APPENDICES

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APPENDIX A: PROCEDURE FOR DEVELOPMENT OF HIGHWAY PLAN

The forecast traffic volumes for the year 2000 were composed of four categories: existing traffic, traffic generated and diverted by the Wheaton Metrorail station, traffic generated by development within the Wheaton Sector Plan area, and traffic generated by development outside the Wheaton Sector Plan area.

EXISTING TRAFFIC

Existing traffic counts were provided by the Montgomery County Department of Transportation and represent actual weekday volumes during 1987 and 1988.

METRORAIL TRAFFIC

Previous patronage forecasts for the Wheaton Metro station were updated to reflect the most recent demographic forecasts from COG for the year 2000. The projected daily demand for park-and-ride spaces, 2,610, greatly exceeds the 1,150 spaces programmed by WMATA. Roughly 50 percent of the overflow was assumed to use another mode of access to the Metro station and the rest were assumed to use a mode of access other than Metro to make their trips.

The park-and-ride and kiss-and-ride trips were assumed to have the following distribution at the Wheaton CBD cordon:

Location

Georgia Avenue (south)	5%
University Boulevard (west)	8%
Veirs Mill Road	32%
Georgia Avenue (north)	42%
University Boulevard (east)	13%

TRAFFIC GENERATED BY WHEATON DEVELOPMENT

The standard process for estimating future traffic volumes contains four steps: trip generation, trip distribution, modal split, and trip assignment. This four-step process was employed for the development of the highway plan with a minor modification. Assumptions concerning transit use and auto occupancy were built into the trip generation rates; therefore, the modal split step of the process was not explicitly considered.

Trip Generation

Five categories of development were considered for the purpose of developing trip generation rates. Vehicle trips were generated for the peak hours at the rates listed below. The term "peak direction" indicates trips beginning at residential and hotel development during the A.M. peak hour, and trips ending at office and retail development during the A.M. peak hour. These rates are for planning purposes, and other rates might be appropriate for the actual Local Area Review or other development review activities.

Office

1.2 trip ends per 1000 GSF in A.M. peak hour 1.7 trip ends per 1000 GSF in P.M. peak hour 85% of trips in peak direction

Retail - Wheaton Plaza

0.00 trip ends per 1000 GSF in A.M. peak hour 2.82 trip ends per 1000 GSF in P.M. peak hour 50% of trips in peak direction

Retail - Other Locations

0.0 trip ends per 1000 GSF in A.M. peak hour 5.0 trip ends per 1000 GSF in P.M. peak hour 50% of trips in peak direction

Residential

0.4 trip ends per dwelling unit in A.M. peak hour 0.4 trip ends per dwelling unit in P.M. peak hour 75% of trips in peak direction during A.M. peak hour 60% of trips in peak direction during P.M. peak hour

The trip generation rates were based on empirical data from both nationwide and local studies.

The trip generation rates were applied to all development in the development projection. The amount of net development assumed for each component of the total development projection is as follows:

Land Use		Development Projection				
	1	<u>2A</u>	<u>2B</u>			
Office (GSF)	400,000	400,000	640,000			
Retail - Wheaton Plaza (GSF)	0	250,000	250,000			
Retail - Other (GSF)	-15,000	-18,000	-18,000			
Residential (DUs)	800	800	1,335			

Trip Distribution and Assignment

The trips were assumed to cross the CBD cordon according to the following distribution table:

Location	Off	Ret	Res/Hot	
Georgia Avenue (south)	41%	44%	46%	
University Boulevard (west)	25%	21%	27%	
Veirs Mill Road	15%	12%	21%	
Georgia Avenue (north)	17%	20%	4%	
University Boulevard (east)	2%	3%	2%	

The assumed distribution was prepared using SYSTEM II, a regional land use/ transportation model. Demographic data from COG for the year 2000 was used to determine the amount of development occurring in the Metropolitan Washington Area on a zonal basis. A gravity model was used to determine the relative number of attractions to Wheaton from each zone. A shortest path tree model was used to identify the fastest and most logical travel route from each zone to Wheaton.

Within the CBD, trips were manually assigned from the cordon points to the locations of additional development. The cordon point distribution was assumed to be the same for each development location.

TRAFFIC GENERATED BY DEVELOPMENT OUTSIDE WHEATON

All development which occurs in the Metropolitan Washington Area will have some impact on traffic conditions in Wheaton. The development specified in this Sector Plan is considered explicitly as previously described. Development which occurs outside the boundaries of the Sector Plan area is considered implicitly as an increase in the number of through trips in Wheaton.

Currently, approximately 40 percent of the vehicles which enter or leave the Wheaton CBD are local traffic; that is, they will make a stop within the CBD. The remainder are through trips. The number of through trips in any CBD is a function of the regional roadway network and demographics. Through trips in Wheaton will increase, for instance, if more dwelling units are built north of the CBD and more jobs are made available south of the CBD. This increase might be negated, however, if the roadway network is altered so that these trips might bypass the CBD.

To estimate the impact of additional development and changes in the roadway network, EMME/2, a land use/transportation model, was used to model anticipated traffic conditions in the year 2000, including increased development as forecast by COG and currently planned roadway network changes, such as the Inter-County Connector.

The model output was adjusted to reflect the fact that Sector Plan development in Wheaton is different than COG forecasts. The adjusted forecasts indicate that through trips will increase by 11 percent in the Wheaton CBD by the year 2000.

APPENDIX B: SUMMARY OF IMPROVEMENTS TO INTERSECTIONS

Given the assumptions stated in Appendix A, improvements must be made at a few intersections to adequately handle traffic generated by future development.

The following tables summarize the recommended intersection improvements listed in the Transportation Plan for each of the three components of the sector plan's development projections. In all cases, the lane configurations shown are the best estimates at the time of this sector plan preparation. They are subject to change if equivalent configurations are found to be more desirable.

SUMMARY OF GEOMETRIC IMPROVEMENTS

Development Projection 1

Arcola Avenue and Georgia Avenue:

- Add second left-turn lane to southbound Georgia Avenue
- Add second through lane to eastbound Arcola Avenue

Georgia Avenue and Reedie Drive:

- Add second through lane to Reedie Drive
- Add left-turn lane to eastbound Reedie Drive
- Add left-turn lane to westbound Reedie Drive

Georgia Avenue and Windham Lane

 Construct Windham Lane as a four-lane cross section for 100 feet both east and west of Georgia Avenue

Grandview Avenue and Reedie Drive

- Realign Grandview Avenue to intersect Reedie Drive at a right angle
- Realign Reedie Drive as a five-lane cross section matching cross sections at Veirs Mill Road and Georgia Avenue

University Boulevard and Veirs Mill Road

- Add second left-turn lane to northbound Veirs Mill Road
- Add right-turn lane to eastbound University Boulevard

Development Projection 2A

Arcola Avenue and Georgia Avenue:

- Add second left-turn lane to southbound Georgia Avenue
- Add second through lane to eastbound Arcola Avenue

Georgia Avenue and Reedie Drive:

Add turn lane to westbound Reedie Drive

Georgia Avenue and Windham Lane

Construct Windham Lane as a four-lane cross section for 100 feet both
 east and west of Georgia Avenue

Grandview Avenue and Reedie Drive

- Realign Grandview Drive to intersect Reedie Drive at a right angle
- Realign Reedie Drive as a five-lane cross section matching cross sections at Veirs Mill Road and Georgia Avenue

University Boulevard and Veirs Mill Road

- Add second left-turn lane to northbound Veirs Mill Road
- Add right-turn lane to eastbound University Boulevard

Development Projection 2B

Arcola Avenue and Georgia Avenue:

- Add second left-turn lane to southbound Georgia Avenue
- Add second through lane to eastbound Arcola Avenue

Georgia Avenue and Reedie Drive:

- Add second through lane to Reedie Drive
- Add left-turn lane to eastbound Reedie Drive
- Add left-turn lane to westbound Reedie Drive

Georgia Avenue and Windham Lane

 Construct Windham Lane as a four-lane cross section for 100 feet both east and west of Georgia Avenue

Grandview Avenue and Reedie Drive

- Realign Grandview Drive to intersect Reedie Drive at a right angle
- Realign Reedie Drive as a five-lane cross section matching cross sections at Veirs Mill Road and Georgia Avenue

University Boulevard and Veirs Mill Road

- Add second left-turn lane to northbound Veirs Mill Road
- Add right-turn lane to eastbound University Boulevard

APPENDIX C: IMPROVEMENTS TO INTERSECTIONS

The following tables list the improvements identified as necessary to accommodate future traffic volumes while maintaining a CLV of 1525 or lower. At each intersection, the CLV and level of service are listed for incremental improvements. These lane configurations are subject to change if equivalent improvements are found to be more desirable.

Development Projection 1

INTERSECTION	c	LV		IMPROVEMENT	
	AM	PM			
CBD-2 - Arcola/Georgia	1472-E	1775-F		Existing geometry	
	1472-E	1591-E	and	Add LT lane to SB Georgia (L,L,T,T,TR)	
	1419-D	1431-D	and	Add lane to EB Arcola (LT,TR)	
CBD-5 - Georgia/Reedie	1518-E	1527-E		Existing geometry (EB/	
				WB Reedie assumed LT,TR)	
CBD-12 - University/Veirs Mill	1488-E	1668-F		Existing geometry	
	1403-E	1529-E	and	Add LT lane to NB Veirs Mill (L,L,T,T,TR)	
	1303-E	1459-E	and	Add RT lane to EB University (L,T,T,T,R)	

Development Projection 2A

INTERSECTION	CLV	•		IMPROVEMENT								
	AM	PM										
CBD-2 - Arcola/Georgia	1472-E	1803-F		Existing geometry								
	1472-E	1619-F	and	Add LT lane to SB Georgia (L,L,T,T,TR)								
	1419-D	1459-E	and	Add lane to EB Arcola (LT,TR)								
CBD-5 - Georgia/Reedie	1518-E	1597-F		Existing geometry (EB/								
				WB Reedie assumed LT,TR)								
	1518-E	1504-E	and	Add WB, RT lane.								
INTERSECTION	CLV		CLV				- 					IMPROVEMENT
-	AM	PM										
CBD-12 - University/Veirs Mill	1488-E	1684-F		Existing geometry								
	1403-E	1545-E	and	Add LT lane to NB Veirs Mill (L,L,T,T,TR)								
	1303-E	1475-E	and	Add RT lane to EB University (L,T,T,T,R)								

Development Projection 2B

INTERSECTION	AM	CLV	PM		IMPROVEMENT
CBD-2 - Arcola/Georgia	1490-E		1829-F		Existing geometry
	1490-E		1619-F	and	Add LT lane to SB Georgia (L,L,T,T,TR)
	1437-D		1459-E	and	Add lane to EB Arcola (LT,TR)
CBD-5 - Georgia/Reedie	1602-F		1704-F		Existing geometry (EB/WB Reedie assumed LT,TR)
	1530-E		1587-E	and	Add lane to EB, WB Reedie (L,LT,TR), split east-west phase
CBD-6 - Georgia/University	1533-E		1522-E		Existing geometry
-	1407-D		1522-E	and	Add RT lane to SB Georgia (L,T,T,T,R)
CBD-8 - Georgia/Windham	1386-D		1546-E		Existing geometry (EB/WB Windham assumed LT,TR. NB Georgia assumed L,T,T,TR)
	1386-D		1500-E	and	Add RT lane to NB Georgia (L,T,T,T,R)
CBD-12 - University/Veirs Mill	1548-E		1698-F		Existing geometry
	1463-E		1583-E	and	Add LT lane to NB Veirs Mill (L,L,T,T,TR)
	1463-E		1530-E	and	Add RT lane to EB University (L,T,T,T,R)
	1423-D		1515-E	and	Add LT lane to WB University (L,L,T,T,R) (Note: this improve- ment not specified in text since it would be cost-prohibitive. In this case, the crite- rion that intersection CLVs be less than 1525 will be relaxed to allow a CLV of 1530.)

APPENDIX D: RIGHT-OF-WAY

Given the following assumptions for roadway element widths in the Wheaton Sector Plan area:

- 12' traffic lanes
- 4' central medians on Georgia Avenue, Veirs Mill Road, and University Boulevard
- 16' sidewalks/grass boulevards on both sides of Georgia Avenue, Veirs Mill Road, and University Boulevard within the CBD
- 12' sidewalks/grass boulevards on other locations

the following amendments to the 1978 Street and Highway Plan are mandated.

Development Projection 1

- Additional 2' on both sides of Reedie Drive from Grandview Avenue to Fern Street
- Additional 4' on south side of University Boulevard from East Avenue to Veirs Mill Road

Development Projection 2A

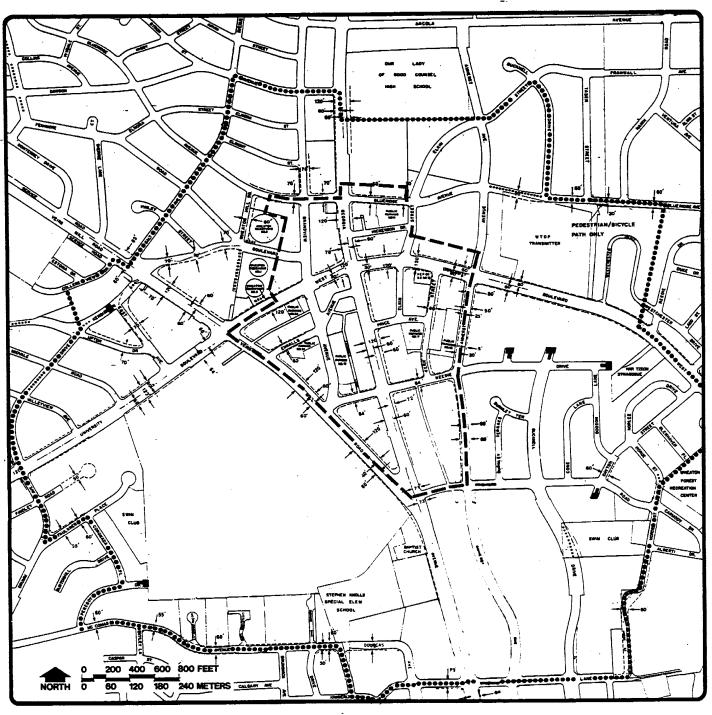
- Additional 2' on both sides of Reedie Drive from Grandview Avenue to Fern Street
- Additional 4' on south side of University Boulevard from East Avenue to Veirs Mill Road
- Additional 12' on east side of Georgia Avenue from Reedie Drive to a point 500' feet south

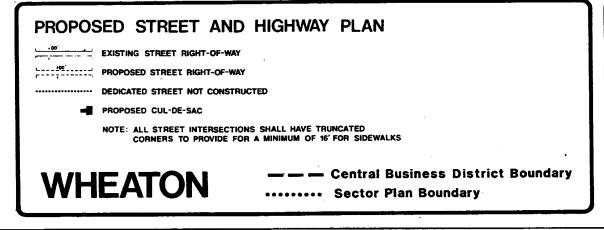
Development Projection 2B

- Additional 2' on both sides of Reedie Drive from Grandview Avenue to Fern Street
- Additional 4' on south side of University Boulevard from East Avenue to Veirs Mill Road
- Additional 12' on east side of Georgia Avenue from Reedie Drive to a point 500' feet south
- Additional 18' on west side of Georgia Avenue from Hickerson Drive to University Boulevard
- Additional 4' on east side of Georgia Avenue from Windham Lane to a point 500' south

Figure 18 shows the amended street and highway plan for the Wheaton Sector Plan area.

The proposed amendments may not be necessary if the roadway improvements are not implemented cr if the aforementioned standards for roadway and walkway width are relaxed.















Resolution No.: 11-2113 Introduced: June 25, 1990 Adopted: June 25, 1990

COUNTY COUNCIL FOR MONTGOMERY COUNTY, MARYLAND SITTING AS THE DISTRICT COUNCIL FOR THAT PORTION OF THE MARYLAND-WASHINGTON REGIONAL DISTRICT WITHIN MONTGOMERY COUNTY, MARYLAND

By: District Council

Subject: Approval of Final Draft Sector Flan for the Wheaton Central Business District and Vicinity, dated January, 1990

Background

- 1. On January 22, 1990, the Montgomery County Planning Board transmitted to the County Executive, the Final Draft Sector Plan for the Wheaton Central Business District and Vicinity. The Plan recommends the preservation and retention of the retail "market place", in Wheaton. It permits some growth without sacrificing the qualities that give Wheaton its special character. The Plan recommends that new development be directed to areas of greatest transit accessibility.
- 2. The Final Draft Amendment amends the 1978 Sector Plan for the Wheaton Central Business District and Vicinity and the General Flan for the Physical Development of the Washington-Maryland Regional District.
- 3. On March 19, 1990, the County Executive transmitted to the District Council the Final Draft Sector Plan for the Wheaton Central Business District and Vicinity, as prepared by the Montgomery County Planning Board, with a recommendation for approval with modifications.
- 4. On May 3, 1990, the County Council held a public hearing regarding the Final Draft Sector Flan for the Wheaton Central Business District. The Sector Plan was referred to the Flanning, Housing and Economic Development Committee for review and recommendation.
- 5. On June 14, 1990, the Planning, Housing and Economic Development Committee held a worksession to review the issues raised in connection with the Sector Plan. The committee recommended to the Council that the Sector Plan Amendment be approved with a modification to clarify the Sector Plan recommendation with respect to the development of the Metro Center site.

6. On June 26, 1990 the District Council reviewed the Final Draft Sector Plan for the Wheaton Central Business District and agreed with the recommendation of the Planning, Housing and Economic Development Committee.

Action

The County Council from Montgomery County, Maryland, sitting as the District Council for that portion of the Maryland-Washington Region in Montgomery County, approves the following resolution:

The Final Draft Sector Plan for the Wheaton Central Business District and Vicinity, dated January, 1990, is approved with the following revision:

Page 62, 3rd paragraph.

- [[o Designates the Metro Center parcel for a combination of CBD-R and CBD-3 soning. The land west of Amherst Avenue should be developed with residential uses in the CBD-R Zone. Any development should maintain a townhouse frontage along Amherst Avenue with a maximum height of 35 feet. (This height limit applies to the first 75 feet as measured from the property line.) The townhouse frontage, with the 35-foot height limit, should apply to any optional method project. (Under the standard method there is a 35-foot height limit on the entire CBD-R Zone.) The total parcel of land should be developed as a unified optional method project. (The existing public alley would have to be abandoned prior to the approval of a subdivision plan.) The height, scale, and bulk of any proposed project must be compatible with the existing residential communities to the mast [west] and south of the site.]]
- Designates the Metro Center parcel a combination of CBD-R and CBD-3 zoning. The total parcel of land should be developed as a unified optional method project. The existing public alley on the site would have to be abandoned prior to the approval of the subdivision plan. The height, scale and bulk of the proposed project must be compatible with the existing residential communities to the east and south of the site. The land immediately west of Amberst Avenue is most appropriate for development of residential uses in the CBD-R zone. A townhouse frontage along Amberst Avenue with a maximum height of 35 feet should be provided on this portion of the site to ensure compatibility with the adjacent single-family community. The 35 foot height limit should apply for a distance of 75 feet as measured from the property line.

Note: [[Double brackets]] indicate deletions
Underlining indicates additions

General

The text of the Sector Plan Amendment is to be edited as necessary to achieve clarity and consistency, to update factual information, and to convey the action of the County Council.

This is a correct copy of Council action.

Rathleen A. Freedman, CMC Secretary of the Council

Approved:

Higney Nramer

Sidney Kramey, County Executive

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION 8787 Georgia Avenue • Silver Spring, Maryland 20910-3760

MCPB NO. 90-33 M-NCPPC NO. 90-30

RESOLUTION

WHEREAS, The Maryland-National Capital Park and Planning Commission, by virtue of Article 28 of the Annotated Code of Maryland, is authorized and empowered, from time to time, to make and adopt, amend, extend, and add to a General Plan for the Physical Development of the Maryland-Washington Regional District; and

WHEREAS, the Montgomery County Planning Board of the Maryland-National Capital Park and Planning Commission, pursuant to said law, held a duly advertised public hearing on October 23, 1989, on the Preliminary Draft Comprehensive Amendment to the Sector Plan for the Wheaton Central Business District and Vicinity, being also an amendment to the Sector Plan for the Wheaton Central Business District and Vicinity, 1978, as amended; the Master Plan for the Communities of Kensington-Wheaton, 1989, as amended; the Master Plan for Historic Preservation, 1979, as amended; the Master Plan of Bikeways, 1978, as amended; being also an amendment to the General Plan for the Physical Development of the Maryland-Washington Regional District and the Master Plan of Highways within Montgomery County; and

WHEREAS, the Montgomery County Planning Board, after said public hearing and due deliberation and consideration, on December 12, 1989, approved the Final Draft of the proposed amendment, and recommended that it be approved by the Montgomery County Executive to forward to the District Council for its approval; and

WHEREAS, the Montgomery County Executive reviewed and made recommendations on the Final Draft Comprehensive Amendment to the Sector Plan for the Wheaton Central Business District and Vicinity and forwarded those recommendations to the District Council on March 19, 1990; and

WHEREAS, the Montgomery County Council, sitting as the District Council for the portion of the Maryland-Washington Regional District lying within Montgomery County, held a public hearing on May 3, 1990, wherein testimony was received concerning the Final Draft Comprehensive Amendment; and

WHEREAS, the District Council, on June 26, 1990, approved the Final Draft Comprehensive Amendment to the Sector Plan for the Wheaton Central Business District and Vicinity subject to the modifications and revisions set forth in Resolution 11-2113; and

WHEREAS, the Montgomery County Executive approved the Comprehensive Amendment to the Sector Plan for the Wheaton Central Business District and Vicinity on July 2, 1990.

NOW, THEREFORE, BE IT RESOLVED, that the Montgomery County Planning Board and the Maryland-National Capital Park and Planning Commission do hereby adopt said Comprehensive Amendment to the Sector Plan for Wheaton Central Business District and Vicinity, together with the General Plan for the Physical Development of the Maryland-Washington Regional District and the Master Plan of Highways within Montgomery County as approved by the Montgomery County District Council in the attached Resolution 11-2113; and

BE IT FURTHER RESOLVED, that these amendments and appropriate certificate of adoption shall be recorded on the maps, plan, and descriptive matter, said certificate shall contain the signature of the Chairman, Vice Chairman, and Secretary-Treasurer of this Commission; and

BE IT FURTHER RESOLVED, that as to Resolution No. 11-2113, this adoption be effective August 24, 1990, nunc pro tunc; and

BE IT FURTHER RESOLVED, that copies of said Amendment shall be certified by the Maryland-National Capital Park and Planning Commission and filed with the Clerk of the Circuit Court of each of Montgomery and Prince George's Counties, as required by law.

This is to certify that the foregoing is a true and correct copy of a resolution adopted by the Montgomery County Planning Board of The Maryland-National Capital Park and Planning Commission on motion of Commissioner Hewitt, seconded by Commissioner Floreen, with Commissioners Henry, Bauman, Floreen and Hewitt voting in favor of the motion, with Commissioner Keeney being absent at its regular meeting held on Thursday, July 12, 1990, in Silver Spring, Maryland.

John F. Downs, Jr. Executive Director

This is to certify that the foregoing is a true and correct copy of a resolution adopted by the Maryland-National Capital Park and Planning Commission on motion by Commissioner Hewitt, seconded by Commissioner Dabney, with Commissioners Rhoads, Dabney, Bauman, Yewell, Hewitt and Floreen voting in favor of the motion, with Commissioners Keeney and Henry being absent, and with Commissioners Wootten and Botts being temporarily absent at its regular meeting held on Wednesday, September 12, 1990, in Riverdale, Maryland.

John F. Downs, Jr. Executive Director