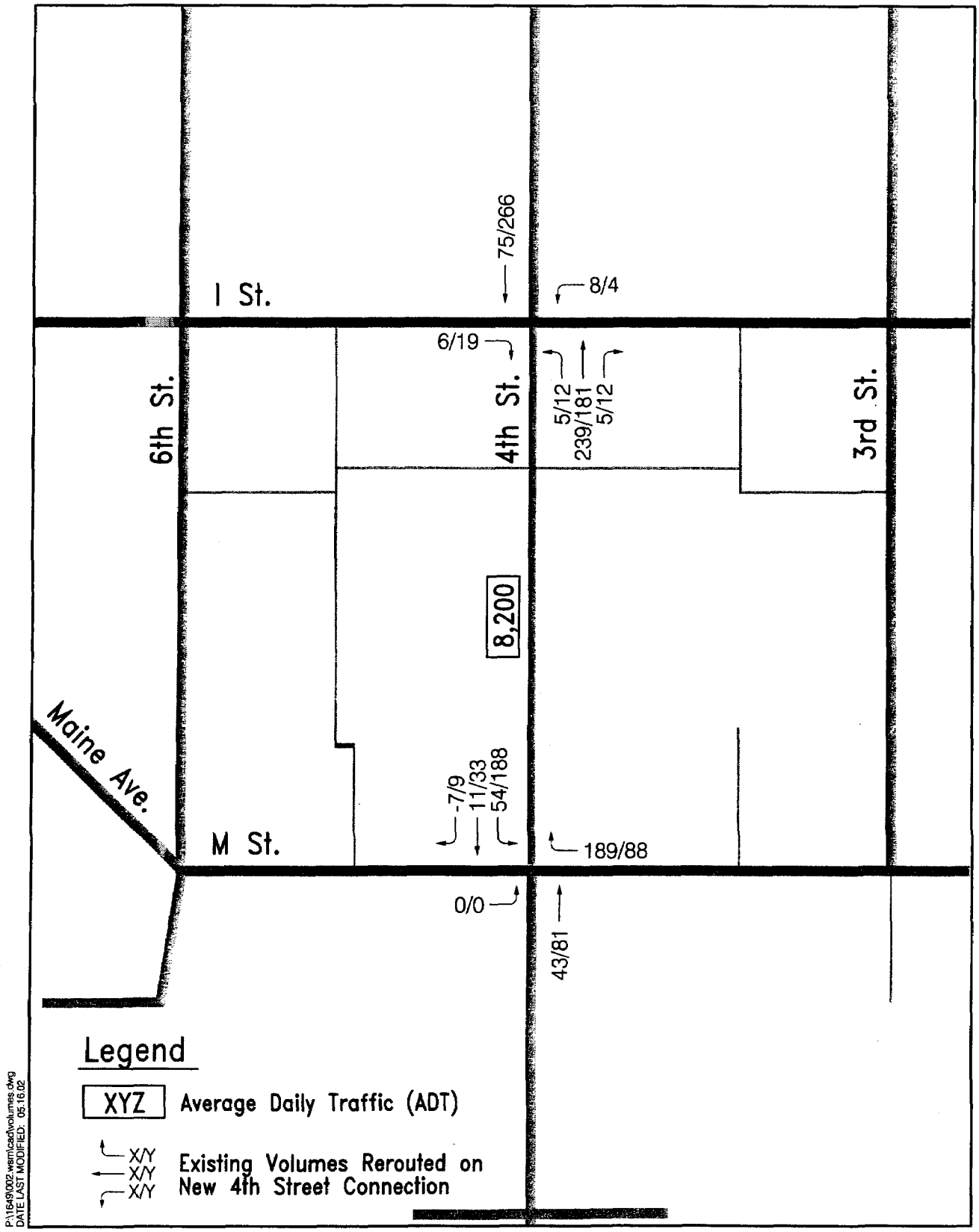


Figure 6
New 4th Street (between M Street & Eye Street) Volumes due to 4th Street Connection

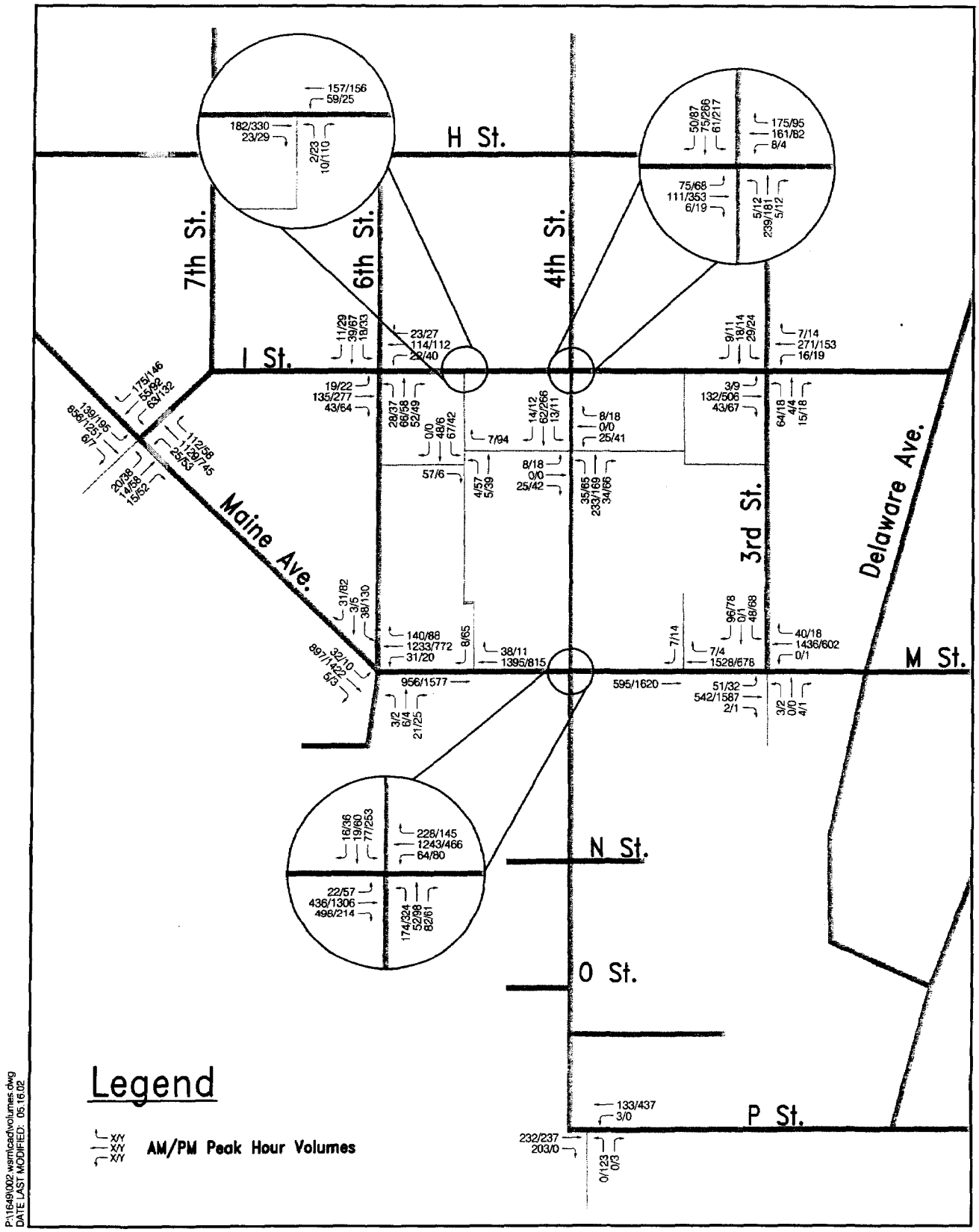


Figure 7
Existing Peak Hour Volumes Redistributed based on New 4th Street Connection

Existing Conditions Traffic Volumes with 4th Street Connection Capacity Analysis

Capacity analyses were performed for the existing traffic volumes, redistributed for the morning and evening peak hours using the Synchro and the Highway Capacity Software 4.1b (HCS-2000). Table 2 gives the redistributed 4th Street levels of service for the intersection within the study area by approach, where applicable based on HCS, and Figure 8 illustrates the capacity analysis results graphically. The detailed analysis worksheets are contained in the Technical Appendix.

Table 2
Existing Conditions Traffic Volumes with 4th Street Connections
Intersection Capacity Analysis

Roadway Intersection	Level of Service	
	AM Peak	PM Peak
Maine Avenue and 7th Street (signalized)		
Overall	**A (7.9)**	**B (17.5)**
Eastbound Approach (7th)	C (30.5)	C (26.7)
Westbound Approach (7th)	C (21.7)	C (28.2)
Northbound Approach (Maine)	A (6.3)	A (3.0)
Southbound Approach (Maine)	A (4.9)	C (22.4)
6th Street and I Street (signalized)		
Overall	**B (11.1)**	**B (11.1)**
Eastbound Approach	A (1.0)	A (7.6)
Westbound Approach	A (0.9)	A (6.2)
Northbound Approach	C (29.5)	B (16.2)
Southbound Approach	C (24.7)	C (21.8)
4th Street and I Street (signalized)		
Overall	**C (23.9)**	**C (27.8)**
Eastbound Approach	A (6.2)	C (22.9)
Westbound Approach	A (9.2)	B (14.5)
Northbound Approach	D (45.7)	C (30.9)
Southbound Approach	D (40.0)	C (34.8)
3rd Street and I Street (signalized)		
Overall	**A (9.1)**	**A (5.1)**
Eastbound Approach	A (2.2)	A (1.4)
Westbound Approach	A (2.5)	A (4.8)
Northbound Approach	C (33.9)	C (29.3)
Southbound Approach	C (28.7)	C (29.8)
6th Street and M Street (signalized)		
Overall	**A (4.1)**	**A (7.5)**
Eastbound Approach	A (4.9)	A (9.0)
Westbound Approach	A (0.7)	A (2.1)
Northbound Approach	D (35.1)	B (13.4)
Southbound Approach	D (49.7)	B (18.7)
4th Street and M Street (signalized)		
Overall	**B (11.7)**	**D (40.1)**
Eastbound Approach	B (15.2)	C (33.8)
Westbound Approach	A (3.8)	D (38.4)
Northbound Approach	C (31.0)	D (53.0)
Southbound Approach	D (38.0)	D (54.3)

Table 2
Existing Conditions Traffic Volumes with 4th Street Connections
Intersection Capacity Analysis
(Cont.)

Roadway Intersection	Level of Service	
	AM Peak	PM Peak
3rd Street and M Street (signalized)		
Overall	**B (10.9)**	**A (5.5)**
Eastbound Approach	A (1.4)	A (1.6)
Westbound Approach	B (12.0)	A (9.7)
Northbound Approach	C (28.2)	C (25.7)
Southbound Approach	D (37.2)	C (30.9)
4th Street and Proposed Site Entrances (unsignalized)		
Overall	**N/A**	**N/A**
Eastbound Approach	B (11.3)	A (9.5)
Westbound Approach	B (14.3)	B (12.0)
Northbound Left Turn	A (8.0)	A (7.4)
Southbound Left Turn	A (7.8)	A (7.9)

The results of the existing redistributed capacity analysis indicate that all of the intersections within the vicinity of the site will operate at an acceptable overall LOS "D" or better during the A.M. and P.M. commuter peak hours. Each intersection within the vicinity of the site will operate at acceptable levels of service due to the redistribution of traffic along 4th Street along with the adjustment of the signal timings and signal cycle length. All intersections within the vicinity of the site were analyzed with Synchro to determine the best offsets, cycle lengths, and signal timings. The Synchro analyses were then transferred into the Highway Capacity Software to report the levels of service at each intersection. All other intersections operate at acceptable overall levels of service.

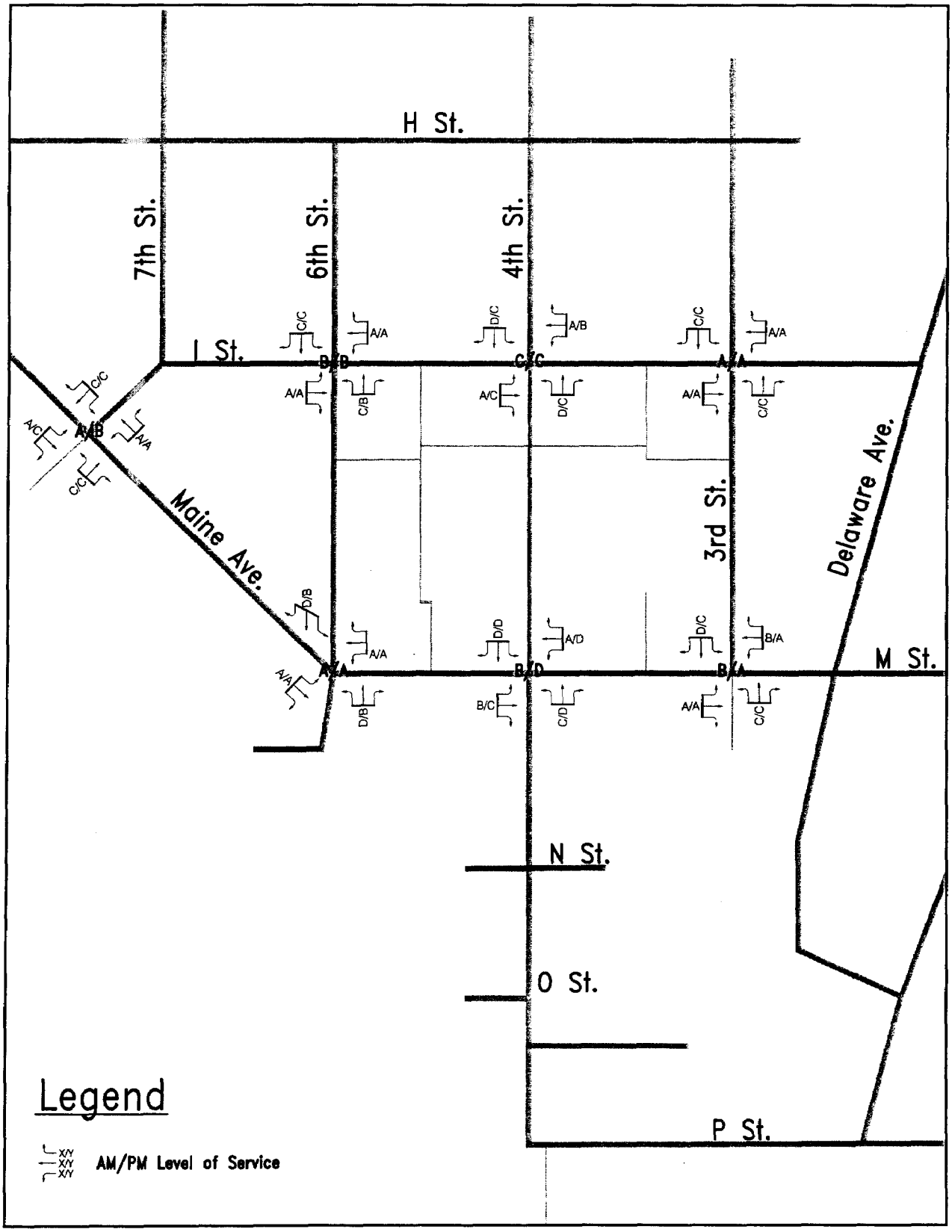


Figure 8
Existing Levels of Service with New 4th Street Connection

TOTAL FUTURE DEVELOPMENT CONDITIONS PHASE I (2005)

Proposed Development Phase I Traffic Generation

The Waterfront Development will include a total of 1,694,500 square feet of development, inclusive of existing development, under Phase I with 1,419,500 square feet developed as General Office, 45,000 square feet developed as Ground Floor Retail, 200,000 square feet of residential apartments (200 units), and the remaining 30,000 square feet developed as Super Market retail. Traffic volumes for the proposed site were generated for the a.m. and p.m. peak hours, as well as for the average daily trips. The methodology outlined in the Institute of Transportation Engineers' (ITE) Trip Generation, 6th Edition publication as well as the 1989 WMATA transit use study was used to determine the trip generation and appropriate trip reduction for the site. The results of the calculations are presented in Table 3.

Table 3
Trip Calculations of Existing Conditions and Total Future 2005

				Weekday					
	ITE			A.M. Peak Hour			P.M. Peak Hour		
Land Use	**Code**	**Size**							
Proposed				TOTAL	In	Out	TOTAL	In	Out
EXISTING GENERAL OFFICE									
General Office Building	710	1,117,500	Sq Ft	**256**	**225**	**31**	**266**	**45**	**221**
EXISTING RETAIL									
Supermarket	850	30,000	Sq Ft	**5**	**3**	**2**	**70**	**36**	**34**
Specialty Retail Center	814	104,500	Sq Ft	**3**	**2**	**1**	**27**	**12**	**15**
EXISTING TOTAL		**1,252,000**							
Existing Site Trips				**264**	**230**	**34**	**363**	**93**	**270**
PROPOSED GENERAL OFFICE									
General Office Building	710	1,419,500	Sq Ft	**309**	**272**	**37**	**334**	**57**	**277**
PROPOSED RETAIL & RESIDENTIAL									
Supermarket	850	30,000	Sq Ft	**5**	**3**	**2**	**70**	**36**	**34**
Specialty Retail Center	814	45,000	Sq Ft	**3**	**2**	**1**	**12**	**5**	**7**
Apartments	220	200	Units	**20**	**3**	**17**	**25**	**17**	**8**
PROPOSED TOTAL		**1,694,500**							
Proposed Site Trips				**337**	**280**	**57**	**441**	**115**	**326**
NEW SITE TRIPS FROM EXISTING									
Total New Trips				**73**	**50**	**23**	**78**	**22**	**56**

Note: Volumes trip generation is based on ITE and WMATA Trip reduction

Proposed Site Trip Distribution and Assignment

The nature of the Waterfront Development and regional traffic patterns were analyzed in order to determine the trip distribution for vehicles accessing the site. In addition, an assessment of future roadway conditions was used to determine the routes that will provide the most convenient access to the development. Based on this review, the distribution for site traffic and resulting trip assignment were determined and are shown in Figures 9 and 10 respectively.

Total Future Development Phase I Traffic Volumes

In order to determine the traffic volumes present on the roadways in the vicinity of the development site under the Phase I build 2005 conditions, the proposed development traffic volumes were added to the 2005 future background traffic volumes. The future background traffic volumes were determined based on an inherent growth rate of one (1) percent per year globally within the vicinity of the site for a total of three (3) percent over the three years. The background growth rate was determined based on historical background data and prior traffic studies conducted by Gorove/Slade Associates Inc. The traffic volumes for total future traffic conditions are shown in Figure 11.

Total Future Development Capacity Analysis

Capacity analysis was performed for the year 2005 total future phase I conditions with the results of the analysis summarized in Table 4. In addition, the Technical Appendix contains the HCS report printouts for a detailed review of the HCS analysis, and Figure 12 depicts the capacity analysis results graphically.

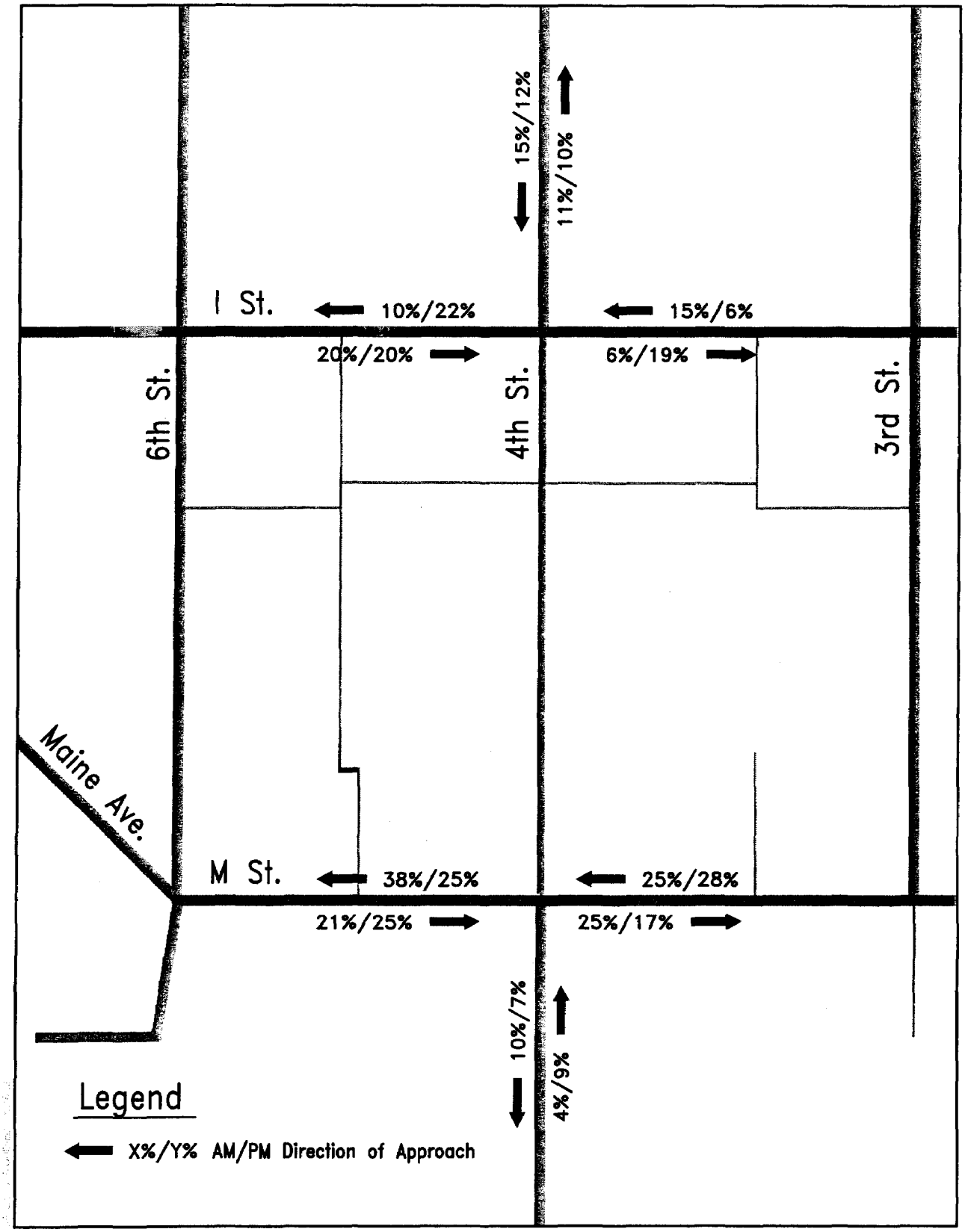


Figure 9
Distribution of Site Traffic (Direction of Approach)

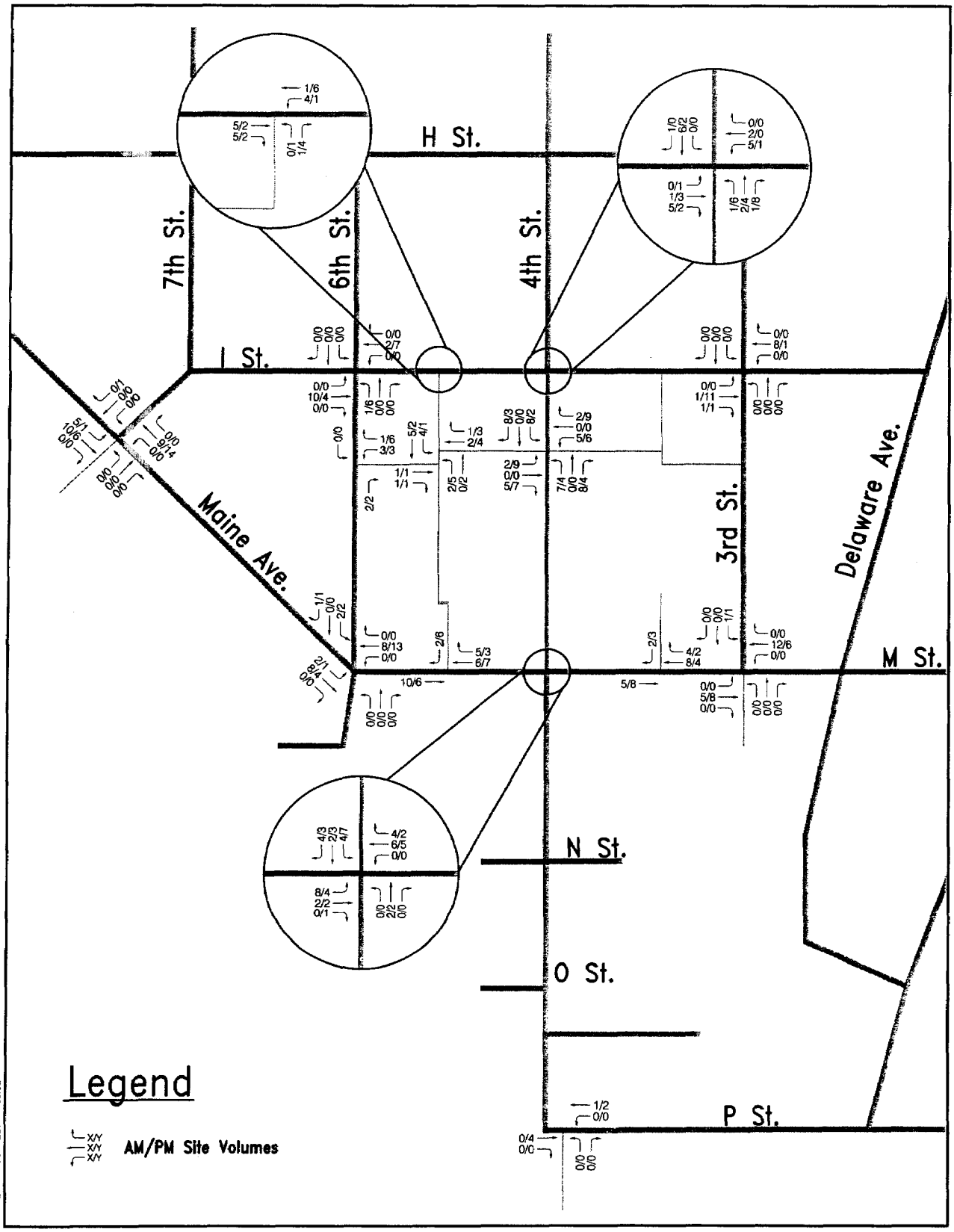
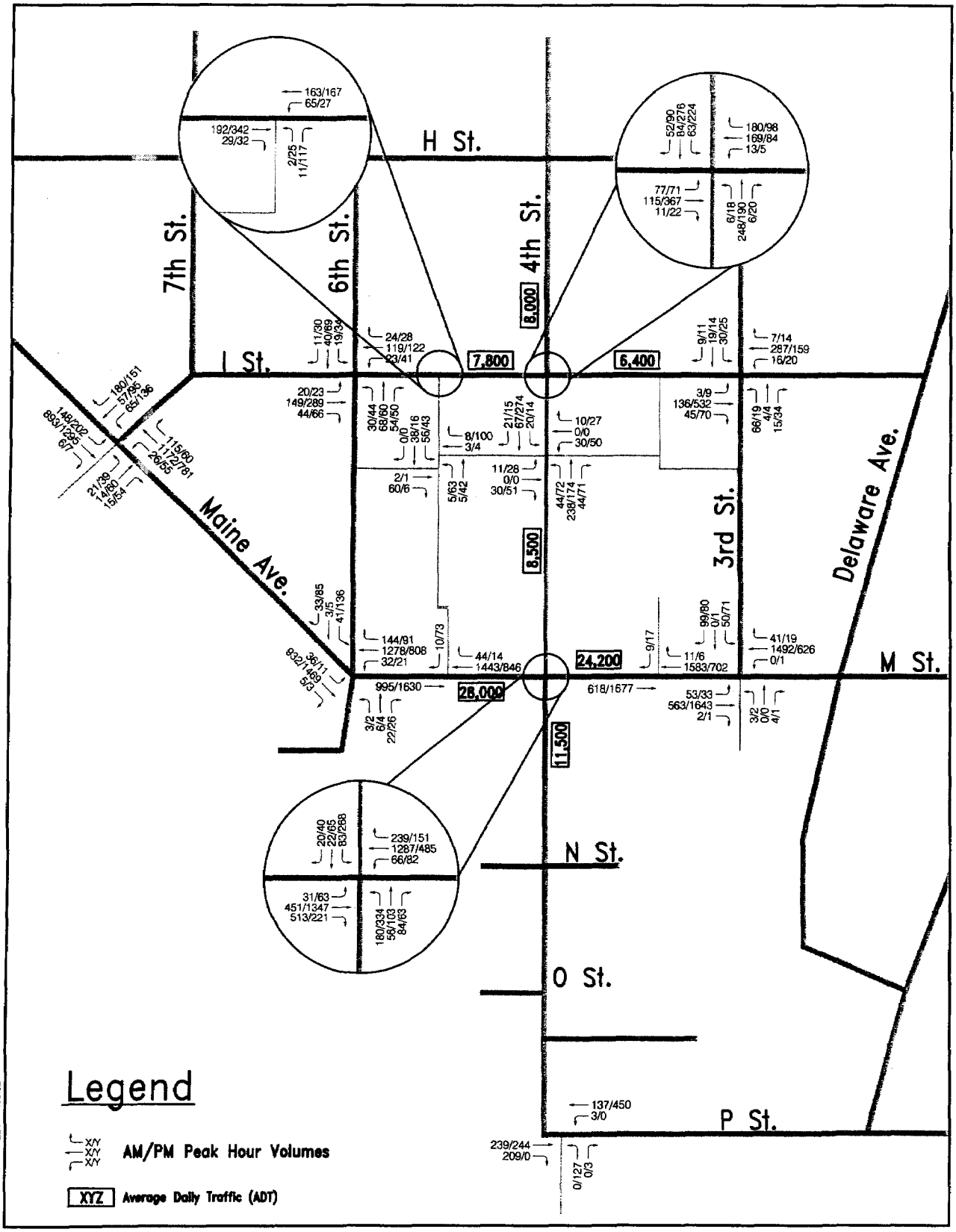


Figure 10
Phase I - Build-out 2005
Site Generated Volumes



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Figure 11
Phase I - Build-out 2005
Total Future Traffic Volumes

Table 4
Total Future Phase I (2005) Intersection Capacity Analysis

Roadway Intersection		Level of Service	
		AM Peak	PM Peak
Maine Avenue and 7th Street	***(signalized)***		
Overall		**A (8.9)**	**B (19.2)**
Eastbound Approach (7th)		C (21.9)	C (31.1)
Westbound Approach (7th)		B (18.7)	C (33.0)
Northbound Approach (Maine)		A (4.7)	A (7.0)
Southbound Approach (Maine)		B (10.7)	C (21.7)
6th Street and I Street	***(signalized)***		
Overall		**B (12.7)**	**B (10.6)**
Eastbound Approach		A (4.1)	A (6.8)
Westbound Approach		A (3.8)	A (2.2)
Northbound Approach		C (30.0)	B (18.7)
Southbound Approach		C (22.2)	C (23.9)
4th Street and I Street	***(signalized)***		
Overall		**B (17.6)**	**C (34.9)**
Eastbound Approach		A (10.0)	B (19.6)
Westbound Approach		A (9.6)	B (15.0)
Northbound Approach		C (26.8)	D (37.7)
Southbound Approach		C (27.8)	D (52.2)
3rd Street and I Street	***(signalized)***		
Overall		**B (10.3)**	**A (5.5)**
Eastbound Approach		A (4.3)	A (1.4)
Westbound Approach		A (4.9)	A (4.9)
Northbound Approach		C (31.8)	C (30.3)
Southbound Approach		C (26.8)	C (29.9)
6th Street and M Street	***(signalized)***		
Overall		**A (3.1)**	**A (6.2)**
Eastbound Approach		A (2.7)	A (4.0)
Westbound Approach		A (0.7)	A (2.9)
Northbound Approach		C (31.8)	C (20.1)
Southbound Approach		D (41.3)	C (32.1)
4th Street and M Street	***(signalized)***		
Overall		**B (16.0)**	**D (45.8)**
Eastbound Approach		B (15.5)	D (49.8)
Westbound Approach		B (11.9)	C (30.0)
Northbound Approach		C (28.7)	D (52.6)
Southbound Approach		D (39.1)	D (50.0)
3rd Street and M Street	***(signalized)***		
Overall		**A (3.9)**	**A (6.0)**
Eastbound Approach		A (2.0)	A (1.9)
Westbound Approach		A (2.1)	A (9.7)
Northbound Approach		C (22.7)	C (28.9)
Southbound Approach		C (28.7)	C (35.0)

Table 4
Total Future Phase I (2005) Intersection Capacity Analysis
(Cont.)

Roadway Intersection	Level of Service	
	AM Peak	PM Peak
4th Street and Proposed Site Entrances (unsignalized)		
Overall	N/A	N/A
Eastbound Approach	A (9.9)	B (14.1)
Westbound Approach	B (12.8)	C (17.9)
Northbound Left Turn	A (7.5)	A (8.1)
Southbound Left Turn	A (7.9)	A (7.8)

The results of the total future Phase I (2005) capacity analysis indicate that all of the intersections within the vicinity of the site will operate at an acceptable overall LOS "D" or better during the A.M. and P.M. commuter peak hours. Each intersection within the vicinity of the site will operate at acceptable levels of service due to the adjustment of the signal timings and signal cycle lengths. All intersections within the vicinity of the site were analyzed with Synchro to determine the best offsets, cycle lengths, and signal timings. The Synchro analyses were then transferred into the Highway Capacity Software to report the levels of service at each intersection.

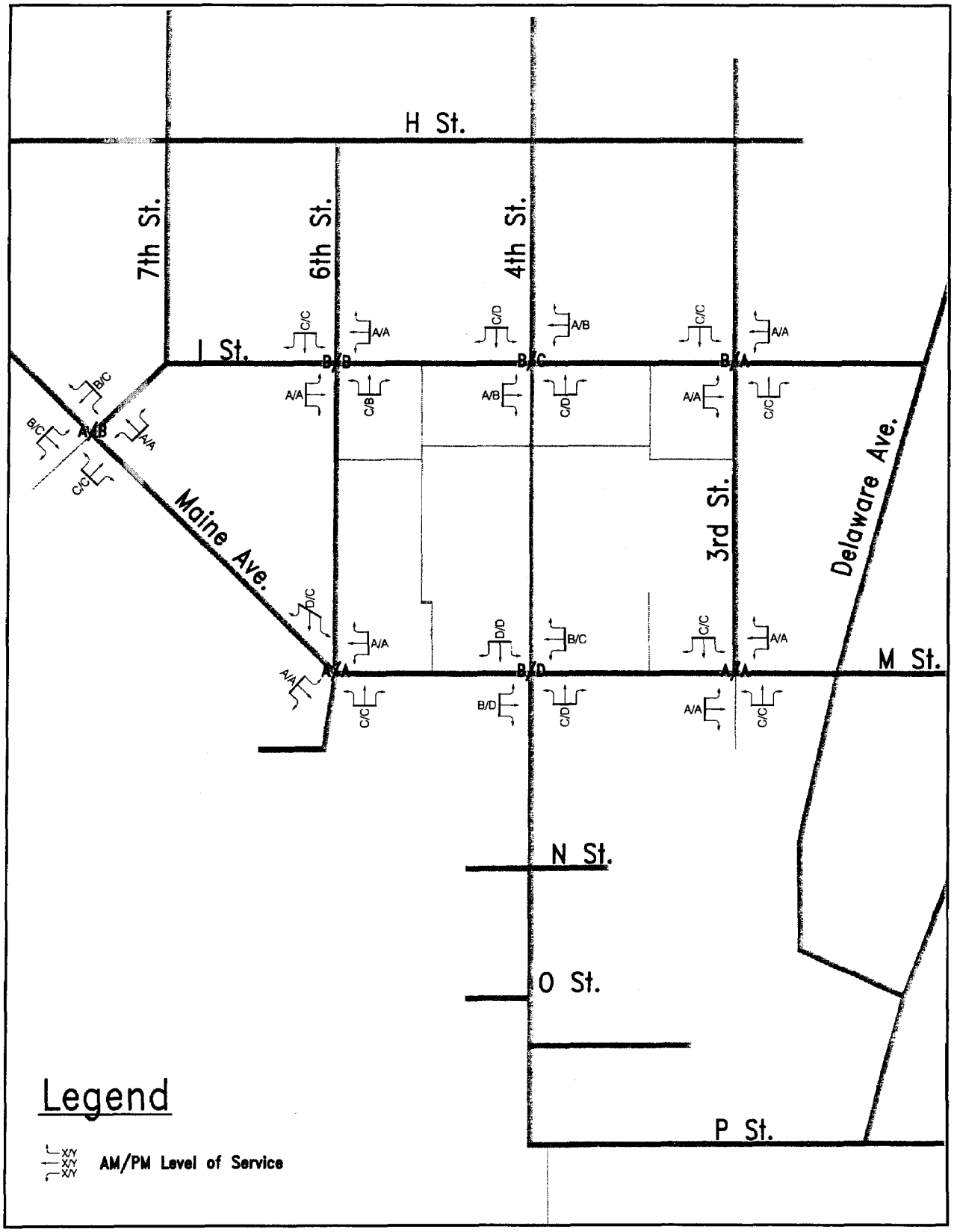


Figure 12
Phase I - Build-out 2005
Total Future Peak Hour Levels of Service

TOTAL FUTURE PHASE II (2010)

Proposed Development Phase II Traffic Generation

The Waterfront Development will consist of 2,108,200 square feet of development under Phase II with 1,693,500 square feet developed as General Office, 45,000 square feet developed as Ground Floor Retail, 200,000 square feet of residential apartments (200 units), and the remaining 30,000 square feet developed as Super Market retail. Traffic volumes for the proposed site were generated for the a.m. and p.m. peak hours, as well as for the average daily trips. The methodology outlined in the Institute of Transportation Engineers' (ITE) Trip Generation, 6th Edition publication as well as the 1989 WMATA transit use study was used to determine the trip generation and appropriate trip reduction for the site. The results of the calculations are presented in Table 5.

Table 5
Trip Calculations of Existing Conditions and Total Future 2010

				Weekday					
	ITE			A.M. Peak Hour			P.M. Peak Hour		
Land Use	**Code**	**Size**							
Proposed				TOTAL	In	Out	TOTAL	In	Out
EXISTING GENERAL OFFICE									
General Office Building	710	1,117,500	Sq Ft	**256**	**225**	**31**	**266**	**45**	**221**
EXISTING RETAIL									
Supermarket	850	30,000	Sq Ft	**5**	**3**	**2**	**70**	**36**	**34**
Specialty Retail Center	814	104,500	Sq Ft	**3**	**2**	**1**	**27**	**12**	**15**
EXISTING TOTAL		**1,252,000**							
Existing Site Trips				**264**	**230**	**34**	**363**	**93**	**270**
PROPOSED GENERAL OFFICE									
General Office Building	710	1,693,500	Sq Ft	**356**	**313**	**43**	**395**	**67**	**328**
PROPOSED RETAIL & RESIDENTIAL									
Supermarket	850	30,000	Sq Ft	**5**	**3**	**2**	**70**	**36**	**34**
Specialty Retail Center	814	45,000	Sq Ft	**3**	**2**	**1**	**12**	**5**	**7**
Apartments	220	200	Units	**20**	**3**	**17**	**25**	**17**	**8**
PROPOSED TOTAL		**2,108,200**							
Proposed Site Trips				**384**	**321**	**63**	**502**	**125**	**377**
NEW SITE TRIPS FROM EXISTING									
Total New Trips				**120**	**91**	**29**	**139**	**32**	**107**

Note: Volumes trip generation is based on ITE and WMATA Trip reduction

Total Future Development Phase II Traffic Volumes

In order to determine the traffic volumes present on the roadways in the vicinity of the development site under the Phase II build 2010 conditions, the proposed development traffic volumes were added to the 2010 future background traffic volumes. The future background traffic volumes were determined based on an inherent growth rate of one (1) percent per year globally within the vicinity of the site for a total of 8.3 percent over the 8 years. The site generated traffic volumes along with the total future traffic volumes for Phase II condition is shown in Figures 13 and 14 respectively.

Total Future Development Phase II Capacity Analysis

Capacity analysis was performed for the year 2010 total future phase II conditions with the results of the analysis summarized in Table 6. In addition, the Technical Appendix contains the HCS report printouts for a detailed review of the HCS analysis, and Figure 15 depicts the capacity analysis results graphically.

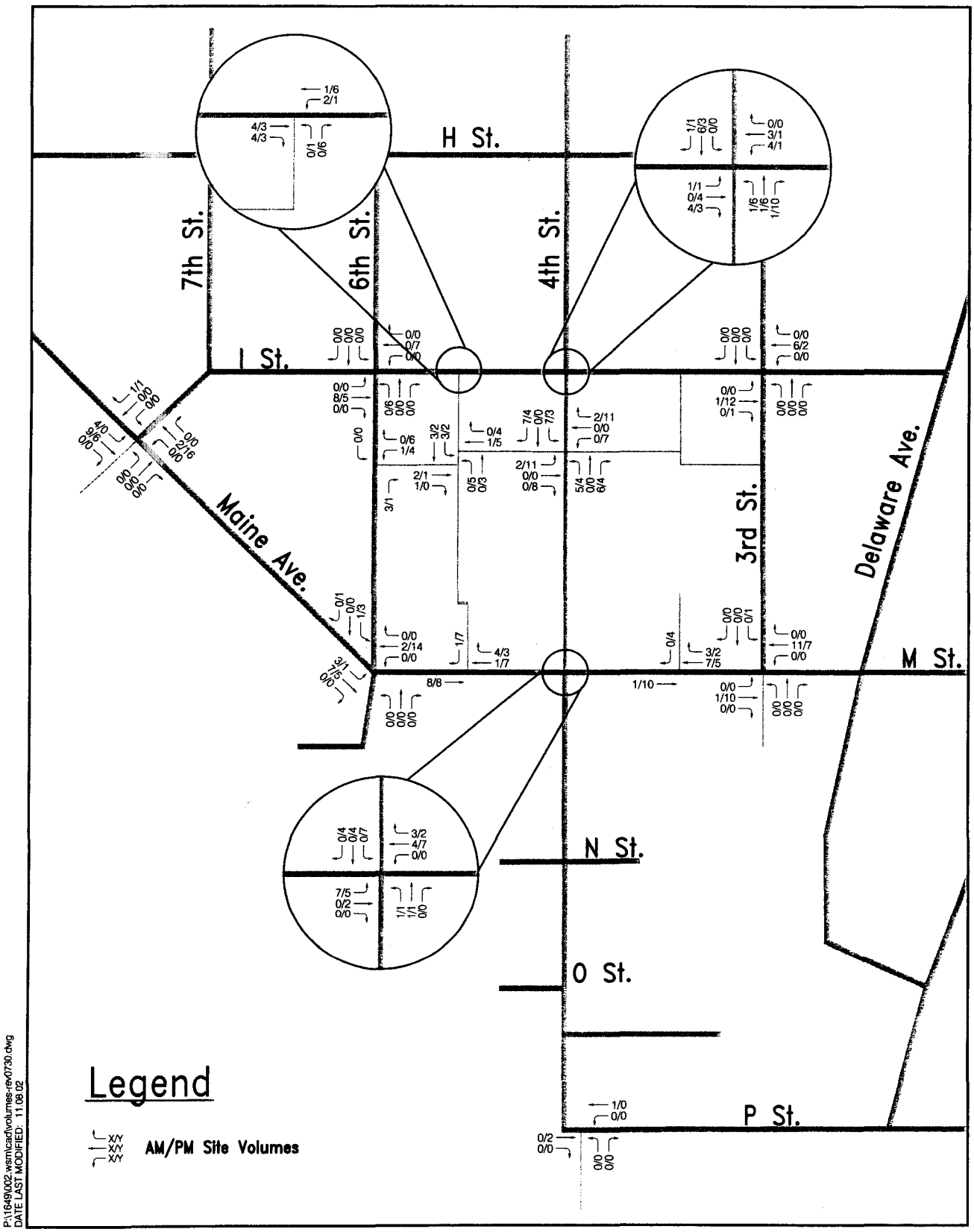


Figure 13
Phase I (2005) to Phase II (2010)
New Site Generated Volumes

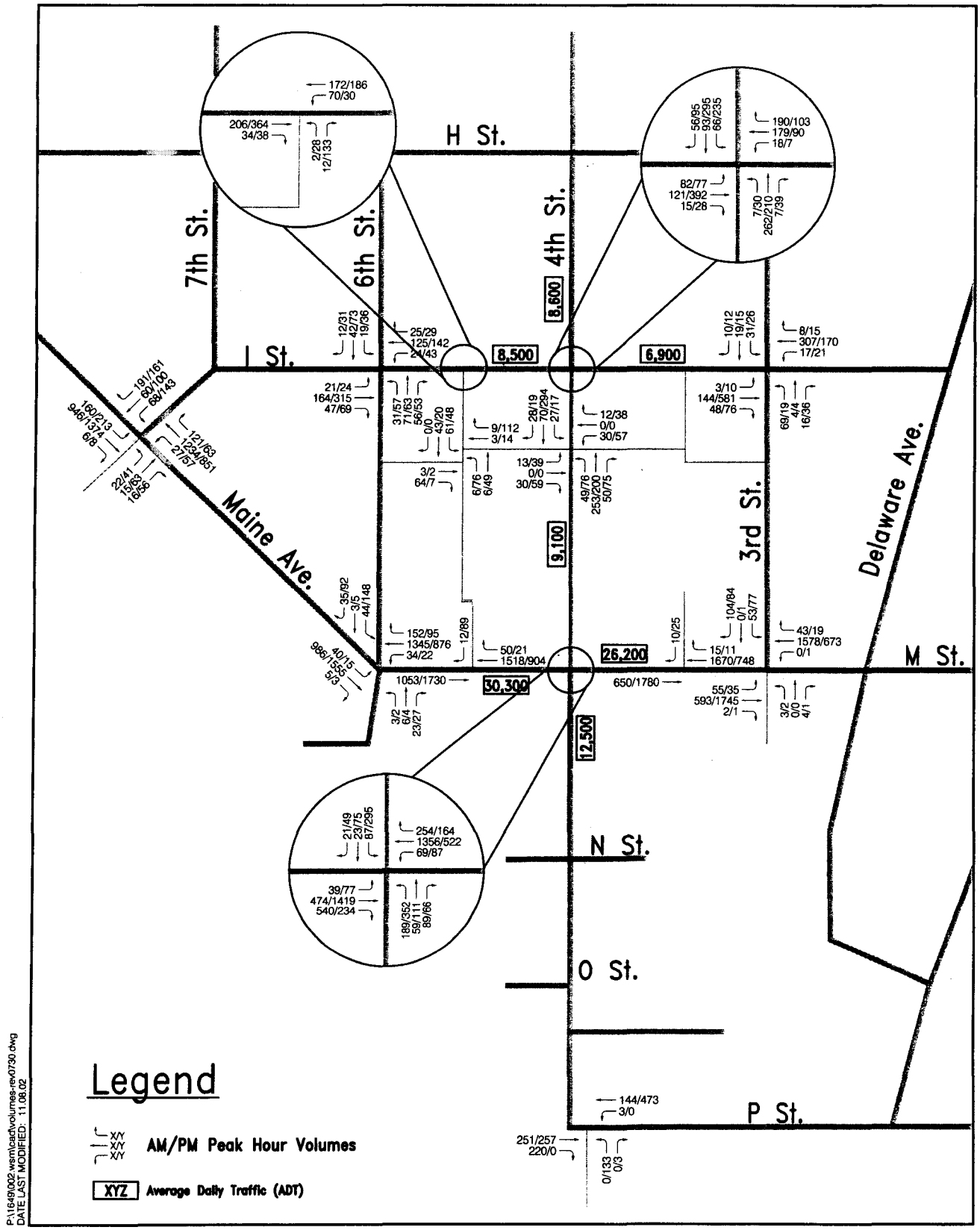


Figure 14
Phase II - Build-out 2010
Total Future Traffic Volumes

Table 6
Total Future Phase II (2010) Intersection Capacity Analysis

Roadway Intersection		Level of Service	
		AM Peak	PM Peak
Maine Avenue and 7th Street	***(signalized)***		
Overall		**B (13.5)**	**C (23.4)**
Eastbound Approach (7th)		C (23.2)	C (34.6)
Westbound Approach (7th)		B (18.5)	D (40.1)
Northbound Approach (Maine)		B (13.5)	B (13.4)
Southbound Approach (Maine)		B (11.8)	C (24.1)
6th Street and I Street	***(signalized)***		
Overall		**B (12.3)**	**B (15.6)**
Eastbound Approach		A (3.8)	A (6.4)
Westbound Approach		A (3.5)	A (5.1)
Northbound Approach		C (29.2)	C (34.4)
Southbound Approach		C (24.1)	D (35.5)
4th Street and I Street	***(signalized)***		
Overall		**B (18.8)**	**C (30.1)**
Eastbound Approach		B (10.5)	C (30.8)
Westbound Approach		B (10.1)	B (16.6)
Northbound Approach		C (28.8)	D (37.5)
Southbound Approach		C (30.2)	C (30.5)
3rd Street and I Street	***(signalized)***		
Overall		**A (9.1)**	**A (5.3)**
Eastbound Approach		A (2.2)	A (1.3)
Westbound Approach		A (2.6)	A (4.3)
Northbound Approach		D (35.3)	C (30.8)
Southbound Approach		C (29.3)	C (30.6)
6th Street and M Street	***(signalized)***		
Overall		**A (5.0)**	**A (6.1)**
Eastbound Approach		A (7.9)	A (5.2)
Westbound Approach		A (1.1)	A (1.1)
Northbound Approach		C (28.1)	B (19.9)
Southbound Approach		C (30.3)	C (30.4)
4th Street and M Street	***(signalized)***		
Overall		**B (19.3)**	**D (51.3)**
Eastbound Approach		B (15.0)	D (39.6)
Westbound Approach		B (18.0)	D (44.4)
Northbound Approach		C (33.2)	E (79.0)
Southbound Approach		D (35.4)	E (77.4)
3rd Street and M Street	***(signalized)***		
Overall		**A (9.0)**	**A (6.1)**
Eastbound Approach		A (2.4)	A (1.7)
Westbound Approach		A (8.9)	A (9.5)
Northbound Approach		C (27.4)	C (27.3)
Southbound Approach		D (36.5)	D (38.7)

Table 6
Total Future Phase II (2010) Intersection Capacity Analysis
(Cont.)

Roadway Intersection	Level of Service	
	AM Peak	PM Peak
4th Street and Proposed Site Entrances (unsignalized)		
Overall	N/A	N/A
Eastbound Approach	B (10.4)	C (16.6)
Westbound Approach	B (13.4)	C (20.6)
Northbound Left Turn	A (7.5)	A (8.2)
Southbound Left Turn	A (8.0)	A (7.9)

The results of the total future Phase II (2010) capacity analysis indicate that all of the intersections within the vicinity of the site will operate at an acceptable overall LOS "D" or better during the A.M. and P.M. commuter peak hours. Each intersection within the vicinity of the site will operate at acceptable levels of service due to the adjustment of the signal timings and signal cycle lengths. All intersections within the vicinity of the site were analyzed with Synchro to determine the best offsets, cycle lengths, and signal timings. The Synchro analyses were then transferred into the Highway Capacity Software to report the levels of service at each intersection.

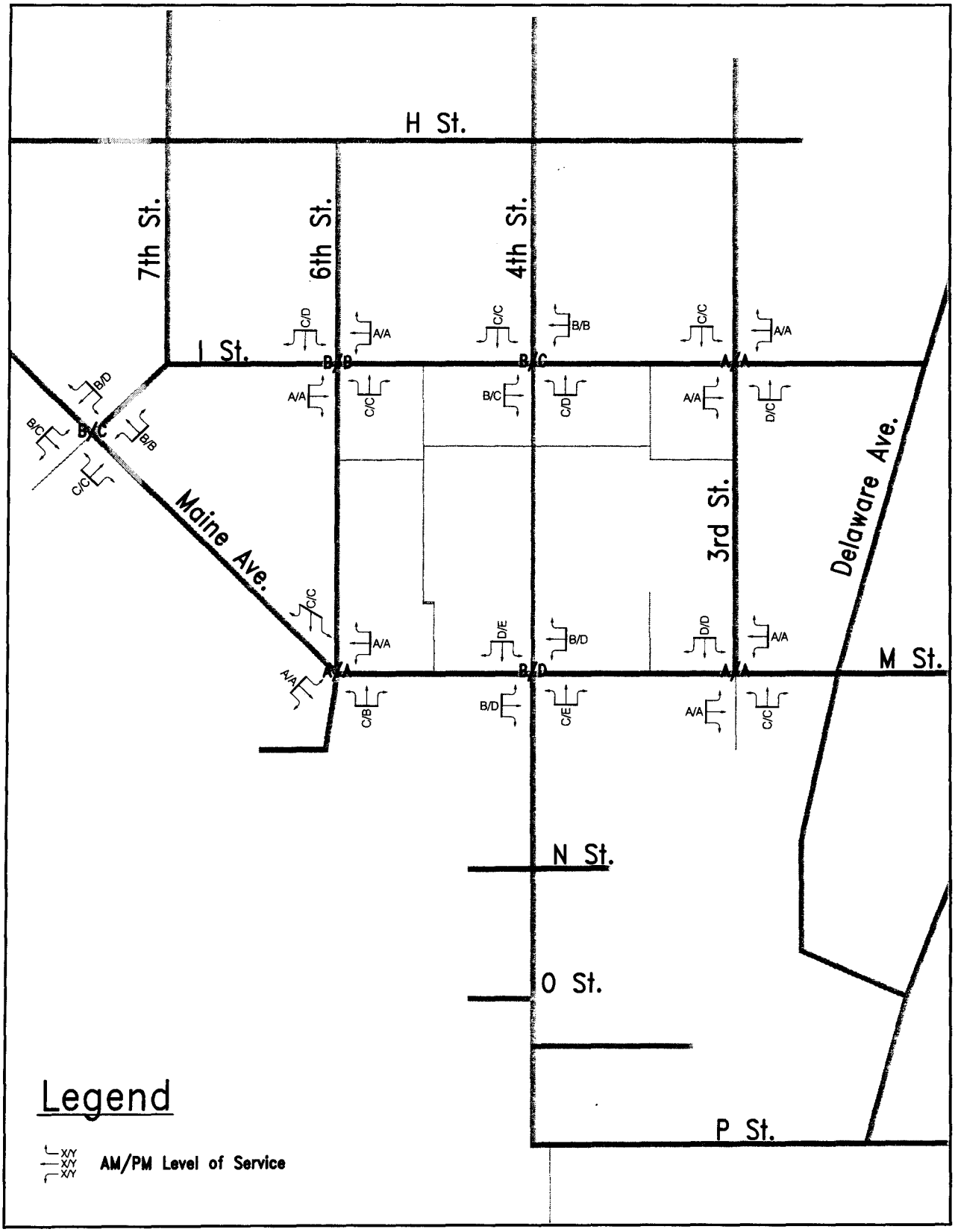


Figure 15
Phase II - Build-out 2010
Total Future Peak Hour Levels of Service

TOTAL FUTURE PHASE III BUILDOUT (2022)

Proposed Development Phase III Traffic Generation

The Waterfront Development will consist of 2,476,500 square feet of development under Phase III with 2,001,500 square feet developed as General Office, 45,000 square feet developed as Ground Floor Retail, 400,000 square feet of residential apartments (400 units), and the remaining 30,000 square footage developed as Super Market retail. Traffic volumes for the proposed site were generated for the a.m. and p.m. peak hours, as well as for the average daily trips. The methodology outlined in the Institute of Transportation Engineers' (ITE) Trip Generation, 6th Edition publication as well as the 1989 WMATA transit use study was used to determine the trip generation and appropriate trip reduction for the site. The results of the calculations are presented in Table 7.

Table 7
Trip Calculations of Existing Conditions and Total Future 2022

					Weekday					
		ITE			A.M. Peak Hour			P.M. Peak Hour		
Land Use		Code	Size		TOTAL	In	Out	TOTAL	In	Out
EXISTING GENERAL OFFICE										
	General Office Building	710	1,117,500	Sq Ft	256	225	31	266	45	221
EXISTING RETAIL										
	Supermarket	850	30,000	Sq Ft	5	3	2	70	36	34
	Specialty Retail Center	814	104,500	Sq Ft	3	2	1	27	12	15
EXISTING TOTAL			1,252,000							
	Existing Site Trips				264	230	34	363	93	270
PROPOSED GENERAL OFFICE										
	General Office Building	710	2,001,500	Sq Ft	406	357	49	465	79	386
PROPOSED RETAIL & RESIDENTIAL										
	Supermarket	850	30,000	Sq Ft	5	3	2	70	36	34
	Specialty Retail Center	814	45,000	Sq Ft	3	2	1	12	5	7
	Apartments	220	400	Units	40	6	34	47	32	15
PROPOSED TOTAL			**2,476,500**							
	Proposed Site Trips				454	368	86	594	152	442
NEW SITE TRIPS FROM EXISTING										
	Total New Trips				190	138	52	231	59	172

Note: Volumes trip generation is based on ITE and WMATA Trip reduction

Total Future Development Phase III Traffic Volumes

In order to determine the traffic volumes present on the roadways in the vicinity of the development site under the Phase III build 2022 conditions, the proposed development traffic volumes were added to the 2022 future background traffic volumes. The future background traffic volumes were determined based on an inherent growth rate of one (1) percent per year globally within the vicinity of the site for a total of 22.02 percent over the 20 years. The site generated traffic volumes along with the total future traffic volumes for Phase III condition is shown in Figures 16 and 17 respectively.

Total Future Development Phase III Capacity Analysis

Capacity analysis was performed for the year 2022 total future phase III conditions with the results of the analysis summarized in Table 8. In addition, the Technical Appendix contains the HCS report printouts for a detailed review of the HCS analysis, and Figure 18 depicts the capacity analysis results graphically.

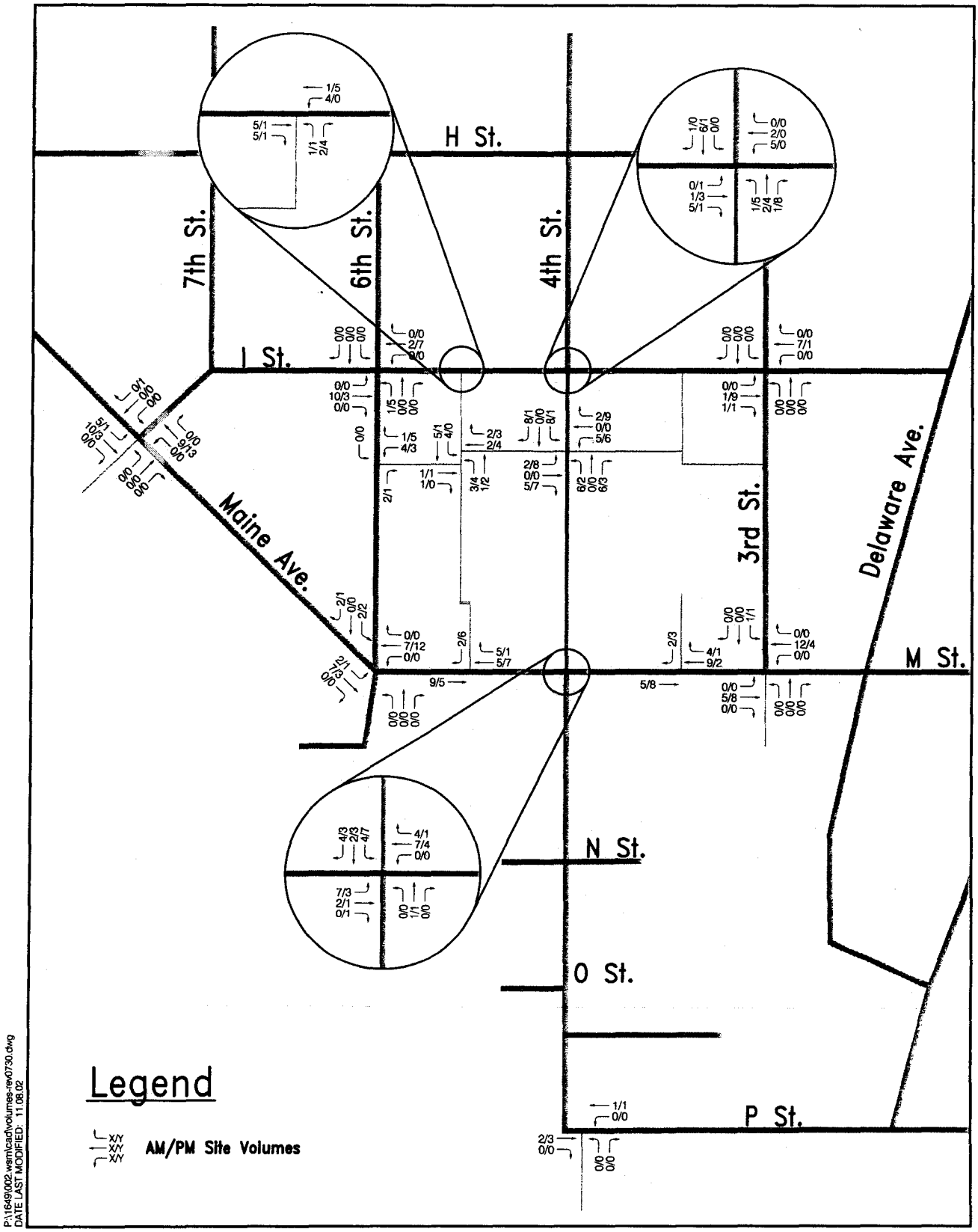
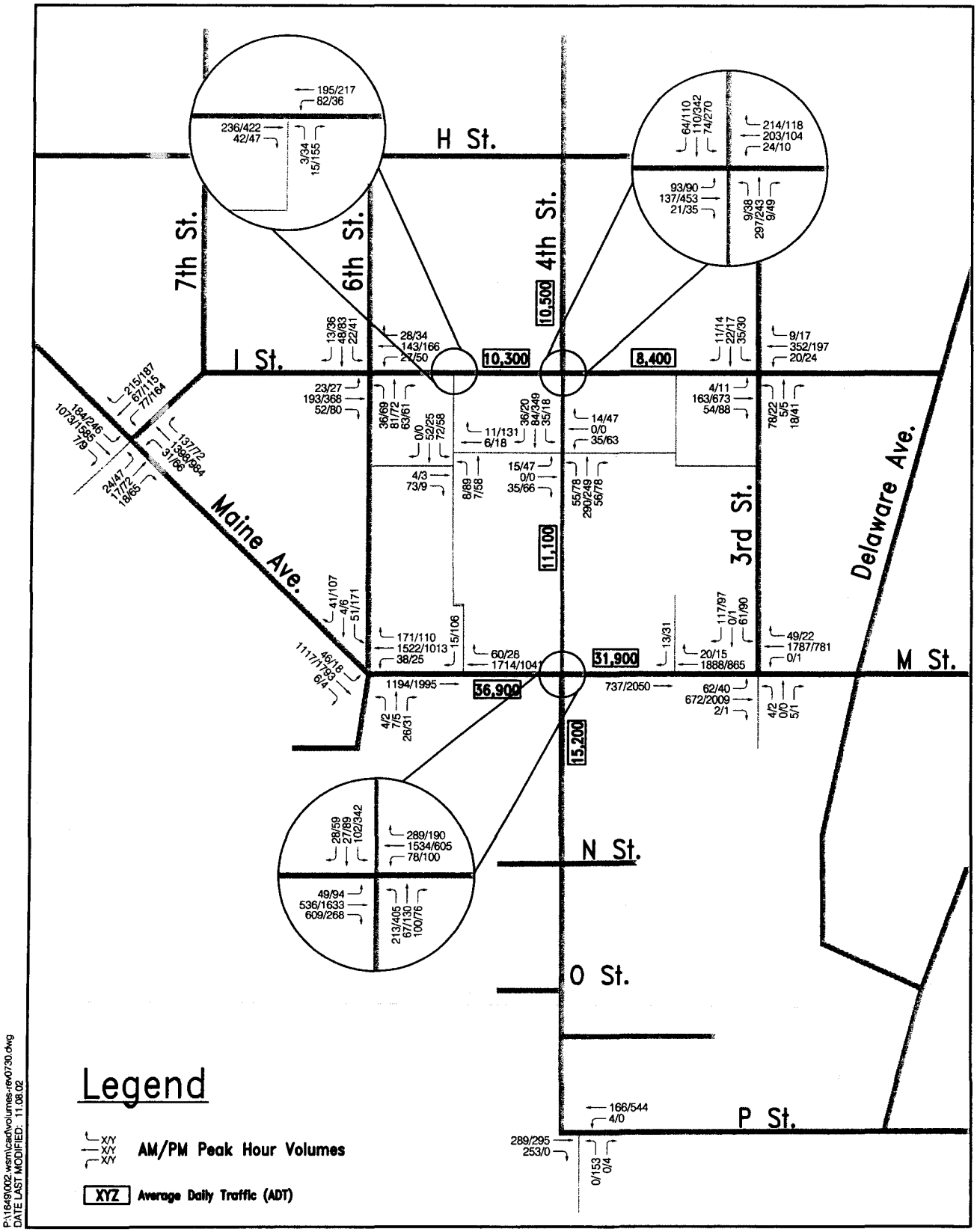


Figure 16
Phase II (2010) to Phase III (2022)
New Site Generated Volumes



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Figure 17
Phase III - Build-out 2022
Total Future Traffic Volumes

Table 8
Total Future Phase III (2022) Intersection Capacity Analysis

Roadway Intersection		Level of Service	
		AM Peak	PM Peak
Maine Avenue and 7th Street	***(signalized)***		
Overall		**A (9.7)**	**C (31.4)**
Eastbound Approach (7th)		C (27.9)	D (38.8)
Westbound Approach (7th)		C (20.5)	D (50.6)
Northbound Approach (Maine)		A (4.5)	C (26.5)
Southbound Approach (Maine)		B (12.1)	C (28.7)
6th Street and I Street	***(signalized)***		
Overall		**A (8.7)**	**B (13.6)**
Eastbound Approach		A (2.5)	A (6.3)
Westbound Approach		A (2.2)	A (1.4)
Northbound Approach		B (18.9)	C (34.7)
Southbound Approach		C (22.7)	C (28.0)
4th Street and I Street	***(signalized)***		
Overall		**C (21.6)**	**D (47.6)**
Eastbound Approach		B (12.1)	D (49.3)
Westbound Approach		B (11.4)	C (26.8)
Northbound Approach		C (32.1)	D (52.8)
Southbound Approach		D (35.8)	D (50.5)
3rd Street and I Street	***(signalized)***		
Overall		**A (9.1)**	**A (6.6)**
Eastbound Approach		A (2.6)	A (1.2)
Westbound Approach		A (3.2)	A (3.0)
Northbound Approach		C (32.1)	D (45.1)
Southbound Approach		C (29.2)	D (44.5)
6th Street and M Street	***(signalized)***		
Overall		**A (2.9)**	**B (10.7)**
Eastbound Approach		A (2.4)	A (9.9)
Westbound Approach		A (1.0)	A (1.2)
Northbound Approach		C (28.8)	C (21.8)
Southbound Approach		C (34.5)	D (53.0)
4th Street and M Street	***(signalized)***		
Overall		**B (16.5)**	**F (82.4)**
Eastbound Approach		A (9.1)	F (80.6)
Westbound Approach		B (16.3)	D (44.1)
Northbound Approach		C (29.1)	F (111.0)
Southbound Approach		D (45.9)	F (123.8)
3rd Street and M Street	***(signalized)***		
Overall		**B (14.1)**	**A (7.3)**
Eastbound Approach		A (7.4)	A (2.4)
Westbound Approach		B (13.9)	B (10.0)
Northbound Approach		C (27.5)	C (28.1)
Southbound Approach		D (42.4)	D (49.2)

Table 8
Total Future Phase III (2022) Intersection Capacity Analysis
(Cont.)

Roadway Intersection	Level of Service	
	AM Peak	PM Peak
4th Street and Proposed Site Entrances (unsignalized)		
Overall	N/A	N/A
Eastbound Approach	B (11.0)	C (21.4)
Westbound Approach	C (15.1)	D (27.3)
Northbound Left Turn	A (7.6)	A (8.4)
Southbound Left Turn	A (8.2)	A (8.0)

The results of the build-out Phase III (2022) capacity analysis indicate that all of the intersections with the exception of the 4th Street and M Street under P.M. conditions operate at an acceptable overall LOS "D" or better during the A.M. and P.M. commuter peak hours. The 4th Street and M Street intersection under P.M. conditions operate at an overall LOS "F" due to the northbound, southbound, and eastbound approaches. All other intersections operate at acceptable overall levels of service.

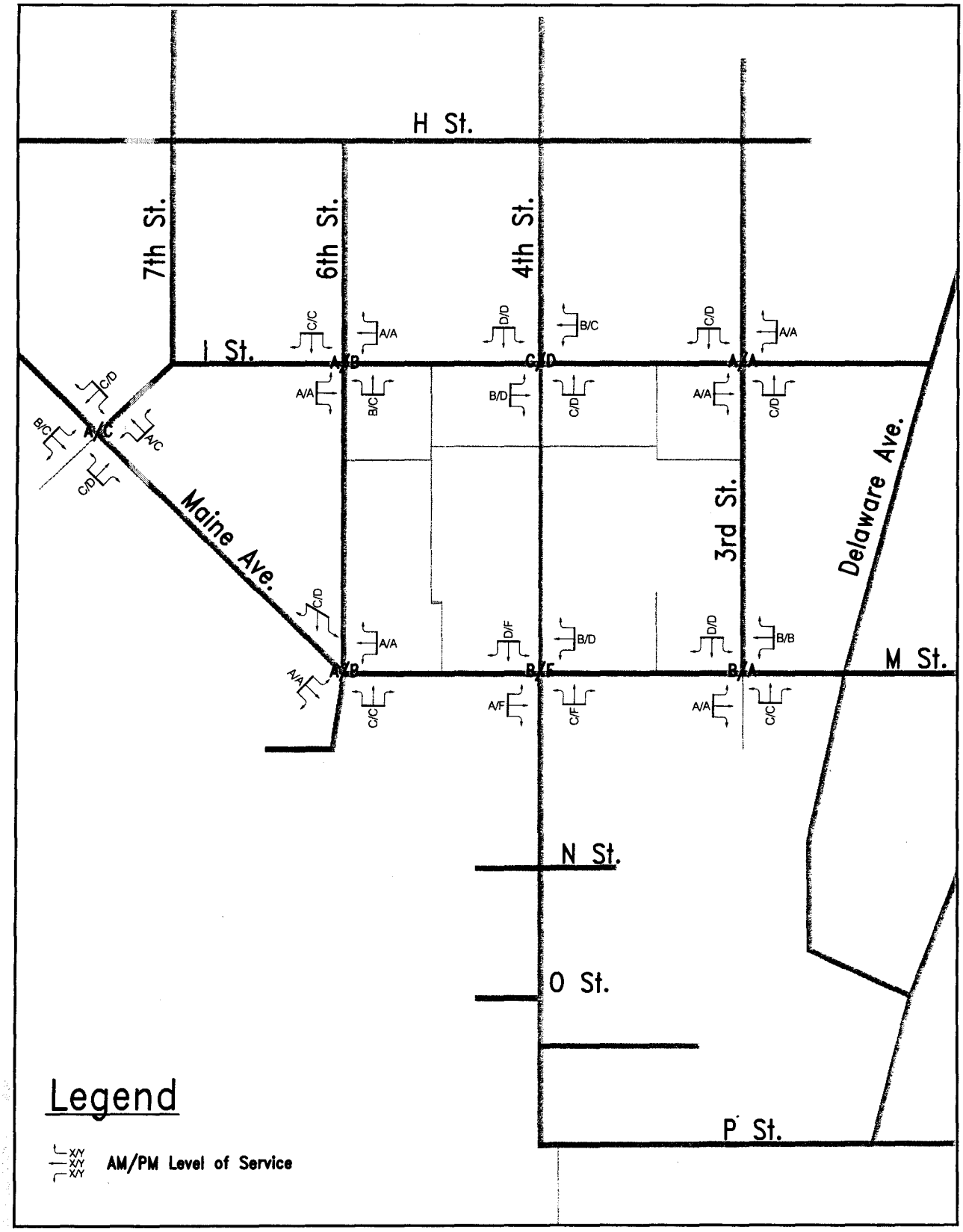


Figure 18
Phase III - Build-out 2022
Total Future Peak Hour Levels of Service

EXISTING AND FUTURE PARKING CONDITIONS

Parking Supply

The developer will provide a total of 1,296 parking spaces at the Waterfront Development site. These spaces will be provided in an under ground parking structure with access from 4th Street south of Eye Street, M Street east of 4th Street and west of 4th Street, and along Makimie Lane south of Eye Street and east of 6th Street.

With its location on top of the green line Metro rail stations (Waterfront) and with several bus lines traveling on M Street and Eye Street, there is expected to be a high usage of transit. The residential density of this area also encourages walking and biking to and from the site. By limiting the number of parking spaces, other modes of transportation are indirectly encouraged as well.

Since office is the dominant land use of the Waterfront Development, it is expected that there will be many combined trips destined for office and retail. Most of the retail located at the Waterfront Development will be consider non-destination stores and therefore will attract mostly people that live within walking distance or are already located at the site.

Existing and Future Parking Demand

Based on the land use of the proposed development and the mode choice, the following table shows the projected parking demand. The number of parking spaces required for this site is stated according to the DCMR zoning 11 ordinance for Washington D.C. The results of the parking analysis for the existing, total future Phase I, total future Phase II, and total future Phase III traffic conditions are presented in Tables 9, 10, 11, and 12 respectively.

Table 9
Existing Conditions (2002)

Use	Quantity	Parking Ratio	% Reduction due to Metro	Total Parking Spaces Required	Existing Parking Spaces
Ground Floor Retail	104,500 S.F.	1 / 750 S.F.	**50%**	**70**	**235**
Supermarket	30,000 S.F.	1 / 750 S.F.	**50%**	**20**	**50**
General Office	1,117,500 S.F.	1 / 900 S.F. (-2,000 S.F.)	**50%**	**619**	**967**
TOTAL	**1,252,000 S.F.**	-	-	**709**	**1,252**

Table 10
Phase I Conditions (2005)

Use	Quantity	Parking Ratio	% Reduction due to Metro	Total Parking Spaces Required	Proposed Parking Spaces
Ground Floor Retail	45,000 S.F.	1 / 750 S.F.	**50%**	**30**	**96**
Supermarket	30,000 S.F.	1 / 750 S.F.	**50%**	**20**	**50**
General Office	1,419,500 S.F.	1 / 900 S.F. (-2,000 S.F.)	**50%**	**788**	**1,056**
Apartments	200,000 S.F.	1 / 4 Units	-	**50**	**50**
TOTAL	**1,694,500 S.F.**	-	-	**888**	**1,252**

Table 11
Phase II Conditions (2010)

Use	Quantity	Parking Ratio	% Reduction due to Metro	Total Parking Spaces Required	Proposed Parking Spaces
Ground Floor Retail	45,000 S.F.	1 / 750 S.F.	**50%**	**30**	**96**
Supermarket	30,000 S.F.	1 / 750 S.F.	**50%**	**20**	**50**
General Office	1,693,500 S.F.	1 / 900 S.F. (-2,000 S.F.)	**50%**	**940**	**1,056**
Apartments	200,000 S.F.	1 / 4 Units	-	**50**	**50**
TOTAL	**1,968,500 S.F.**	-	-	**1,040**	**1,252**

Table 12
Phase III Conditions (2022)

Use	Quantity	Parking Ratio	% Reduction due to Metro	Total Parking Spaces Required	Proposed Parking Spaces
Ground Floor Retail	45,000 S.F.	1 / 750 S.F.	**50%**	**30**	**46**
Supermarket	30,000 S.F.	1 / 750 S.F.	**50%**	**20**	**50**
General Office	2,001,500 S.F.	1 / 900 S.F. (-2,000 S.F.)	**50%**	**1,111**	**1,100**
Apartments	400,000 S.F.	1 / 4 Units	-	**100**	**100**
TOTAL	**2,476,500 S.F.**	-	-	**1,261**	**1,296**

TRUCK ACCESS ASSESSMENT

This section examines the truck loading/unloading characteristics, truck access, and their impacts and presents recommendations for a procedural and operational strategy for managing the truck traffic serving the Waterfront Developments. We have examined the components of the proposed plan to identify what physical modifications are necessary and to estimate the size and frequency of truck deliveries.

The current development plan for the Waterfront Development project includes the following based on each phase of completion:

Existing (2002)

- 1,117,500 square foot general office buildings;
- 30,000 square foot supermarket retail; and
- 104,500 square foot general retail.

Phase I (2005)

- 1,419,500 square foot general office buildings;
- 30,000 square foot supermarket retail;
- 45,000 square foot general retail; and
- 200,000 square foot residential building (200 units).

Phase II (2010)

- 1,693,500 square foot general office buildings;
- 30,000 square foot supermarket retail;
- 45,000 square foot general retail; and
- 200,000 square foot residential building (200 units).

Phase III (2022)

- 2,001,500 square foot general office buildings;
- 30,000 square foot supermarket retail;
- 45,000 square foot general retail; and
- 400,000 square foot residential building (400 units)

Truck Access

Makimie Place Entrance

The Makimie Place loading docks will serve as the primary loading area for the site with 7-loading berths located below grade. Access to the Makimie Loading Docks will be via the Makimie Place / Eye Street intersection. Vendors accessing the site from the west will travel

along Maine Avenue to the 7th Street intersection where they will turn right onto 7th Street/Eye Street, travel east along Eye Street to, Makimie Place, and turn right onto Makimie Place to access the loading docks. Vendors access the site from the east will travel westbound along M Street to 4th Street, turn right on 4th Street, travel north along 4th Street to Eye Street, turn left onto Eye Street and then left again onto Makimie place. Vendors will be encouraged to access the site via these two routes in order to minimize truck traffic along the residential roadways.

Wesley Place Entrance

The Wesley Place loading docks will serve as a secondary loading area for the site with 2-loading berths located above grade. Access to the Wesley Place Loading Docks will be via the M Street, K Street, and Eye Street along Wesley Place. Vendors accessing the site from the west will travel along Maine Avenue to M Street, continue along M to the 3rd Street intersection, turn left onto 3rd Street and travel north on 3rd Street to the K Street intersection, turn left onto K street and left onto Wesley Place to access the loading docks. Vendors may also access the site from Eye Street by turn left onto 7th Street from Maine Avenue, traveling along 7th Street/Eye Street to the Wesley Place intersection and turn right onto the site. Vendors access the site from the east will travel westbound along M Street to Wesley Place entrance, just east of the newly constructed 4th Street, to access the loading docks. Again, vendors will be encouraged to access the site via these two routes in order to minimize truck traffic along the residential roadways.

Truck Size and Truck Dock Limitations

Based on the tenant mix of the development, the stores will receive deliveries from single-unit trucks in the 30-foot length range. The truck dock requirements for the Waterfront Development site based on the zoning use is **ten (10) loading** berth for the office, **one (2) loading** berths for the retail, **one (1) loading** berth for the residential site, and **two (2) loading** berths for the trash trucks. Based on these restrictions, each truck must be able to make the proper turn maneuvers entering and exiting the loading docks for the Waterfront site, at both the Makimie Place entrance and the Wesley Place entrance, as well as within each respective truck dock area.

LOADING DOCK ASSESSMENT

Total Future with Development

Extensive maneuvering analysis was conducted for all dock locations within the vicinity of the site for all phases of development. Each loading dock berth is able to handle, at minimum, a trash truck, a single unit 30-foot truck, and/or a Wheel Base 50 foot truck.

GARAGE AND LOADING ACCESS ASSESSMENT

Total Future Phase I (2005)

All garage ramps and loading docks were assessed under the Phase I condition to allow for the best circulation around the site as well as within the vicinity of the site. Figure 19 depicts the new garage ramp and loading dock locations.

Total Future Phase II (2010)

All garage ramps and loading docks were assessed under the Phase II condition to allow for the best circulation around the site as well as within the vicinity of the site. Figure 20 depicts the new garage ramp and loading dock locations.

Total Future Phase III (2022)

All garage ramps and loading docks were assessed under the Phase III condition to allow for the best circulation around the site as well as within the vicinity of the site. Figure 21 depicts the new garage ramp and loading dock locations.

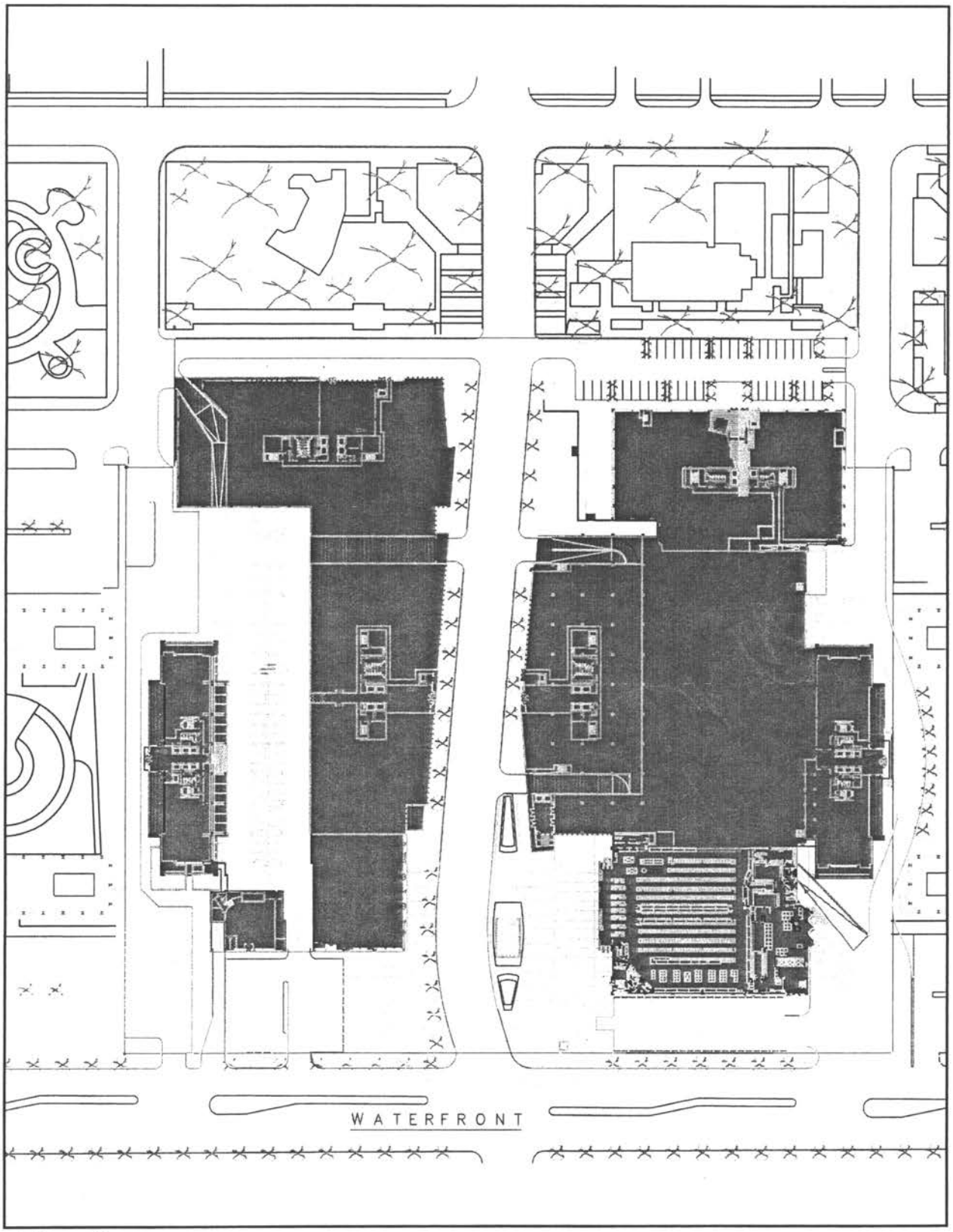


Figure 19
Total Future Phase I (2005)
Garage and Loading Access

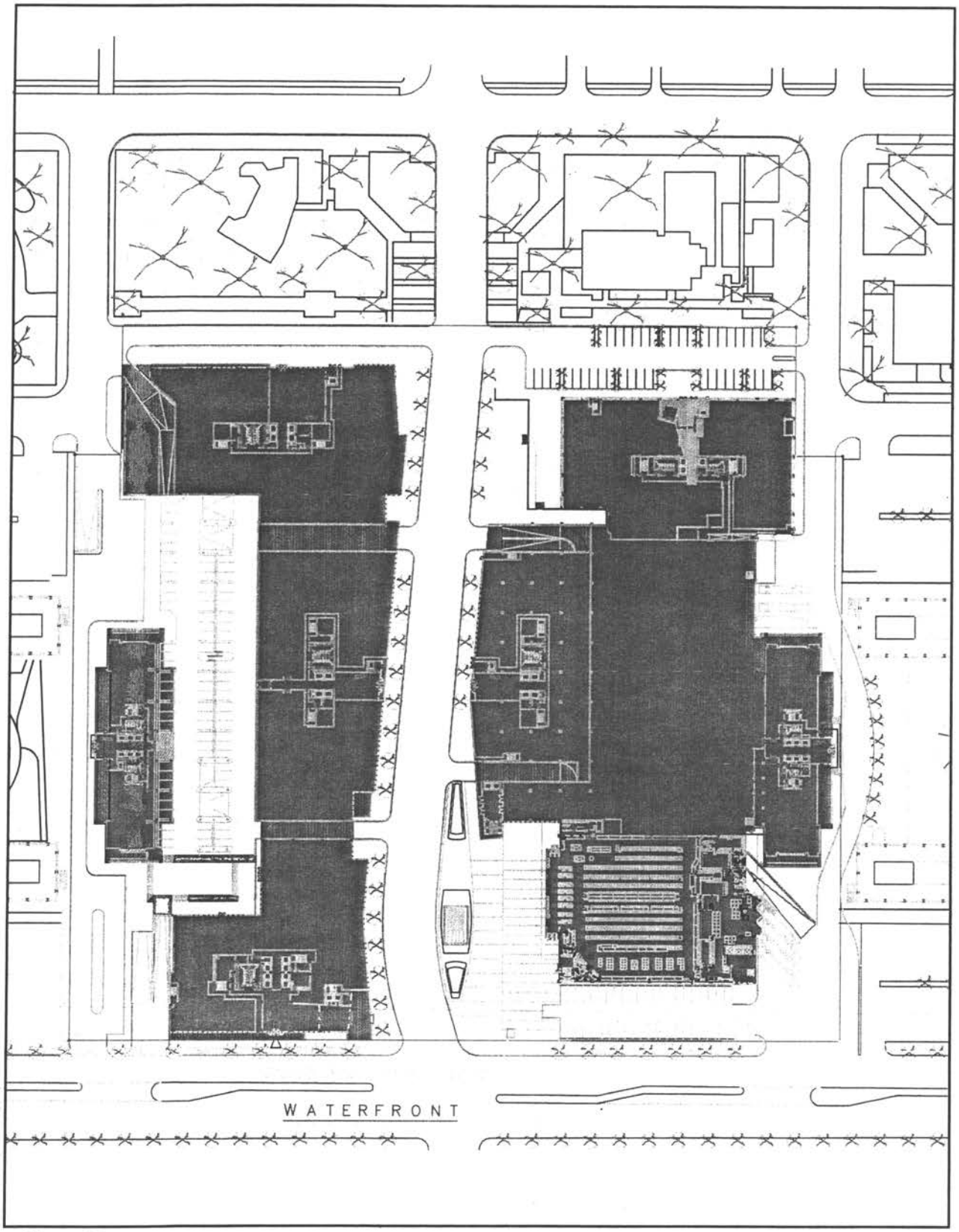


Figure 20
Total Future Phase II (2010)
Garage and Loading Access

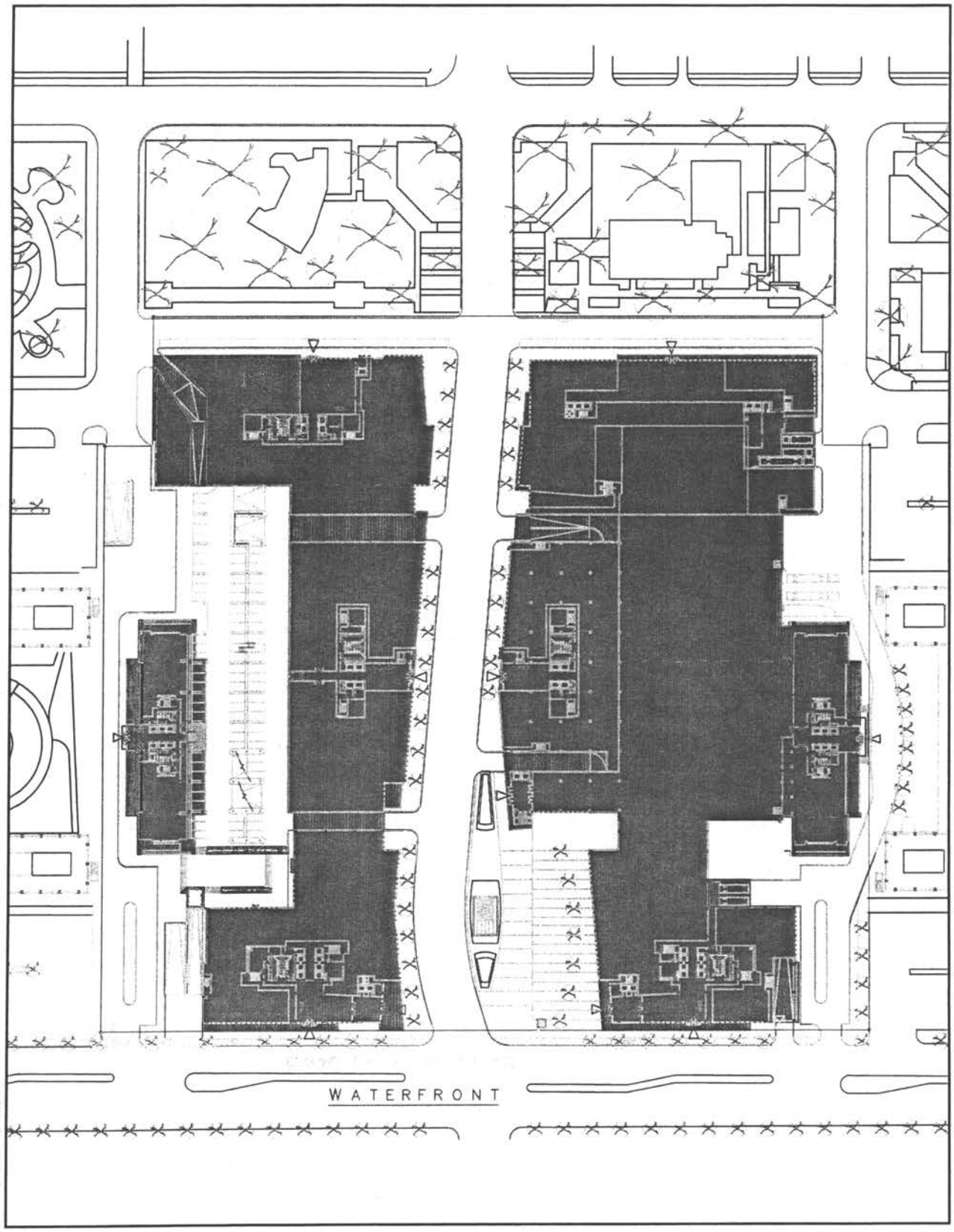


Figure 21
Total Future Phase III (2022)
Garage and Loading Access

CONCLUSIONS

This report contains the findings of a traffic impact study, Loading Dock Assessment, Roadway Design Assessment conducted for the proposed Waterfront Development property, a mixed-use development with office, ground floor retail, and a supermarket store located in Southwest Washington, DC.

The project site is bound by M street to the south, 6th Street/Makimie Place to the west, Eye Street to the north, and 3rd Street/Wesley Place to the east. Currently, direct access to the site is provided from M street and 6th Street/Wesley Street. This access will be maintained throughout the proposed redevelopment along with access proposed along the planned extension of 4th Street from M Street in the south to Eye Street in the north. The project site is anticipated to be developed over three phases with the first phase scheduled for completion in the year 2005, the second phase to be completed in 2010, and the final build out phase to be completed in 2022.

The analysis presented in this report supports the following major conclusions:

- Existing conditions (2002) indicate that all of the intersections with the exceptions of the 4th Street and M Street, 4th Street and Eye Street, and 3rd Street and Eye Street under P.M. conditions operate at an acceptable overall LOS "D" or better during the A.M. and P.M. commuter peak hours. The 4th Street and M Street intersection under P.M. conditions operate at an overall LOS "F" due to the northbound left turn approach to M street and the eastbound left turn approach to 4th Street/Waterfront Development. The intersection of 4th Street and Eye Street under P.M. conditions operates at and overall LOS "E" due to the southbound left turns from 4th Street to Eye Street. The 3rd Street and Eye Street intersection under the P.M. conditions operates at and overall LOS "E" due to the eastbound approach along Eye Street to 3rd Street. All other intersections operate at acceptable overall levels of service.

- Existing conditions traffic volumes with 4th Street connections (2002) indicate that all of the intersections within the vicinity of the site will operate at an acceptable overall LOS "D" or better during the A.M. and P.M. commuter peak hours. Each intersection within the vicinity of the site will operate at acceptable levels of service due to the redistribution of traffic along 4th Street along with the adjustment of the signal timings and signal cycle length. All intersections within the vicinity of the site were analyzed with Synchro to determine the best offsets, cycle lengths, and signal timings. The Synchro analyses were then transferred into the Highway Capacity Software to report the levels of service at each intersection. All other intersections operate at acceptable overall levels of service.

- Phase I conditions (2005) indicate that all of the intersections within the vicinity of the site will operate at an acceptable overall LOS "D" or better during the A.M. and P.M. commuter peak hours. Each intersection within the vicinity of the site will operate at acceptable levels of service due to the adjustment of the signal timings and signal cycle lengths. All intersections within the vicinity of the site were analyzed with Synchro to determine the best offsets, cycle lengths, and signal timings. The Synchro analyses were

then transferred into the Highway Capacity Software to report the levels of service at each intersection.

- Phase II conditions (2010) indicate that all of the intersections within the vicinity of the site will operate at an acceptable overall LOS "D" or better during the A.M. and P.M. commuter peak hours. Each intersection within the vicinity of the site will operate at acceptable levels of service due to the adjustment of the signal timings and signal cycle lengths. All intersections within the vicinity of the site were analyzed with Synchro to determine the best offsets, cycle lengths, and signal timings. The Synchro analyses were then transferred into the Highway Capacity Software to report the levels of service at each intersection.

- Phase III conditions (2022) indicate that all of the intersections within the vicinity of the site, with the exception of the 4th Street and M street under P.M. conditions, operate at an acceptable overall LOS "D" or better during the A.M. and P.M. commuter peak hours. The degradation in level of service at the following intersection is due to, in large part, the 22% background growth. The 4th Street and M Street intersection under P.M. conditions operate at an overall LOS "F" due to the northbound, southbound, and eastbound approaches. All other intersections operate at acceptable overall levels of service.

- Based on the land use of the proposed development and the mode choice, the number of parking spaces required for this site is sufficient for this site based on the DCMR zoning 11 ordinances for Washington D.C.

- Extensive maneuvering analysis was conducted for all dock locations within the vicinity of the site for all phases of development. Each loading dock berth is able to handle, at minimum, a trash truck, a single unit 30-foot truck, and/or a Wheel Base 50 foot truck.