

**FINAL  
GATEWAY STUDY AREA  
ALTERNATIVE URBAN AREAWIDE REVIEW  
EDINA, MN  
SEPTEMBER 26, 2007**

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# EXECUTIVE SUMMARY

**Note to reviewers:** Comments on this Final Gateway Study Area Alternative Urban Areawide Review and Mitigation Plan should be submitted to the City of Edina during the 10-day comment period. **This comment period ends on October 18, 2007.**

## INTRODUCTION/BACKGROUND

The City of Edina (Edina) has prepared the Final Alternative Urban Areawide Review (AUAR) for the Gateway Study Area in conformance with Minnesota Rules 4410.3610. A Final Mitigation Plan for the Gateway Study Area is also included with this document.

The Final Gateway Study Area AUAR is being prepared as a result of a developer, Gateway Development, Edina LLC (herein referred to as the Developer) purchasing a series of parcels in two different locations within the Gateway Study Area with the intent to perform redevelopment. These parcels are referred to in this document as Pentagon Towers and Pentagon Quads sites and are shown in **Figure 5-3**. In response to the Developer's request to redevelop these parcels, Edina decided to review the potential for greater redevelopment activity within the commercial and industrial area along West 77<sup>th</sup> Street adjacent to these recently acquired parcels.

The Gateway Study Area (Study Area) is approximately 135 acres. The Study Area is bounded by Minnesota Trunk Highway 100 (TH 100) on the west; France Avenue on the east; 76<sup>th</sup> Street West and Fred Richards Golf Course on the north; and Edina's border with Bloomington on the south. The area is shown on **Figures 5-1, 5-2, and 5-3**. The Gateway Study Area currently contains a mixture of light industrial/warehouse, commercial, office and residential uses. There is a total of 1,904,000 gross square feet (gsf) of these uses in the existing conditions.

The surrounding land uses in the area include commercial and light industrial to the east, west, and south; Fred Richards Golf Course to the north and single family residential, and multi-family apartments to the north. Access to the Gateway Study Area from TH 100 is available at the northwest boundary via an interchange at 77<sup>th</sup> Street West. Similarly, access from I-494 is available approximately a quarter mile to the southeast of the Gateway Study Area via an interchange at France Avenue.

The environmental impacts of four redevelopment scenarios were evaluated as part of this Final AUAR as indicated below.

### **Scenario 1 – Comprehensive Plan (Figure 6-1)**

Scenario 1 represents the land uses and densities allowed under the Edina Comprehensive Plan (1999). Under this scenario, a combination of office, commercial, and light industrial land uses with a small area of residential use would be utilized in accordance with the Comprehensive Plan, resulting in up to 1,561,000 gsf of office and commercial space, 1,296,000 gsf of combined commercial and light industrial redevelopment, and 31,000 gsf of residential development for a

total redevelopment potential of 2,888,000 gsf. This represents approximately 984,000 gsf more redevelopment than exists today within the Study Area in the existing conditions.

### **Scenario 2 – Master Plan Scenario (Figure 6-2)**

Scenario 2 represents incorporating a “master plan” scenario brought forth by the Developer proposing to redevelop the Pentagon Towers and Pentagon Quads sites within the Gateway Study Area. The location of the Pentagon Towers and Quads properties proposed for redevelopment by the Developer are shown on **Figure 5-3**.

Within the Pentagon Towers site, the Developer is proposing to redevelop the site into 985,000 gsf of office space (6-14 stories high), 50,000 gsf of retail space, and a 150-room hotel totaling 80,000 gsf (seven stories high). This site currently contains 168,500 gsf of office space within six stories. All the existing buildings will be replaced with the redevelopment. Within the Pentagon Quads site, the Developer is proposing to redevelop the site into 30,000 gsf of retail space, 183,000 gsf of office space (four stories), and 820 housing units (two to five stories). This site currently contains 492,000 gsf of office space. All but two of the existing office buildings will be replaced by the redevelopment.

The redevelopment for the remaining areas within the Gateway Study Area is the same as Scenario 1. For the purposes of this Final AUAR, the total redevelopment potential of the entire Study Area is analyzed, not just the Developer’s properties. Therefore, potential redevelopment in the entire Study Area includes 3,252,000 gsf commercial, office, and light industrial, 914,000 gsf residential (with 856 residential units), and 80,000 gsf hotel for a total of 4,246,000 gsf of redevelopment. This scenario would require an amendment to the current Comprehensive Plan. This represents approximately 2,342,000 gsf more development than exists within the Study Area today in the existing conditions and 1,358,000 gsf more development than is anticipated in the Comprehensive Plan.

### **Scenario 3 – Maximum Commercial Build Scenario (Figure 6-3)**

Scenario 3 represents a maximum commercial build scenario where the majority of redevelopment would be in the form of new commercial, office and light industrial construction, totaling approximately 4,572,000 gsf of redevelopment. A small amount of new residential redevelopment would still remain, totaling approximately 31,000 gsf. The proposed redevelopment of the remaining parcels outside of the Pentagon Park and Quads area would remain consistent with Scenario 1. The total potential redevelopment for this scenario results in 4,603,000 gsf for the entire Study Area. This scenario would require an amendment to the current Comprehensive Plan. This represents approximately 2,699,000 gsf more development than exists today within the Study Area in the existing conditions and 1,715,000 gsf more development than is anticipated in the Comprehensive Plan.

### **Scenario 4 – Maximum Residential Scenario (Figure 6-4)**

Scenario 4 represents a maximum residential land use, which would convert the Pentagon Quads site to multi-family apartments and condominiums, while converting the Pentagon Towers site to a combination of commercial office and multi-family housing. This scenario would result in approximately 1,536 multi-family residential units and represent 1,581,000 gsf of residential redevelopment. The remaining area could redevelop into 2,405,000 gsf of commercial, office,

and industrial redevelopment. The total potential redevelopment for this scenario results in 3,986,000 gsf for the entire Study Area. Like Scenario 2, this scenario would require an amendment to the current Comprehensive Plan. This represents approximately 2,082,000 gsf more development than exists today within the Study Area in the existing conditions and 1,098,000 gsf more development than is anticipated in the Comprehensive Plan.

**Table 1-1: Comparison of Redevelopment Scenarios with Existing Conditions**

	<b>Existing Conditions</b>	<b>Scenario 1: Comprehensive Plan</b>	<b>Scenario 2: Master Plan</b>	<b>Scenario 3: Maximum Commercial</b>	<b>Scenario 4: Maximum Residential</b>
Office	1,873,000	1,546,000	1,862,000	3,261,000	1,094,000
Commercial / Retail/Hotel		15,000	174,000	15,000	15,000
Office & Light Industrial Mix		1,296,000	1,296,000	1,296,000	1,296,000
Residential	31,000	31,000	914,000	31,000	1,581,000
<b>TOTAL:</b>	<b>1,904,000</b>	<b>2,888,000</b>	<b>4,246,000</b>	<b>4,603,000</b>	<b>3,986,000</b>

**SUMMARY OF MAJOR ISSUES**

**Wastewater (Item 18)**

The western portion of the Gateway Study Area, mainly west of Parklawn Avenue, is serviced by a trunk sanitary sewer line that flows south into Bloomington along Computer Avenue and to Lift Station No. 10 (see **Figure 18-1**). Once this line crosses the border into Bloomington, it becomes the Metropolitan Council’s interceptor line referred to as MCES BN-499 Interceptor. The area east of Parklawn Avenue is serviced by a trunk sanitary sewer that flows north to Edina’s Lift Station No. 6, and is eventually discharged into the Metropolitan Council Environmental Services (MCES) Richfield-491 interceptor sewer. The parcels immediately adjacent to France Avenue discharge sewage directly into Edina Lift Station No. 22, where flow is eventually discharged into the MCES Richfield-491 interceptor sewer.

For the eastern portion of the Gateway Study Area, mainly from Parklawn Avenue east to France Avenue, the existing sanitary sewer infrastructure is adequately sized to support any additional flows associated with all scenarios, both within and downstream of the Study Area.

For the western portion of the Gateway Study Area, improvements to the sanitary sewer system will be needed. For all four scenarios, it is necessary to upgrade the pump sizes at the Metropolitan Council’s Lift Station No. 10 when a net increase in redevelopment of 300,000 gsf occurs. It will also be necessary to upgrade the 9-inch line within Edina when a net increase in redevelopment of 648,000 gsf occurs. More detailed sanitary sewer analysis for the Gateway Study Area can be found in **Item 18** of this report.

### **Water Supply (Item 13)**

The portion of the Gateway Study Area west of Parklawn Avenue receives water service from Bloomington. The area east of Parklawn Avenue, receives water service from Edina. **Figure 13-2** shows the areas serviced by Bloomington and Edina. There are two public wells located immediately north of the Gateway Study Area within the Fred Richards Golf Course as shown on **Figure 13-1**.

For the Bloomington-serviced portion of the Gateway Study Area, there is adequate capacity within Bloomington's system to accommodate each of the development scenarios. For the Edina-serviced portion of the Gateway Study Area, full redevelopment increases the peak day water demand above the City's existing firm capacity, based on the 2002 Water Distribution System Analysis. Edina has performed some upgrades to its existing wells and pumping systems that have likely resulted in increased water system firm capacity that may be adequate to support the increase in peak day water demand.

### **Storm Water Management (Item 17)**

A general storm water management analysis for the four redevelopment scenarios has been completed and is included in **Item 17**. Any redevelopment within the Gateway Study Area will be required to develop a site-specific storm water management plan that provides volume control, rate control, and treatment of storm water in conformance with the Edina Water Resource Management Plan, the Nine Mile Creek Watershed District, and the Minnesota Pollution Control Agency (MPCA) NPDES Construction permit. Edina is a designated MS4 City; therefore any redevelopment will need to show it is not degrading downstream water resources. Redevelopment is also required to meet the policies outlined in Edina's Comprehensive Water Resource Management Plan and the Final AUAR Mitigation Plan.

### **Transportation (Item 21)**

The existing transportation infrastructure will require various upgrades, mainly at intersections, to allow for the increase in traffic volumes anticipated as a result of the Gateway Study Area redevelopment. The extent of the necessary improvements range from adding turn lanes at intersections and interchange reconstruction. The majority of the recommended transportation system upgrades would occur at the TH 100 and 77<sup>th</sup> Street West interchange, as well as along France Avenue, between Interstate 494 (I-494) and Parklawn Avenue. Additional roadway improvements within the Gateway Study Area are also recommended to accommodate increase in traffic volumes that can be anticipated within the Gateway Study Area. **Item 21** provides more detail regarding the needed roadway improvements.

### **Fish and Wildlife (Item 11)**

The majority of the Gateway Study Area is urban and developed in nature. Therefore, the Study Area offers very limited habitat for wildlife. The Fred Richards Golf Course to the north of the Study Area and the pond along the south border of the Study Area has some aquatic habitat including shallow marshes and small wooded areas. Given that the Gateway Study Area is already fully developed, no net impact on wildlife can be reasonably expected.

# FINAL MITIGATION PLAN FOR GATEWAY STUDY AREA

Pursuant to Minnesota Rules, a mitigation plan has been developed as part of this Final AUAR. This mitigation plan applies to each of the proposed redevelopment scenarios unless otherwise noted.

## **A. Land Use Compatibility and Permitting**

A1. The proposed change in land use of Scenarios 2, 3, and 4 at the Pentagon Towers and Pentagon Quads site will require a Comprehensive Plan Amendment.

A2. Any redevelopment will be required to meet Edina zoning requirements.

A3. Any project proposers will be required to obtain any necessary approvals and permits.

A4. If components of a proposed project exceed Edina City Code requirements, variances from the City's requirement will need to be applied for by the developer. The City will review these variance requests and make a determination as to the approval or denial of the project as part of the review process. A project proposer could also seek to amend the City Code. This request would also be reviewed by the City.

## **B. Geologic Hazards, Erosion Control, and Hazardous Material**

B1. Prior to demolition an asbestos survey shall be completed by a project proposer. At the time of demolition, any necessary asbestos abatement will need to be completed by the project proposer in compliance with MPCA requirements.

B2. The management, containment, and clean up of any spills that may occur within the Study Area during construction will be addressed by the permit holders of the MPCA NPDES/SDS Storm Water Construction Permit and its accompanying Storm Water Pollution Prevention Plan preparation.

B3. If a neighborhood convenience store and gas station is proposed, the project proposer will be required to adhere to State regulations for containment of underground petroleum tanks and an annual license would be needed.

B4. The Storm Water Pollution Prevention Plan (SWPPP), including temporary and permanent seeding and staging plans, will be required to be submitted by each project proposer and reviewed by Edina.

B5. The project proposer will need to develop an erosion control plan and submit this plan to the Nine Mile Creek Watershed District for review and approval.

B6. During construction, the project proposer and their contractor will implement Best Management Practices as needed to prevent erosion and sedimentation of downstream water resources.

B7. Edina will develop a SWPPP and obtain an NPDES permit for the construction of any public infrastructure improvements (sanitary sewer, storm sewer, water main) that disturb one acre of land or more.

B8. Edina will conduct erosion control inspections during construction.

B9. Project proposers will make environmental hazard investigation documents, such as Phase I Environmental Assessments, available to Edina.

B10. Project proposers will be required to remediate any contaminated soils encountered in conformance with MPCA regulations.

B11. Project proposers will be required to remove and properly dispose of trash and debris located within a project site, including all demolition materials that may include asbestos.

B12. Municipal waste hauler companies will make residential and commercial recycling programs available to the Study Area. General municipal waste will be removed by these waste hauler companies.

B13. The NPDES Phase II Construction Site permit requires a site specific Storm Water Pollution Prevention Plan (SWPPP) to be completed for the construction by the project proposer. This SWPPP is required to include pollution prevention management measures for solid waste and hazardous material spills that occur during construction.

B14. Mitigation includes conformance with the Edina spill response plan. Spills will be reported to the fire chief and/or applicable City Staff. The fire chief and/or applicable City Staff will in turn notify any other appropriate officials depending on the nature of the spill.

B15. Project proposers will be required to develop a temporary dewatering plan for construction activities, review this plan with Edina and Nine Mile Creek Watershed District for approval, and conform to the dewatering requirements of the Department of Natural Resources (DNR) and NPDES Construction permit.

B16. If a redevelopment project involves permanent dewatering for underground facilities, a detailed dewatering plan is required to be developed by the project proposer. This plan would include anticipated dewatering amounts, direction of discharge, analysis of impact on adjacent ponds and downstream receiving waters, and impact on the organic material within the Study Area for the potential for subsidence. The plan will need to be submitted to Edina, Nine Mile Creek Watershed District, and DNR for review and/or approval.

### **C. Fish, Wildlife, Wetlands, and Ecologically Sensitive Resources**

C1. Buildings to be removed as part of redevelopment will be field checked by the project proposer to determine if there are nesting Peregrine Falcons on the structure. If falcons are noted nesting on the structure, the site cannot be disturbed until the juvenile birds have fledged and left the nest.

C2. The project proposer will be required to delineate wetlands within their project boundaries, if any, and review these delineations with the Nine Mile Creek Watershed District and Edina to determine jurisdictional status. The Nine Mile Creek Watershed District is the Local Government Unit for the Wetland Conservation Act and will review and verify any wetland delineations.

C3. If wetland impact is proposed, the project proposer will be required to minimize impact to the maximum extent possible and mitigate for any unavoidable impacts in conformance with the Wetland Conservation Act.

#### **D. Municipal Water Use and Service**

D1. Edina will work with Bloomington to determine the needs for water system capacity improvements, water main upgrades, and future service to the Gateway Study Area.

D2. In conjunction with their Comprehensive Plan update, Edina will complete an update to the 2002 Water Distribution System Analysis for the entire city to determine what current and future water system improvements may be necessary to continue to serve the City's water needs and maintain a water system firm capacity above the maximum daily water use within the City.

D3. As redevelopment occurs, Edina will complete an analysis of the water mains within the Gateway Study Area to determine if performing water main replacement is necessary and if it should occur in conjunction with other potential infrastructure improvements, such as sanitary sewer, storm sewer, and transportation improvements.

D4. Any abandoned wells found within the Gateway Study Area will be sealed in accordance with Minnesota Department of Health guidelines. This will be the responsibility of the project proposer.

D5. In accordance with Edina's Wellhead Protection Plan, continued protection of the existing Drinking Water Supply Management Areas located within the Gateway Study Area as shown in **Figure 13-1** will be required for redevelopment projects.

D6. There is potential for areas that redevelop within the Bloomington service area to request to be served by Edina. If this occurs, additional analysis and water main improvements will need to be completed by Edina in coordination with Bloomington.

D7. Individual redevelopment may require the installation of service pumps to serve multi-story buildings and to provide adequate fire protection. The size and type of pumps will vary based on individual building characteristics, should meet the existing local building and fire protection codes, and will be the responsibility of the developer.

## **E. Water Quality and Quantity**

E1. Redevelopment projects will be required to be designed to meet the policies of the most current Edina Comprehensive Storm Water Management Plan.

E2. Redevelopment projects will be required to be designed to meet the policies of the most current Nine Mile Creek Watershed District requirements.

E3. Redevelopment within the Gateway Study Area will be required to limit peak runoff rates to at least existing conditions and reduce the runoff volume so as not to negatively impact the existing storm sewer system.

E4. Redevelopment needs to reduce the amount of impervious surface within the project limits or develop a site specific storm water management plan that shows that the project will not impact downstream pollutant or volume loading.

E5. If warranted by Edina's Nondegradation Plan (completion anticipated in January 2008), project proposers will need to include storm water management strategies that reduce the total suspended solid loadings, total phosphorous pollutant loadings, and storm water runoff volumes from the Gateway Study Area.

E6. Any redevelopment project that disturbs more than one acre of land is required to develop a Storm Water Pollution Prevention Plan and obtain an NPDES permit from the MPCA.

E7. Edina and project proposer(s) will investigate the expansion of the existing ponding areas within the Fred Richards Golf Course to provide additional storage and treatment as outlined in Edina's Water Resource Management Plan.

E8. The Cities of Edina and Bloomington will petition the Nine Mile Creek Watershed District to expand the South Pond (SP\_1) pond to provide additional storm water treatment for the area.

E9. As Total Maximum Daily Load (TMDL) studies are completed for Nine Mile Creek, the results of these studies will be reviewed by Edina. Redevelopment in the Study Area will be required to meet any mitigation and pollutant load reductions that may be outlined within the TMDL studies.

E10. The project proposer will review and determine which Low Impact Development (LID) practices are feasible to be used for each parcel. Edina will review the LID techniques and encourage their use to the greatest extent possible.

E11. A maintenance plan is required to be reviewed and approved by the Nine Mile Creek Watershed District for privately constructed and maintained storm water management facilities.

**F. Wastewater Mitigation Plan**

F1. Any redevelopment activities that may increase the total sanitary sewer flows within Service Area A beyond threshold limits for peak capacity will require upgraded facilities within the Gateway Study Area (Computer Avenue sanitary sewer) and Bloomington (MCES Bloomington Lift Station No. 10) to accommodate increased flows.

F2. Edina, Bloomington, and Metropolitan Council Environmental Services will continue discussions and analysis regarding proposed capacity upgrades to Bloomington Lift Station No. 10 and the MCES BN-499 Interceptor along West 84<sup>th</sup> Street in Bloomington.

F3. Edina will complete its update to their Comprehensive Sanitary Sewer Plan.

F4. Edina will upgrade Lift Station No. 22.

F5. In conjunction with redevelopment activities, Edina will determine the condition of the existing sanitary sewer pipe within the Gateway Study Area to determine if repairs or replacement is necessary based on in-place pipe condition and infiltration potential.

**G. Traffic and Transportation**

G1. Scenarios 1 and 4

The following mitigation strategies are needed for Scenario 1 and 4 to accommodate both 2014 and 2030 traffic projections:

Intersection: France Avenue / West 76<sup>th</sup> Street  
Improvement: Extend one southbound thru lane on France Avenue to create a total of four thru lanes

Intersection: France Avenue / West 78<sup>th</sup> Street  
Improvement: Eastbound dual right turn lanes on West 78<sup>th</sup> Street  
Southbound lanes approaching the I-494 ramps restriped to provide exclusive lanes to both westbound I-494 and eastbound I-494. The right lane will drop at the westbound I-494 ramp providing an exclusive ramp lane. The second lane will also be an exclusive lane leading to I-494 eastbound, reducing the weaving and stacking of vehicles that occur today. The County has expressed interest in participation.

Intersection: Edina Industrial Boulevard / West 78<sup>th</sup> Street  
Improvement: Eastbound dual left turn lanes on West 78<sup>th</sup> Street

Intersection: Edina Industrial Boulevard / Metro Boulevard  
Improvement: Add southbound right turn lane on Metro Boulevard, restriping the existing two southbound lanes to accommodate an exclusive left turn lane, and a thru/left lane, providing dual left turn lanes.  
Add 300 foot eastbound left turn lane on Edina Industrial

Boulevard

Intersection: Northbound TH 100 / West 77<sup>th</sup> Street  
Improvement: Add 150 foot northbound right turn lane on Frontage Road  
Westbound dual right turn lanes on West 77<sup>th</sup> Street

G2. Scenario 2

Scenario 2 will require **all the improvements listed above** in addition to the following:

Intersection: Minnesota Drive / France Avenue  
Improvement: Dual westbound left turn lanes on Minnesota Drive  
Eastbound dual left turn lanes on Minnesota Drive

Intersection: Northbound TH 100 / West 77<sup>th</sup> Street  
Improvement: Add 150 foot eastbound right turn lane on West 77<sup>th</sup> Street

Intersection: Computer Avenue / West 77<sup>th</sup> Street  
Improvement: Northbound dual left turn lanes on Computer Avenue

Intersection: Minnesota Drive / West 77<sup>th</sup> Street / Johnson Avenue  
Improvement: Southbound dual left turn lanes on West 77<sup>th</sup> Street

G3. Scenario 3

Scenario 3 will require **all the above improvements listed under Scenarios 1, 2, and 4** in addition to the following:

Intersection: Minnesota Drive / France Avenue  
Improvement: Eastbound dual right turn lanes on Minnesota Drive

Intersection: France Avenue / West 78<sup>th</sup> Street  
Improvement: Westbound dual right turn lanes on West 78<sup>th</sup> Street

Interchange: TH 100 / West 77<sup>th</sup> Street  
Improvement: Six-lane section from Metro Boulevard to Computer Avenue  
Dual left turn turns at both TH 100 Ramps (Hence an eight-lane bridge)

G4. General

The mitigation measures discussion above (G1 – G3) are needed to address full build-out of the site and surrounding area. Specific mitigation measures required for proposed development plans will be established through traffic and transportation

studies required for each development proposal. These proposals will need to document compliance within the AUAR and mitigation plan.

**G5. Transit/Non-Motorized Transportation**

As redevelopment occurs in the Gateway Study Area, consideration of site-specific improvements needs to be included as developments are proposed. These would include upgrading the existing transit facilities, including bus shelters, to become ADA compliant and improving the sidewalk and/or path connections in and around each redevelopment.

**H. Odor, Noise, and Dust**

H1. During construction activities, the project proposer and contractor shall observe all dust control Best Management Practices for fugitive dust.

H2. Edina will limit construction activities and any other activities that produce noise audible outside the perimeter of a property to between 7:00AM to 9:00PM Monday through Friday and between 8:00AM and 7:00PM on Saturday, Sunday, and holidays.

H3. Noise mitigation will be necessary if any residential units are constructed near Receptor 2, located in the southwest quadrant of TH 100/West 77<sup>th</sup> Street. Any residential buildings should be constructed using noise abatement methods. Noise abatement requirements to conform to state standards can be found in Minn. Rules 7030.0050, subp. 3.

**I. Archaeological, historical, or architectural resources**

I1. Prior to redevelopment of the Pentagon Towers and Quads sites that would require razing of the existing structures, an evaluation and documentation of the historical and architectural significance of the sites will be needed by the project proposer. This information will need to be submitted to Edina.

**J. Cumulative Impacts**

J1. Edina will work with Bloomington and potentially participate in a regional traffic study that will assist in anticipating future potential redevelopment within the TH 100/I-494 area and plan for infrastructure improvements.

Edina will also coordinate with other entities to address cumulative impacts. These items have been addressed in other areas of the AUAR and include mitigation plan items D1, D6, E8, F1, and F2.

# GATEWAY STUDY AREA FINAL ALTERNATIVE URBAN AREAWIDE REVIEW

**1. PROJECT TITLE**

Gateway Study Area Alternative Urban Areawide Review (Final AUAR)

**2. PROPOSER**

Environmental Quality Board (EQB) guidance indicates no response is necessary

**3. RGU**

City of Edina  
Mr. Cary Teague  
Planning Director  
4801 West 50<sup>th</sup> Street  
Edina, MN 55424  
E-mail: [cteague@ci.edina.mn.us](mailto:cteague@ci.edina.mn.us)

**4. REASON FOR EAW PREPARATION**

EQB guidance indicates no response is necessary

**5. PROJECT LOCATION**

County: Hennepin  
City/Township: Edina T28N R24W S ¼ SECTION 31

County map showing the Gateway Study Area: **Figure 5-1: Location Map**  
U.S. Geological Survey Map: **Figure 5-2: USGS Location Map**  
Map clearly depicting the boundaries of the AUAR and any subdistricts used in the  
AUAR analysis. **Figure 5-3: Aerial Location Map**

**6. DESCRIPTION**

**a. Provide an AUAR summary of 50 words or less to be published in the *EQB Monitor*.**

The City of Edina has prepared a Final AUAR for the Gateway Study Area located within 135 acres in southeastern Edina. The AUAR analyzes four scenarios for redevelopment in an area currently developed located between TH 100, Minnesota Drive, France Avenue and 76<sup>th</sup> Street.

**b. Give a description of the following elements for each major development scenario:  
- anticipated types and (intensity (density) of residential and  
commercial/warehouse/light industrial development throughout the AUAR area;**

- infrastructure planned to serve development (roads, sewers, water, stormwater system, etc.)
- information about the anticipated staging of various developments, to the extent known, and of the infrastructure, and how the infrastructure staging will influence the development schedule.

The Final Gateway Study Area AUAR is being prepared as a result of a developer, Gateway Development, Edina LLC (herein referred to as the “Developer”) purchasing a series of parcels in two different locations within the Gateway Study Area with the intent to perform redevelopment. These parcels are referred to in this document as Pentagon Towers and Pentagon Quads sites and are shown in **Figure 5-3**. In response to the Developer’s request to redevelop these parcels, Edina decided to review the potential for greater redevelopment activity within the commercial and industrial area along West 77<sup>th</sup> Street adjacent to these recently acquired parcels.

### **A. Description of Study Area**

The Gateway Study Area is approximately 135 acres and is bounded by Trunk Highway 100 (TH 100) on the west; France Avenue on the east; 76<sup>th</sup> Street West and Fred Richards Golf Course on the north; and Edina’s border with Bloomington on the south. The area is shown on **Figures 5-1, 5-2, and 5-3**.

The existing cover types are urban development, with minimal green space in the form of maintained lawns along roadway boulevards and parking lot edges. The majority of parcels are occupied by office and light industrial/warehousing business applications. Some wetlands and drainage basins exist within the Fred Richards Golf Course to the north and there is a pond along Edina’s border with Bloomington to the south. The existing cover types are described in **Item 10**.

The Gateway Study Area currently contains a mixture of light industrial/warehouse, commercial, and office properties. There is a total of 1,904,000 gross square feet (gsf) of light industrial, commercial, office space, with a small area of multi-family residential use. A summary of the existing conditions uses is shown in **Table 6-3**. The existing surrounding land use is shown on **Figure 5-4**.

Access to the Gateway Study Area from TH 100 is available at the northwest boundary via an interchange at 77<sup>th</sup> Street West. Similarly, access from Interstate 494 (I494) is available approximately a quarter mile to the southeast of the Gateway Study Area via an interchange at France Avenue.

### **B. Description of Redevelopment Scenarios**

This Final AUAR analyzes four redevelopment scenarios. As required by Minnesota Rules 4410.3610, Scenario 1 analyzes redevelopment as permitted under the Edina Comprehensive Plan (Comprehensive Plan) dated 1999. Scenario 2 analyzes redevelopment as proposed by the Developer within its acquired properties and the remaining two scenarios look at maximum density options for commercial or residential redevelopment. The land uses analyzed in the AUAR included the following as shown on **Figure 6-1, 6-2, 6-3, and 6-4**:

**Table 6-1. Zoning District Uses**

POD-1: Planned Office District-1	Office buildings, clinics
POD-2: Planned Office District-2	Office buildings, clinics
PID: Planned Industrial District	Office buildings, light industrial/warehouses, and manufacturing uses.
PCD-2: Planned Commercial District-2	Commercial and retail uses. Includes office uses.
PCD-3: Planned Commercial District-3	Commercial and retail uses. Includes office uses. (Generally allows more square footage than PCD-2)
PSR-4: Planned Senior Residence-4	Senior citizen residential units in groups of four or more such as condos, townhomes, or apartments specifically for senior citizen use. Shops, restaurants and other services primarily intended for the use and convenience of residents are allowed.
MDD-5: Mixed Development District-5	Residential units (minimum of 10), offices, financial institutions, and hotels.

**Scenario 1 – Comprehensive Plan (Figure 6-1)**

Scenario 1 represents the land uses and densities allowed under the Edina Comprehensive Plan (1999). Under this scenario, a combination of office, commercial, and light industrial land uses with a small area of residential use would be utilized in accordance with the Comprehensive Plan, resulting in up to 1,561,000 gsf of office and commercial space, 1,296,000 gsf of combined commercial and light industrial redevelopment, and 31,000 gsf of residential redevelopment for a total redevelopment potential of 2,888,000 gsf. This represents approximately 984,000 gsf more redevelopment than exists today within the Study Area in the existing conditions.

**Scenario 2 – Master Plan Scenario (Figure 6-2)**

Scenario 2 represents incorporating a “master plan” scenario brought forth by the Developer proposing to redevelop the Pentagon Towers and Pentagon Quads sites within the Gateway Study Area. The location of the Pentagon Towers and Quads properties proposed for redevelopment by the Developer are shown on **Figure 5-3**.

Within the Pentagon Towers site, the Developer is proposing to redevelop the site into 985,000 gsf of office space (6-14 stories high), 50,000 gsf of retail space, and a 150 room hotel totaling 80,000 gsf (seven stories high). This site currently contains 168,500 gsf of office space within six stories. All the existing buildings will be replaced with the redevelopment. Within the

Pentagon Quads site, the Developer is proposing to redevelop the site into 30,000 gsf of retail space, 183,000 gsf of office space (four stories), and 820 housing units (two to five stories). This site currently contains 492,000 gsf of office space. All but two of the existing office buildings will be replaced by the redevelopment.

The redevelopment for the remaining areas within the Gateway Study Area is the same as Scenario 1. For the purposes of this Final AUAR, the total redevelopment potential of the entire Study Area is analyzed, not just the Developer's properties. Therefore, potential redevelopment in the entire Study Area includes 3,252,000 gsf commercial, office, and light industrial, 914,000 gsf residential (with 856 residential units), and 80,000 gsf hotel for a total of 4,246,000 gsf of redevelopment. This scenario would require an amendment to the current Comprehensive Plan. This represents approximately 2,342,000 gsf more development than exists within the Study Area today in the existing conditions and 1,358,000 gsf more development than is anticipated in the Comprehensive Plan.

### **Scenario 3 – Maximum Commercial Build Scenario (Figure 6-3)**

Scenario 3 represents a maximum commercial build scenario where the majority of redevelopment would be in the form of new commercial, office and light industrial construction, totaling approximately 4,572,000 gsf of redevelopment. A small amount of new residential redevelopment would still remain, totaling approximately 31,000 gsf. The proposed redevelopment of the remaining parcels outside of the Pentagon Park and Quads area would remain consistent with Scenario 1. The total potential redevelopment for this scenario results in 4,603,000 gsf for the entire Study Area. This scenario would require an amendment to the current Comprehensive Plan. This represents approximately 2,699,000 gsf more development than exists today within the Study Area in the existing conditions and 1,715,000 gsf more development than is anticipated in the Comprehensive Plan.

### **Scenario 4 – Maximum Residential Scenario (Figure 6-4)**

Scenario 4 represents a maximum residential land use, which would convert the Pentagon Quads site to multi-family apartments and condominiums, while converting the Pentagon Towers site to a combination of commercial office and multi-family housing. This scenario would result in approximately 1,536 multi-family residential units and represent 1,581,000 gsf of residential redevelopment. The remaining area could redevelop into 2,405,000 gsf of commercial, office, and industrial redevelopment. The total potential redevelopment for this scenario results in 3,986,000 gsf for the entire Study Area. Like Scenario 2, this scenario would require an amendment to the current Comprehensive Plan. This represents approximately 2,082,000 gsf more development than exists today within the Study Area in the existing conditions and 1,098,000 gsf more development than is anticipated in the Comprehensive Plan.

**Table 6-2. Summary of Redevelopment Scenarios\***

Scenario	Total Acres Developed	Office Space		Office Space, Warehousing, & Light Industrial		Retail & Commercial (Mixed Use)		Housing & Residential (Mixed Use)		Hotel	
		Acres	Gross Square Feet (in millions)	Acres	Gross Square Feet (in millions)	Acres	Gross Square Feet (in millions)	Units	Gross Square Feet (in millions)	Rooms	Gross Square Feet (in millions)
1	122.68	70.95	1.546	49.59	1.296	2.14	0.015	36	-	-	-
2	122.68	31.84	1.862	49.59	1.296	41.25 <sup>a</sup>	0.094	856	0.914	150	0.080
3	122.68	70.95	3.261	49.59	1.296	2.14	0.015	36	-	-	-
4	122.68	31.84	1.094	49.59	1.296	41.25 <sup>b</sup>	0.015	1536	1.581	-	-

\* Calculations do not take into account existing or proposed wetlands, storm ponds, roads, right-of-way, or utility easements in the Gateway Study Area.

<sup>a</sup> Acreage includes mixed use redevelopment with commercial, retail, and office space applications.

<sup>b</sup> Acreage includes mixed use redevelopment with office space applications.

**Table 6-3: Comparison of Redevelopment Scenarios with Existing Conditions**

	Existing Conditions	Scenario 1: Comprehensive Plan	Scenario 2: Master Plan	Scenario 3: Maximum Commercial	Scenario 4: Maximum Residential
Office	1,873,000	1,546,000	1,862,000	3,261,000	1,094,000
Commercial / Retail/Hotel		15,000	174,000	15,000	15,000
Office & Light Industrial Mix		1,296,000	1,296,000	1,296,000	1,296,000
Residential	31,000	31,000	914,000	31,000	1,581,000
<b>TOTAL:</b>	<b>1,904,000</b>	<b>2,888,000</b>	<b>4,246,000</b>	<b>4,603,000</b>	<b>3,986,000</b>

**B. Description of Surrounding Areas**

The Gateway Study Area is located in southeastern Edina and is bordered by Bloomington to the south. Based on historical aerial photos, the area was utilized for cultivated agriculture purposes through the early 1960’s. At that time, the construction of I-494 to the south and TH 100 to the west ushered in suburban growth, resulting in the rapid commercial, office, and industrial development of the area. By the mid 1970’s the entire Gateway Study Area and its surroundings had developed into some form of commercial, office, or light industrial land use.

To the north of the Gateway Study Area are single family and multi-family residential uses, as well as the Fred Richards Golf Course. Lake Edina is within one-quarter mile of the northwest corner of the Gateway Study Area. To the east, south, and west are mixed-use commercial and

light industrial parcels. Nine Mile Creek is located just west of TH 100. Further details of the types of existing land use can be seen in the Edina Land Use Plan as shown on **Figure 5-4**.

### **C. Anticipated Infrastructure Improvements**

To accommodate redevelopment activities, varying levels of infrastructure improvements, such as wastewater, storm water, water main, and transportation infrastructure, will be necessary. These improvements are summarized below:

#### **Wastewater**

**Figure 18-1** shows the existing layout of sanitary sewer within and adjacent to the Gateway Study Area. The western portion of the Gateway Study Area, mainly west of Parklawn Avenue, is serviced by a trunk sanitary sewer line that flows south into Bloomington along Computer Avenue and to Lift Station No. 10. Once this line crosses the border into Bloomington, it becomes the Metropolitan Council's interceptor line referred to as MCES BN-499 Interceptor. The area east of Parklawn Avenue is serviced by a trunk sanitary sewer that flows north to Edina Lift Station No. 6, and is eventually discharged into the Metropolitan Council Environmental Services (MCES) Richfield-491 interceptor sewer. The parcels immediately adjacent to France Avenue discharge sewage directly into Edina Lift Station No. 22, where flow is eventually discharged into the MCES Richfield-491 interceptor sewer.

For the eastern portion of the Gateway Study Area, mainly from Parklawn Avenue east to France Avenue, the existing sanitary sewer infrastructure is adequately sized to support any additional flows associated with all redevelopment scenarios, both within and downstream of the Study Area.

For the western portion of the Gateway Study Area, improvements to the sanitary sewer system will be needed. For all four scenarios, it is necessary to upgrade the pump sizes at the Metropolitan Council's Lift Station No. 10 when a net increase in redevelopment of 300,000 gsf occurs. It will also be necessary to upgrade the 9-inch line within Edina when a net increase in redevelopment of 648,000 gsf occurs. More detailed sanitary sewer analysis for the Gateway Study Area can be found in **Item 18** of this report.

#### **Water Supply**

The portion of the Gateway Study Area west of Parklawn Avenue receives water service from Bloomington. The area east of Parklawn Avenue receives water service from Edina. **Figure 13-2** shows the areas serviced by both cities. There are two public wells located immediately north of the Gateway Study Area within the Fred Richards Golf Course as shown on **Figure 13-1**.

For the Bloomington-serviced portion of the Gateway Study Area, there is adequate capacity within Bloomington's system to accommodate each of the redevelopment scenarios. For the Edina-serviced portion of the Gateway Study Area, full redevelopment increases the peak day water demand above the City's existing firm capacity, based on the 2002 Water Distribution System Analysis. Edina has performed some upgrades to its existing wells and

pumping systems that have likely resulted in increased water system firm capacity that may be adequate to support the increase in peak day water demand.

Edina has expressed some interest in looping its water main system along West 77<sup>th</sup> Street to TH 100, and bringing the portions of the Gateway Study Area currently receiving water service from Bloomington into Edina's water system. This potential improvement would further require that an updated comprehensive water system analysis be performed, to ensure that Edina can handle the increase in water demand. **Item 13** contains the water system analysis in more detail.

### **Storm Water Management**

A general storm water management analysis for the four redevelopment scenarios has been completed and is included in **Item 17**. Any redevelopment within the Gateway Study Area will be required to develop a site-specific storm water management plan that provides volume control, rate control, and treatment of storm water in conformance with Edina's Water Resource Management Plan, the Nine Mile Creek Watershed District, and the Minnesota Pollution Control Agency (MPCA) NPDES Construction permit. Edina is a designated MS4 City; therefore any redevelopment will need to show it is not degrading downstream water resources. Redevelopment is also required to meet the policies outlined in Edina's Comprehensive Water Resource Management Plan and the Final AUAR Mitigation Plan.

### **Transportation**

The existing transportation infrastructure will require various upgrades, mainly at intersections, to allow for the increase in traffic volumes anticipated as a result of the Gateway Study Area redevelopment. The extent of the necessary improvements range from adding turn lanes at intersections to interchange reconstruction. The majority of the recommended transportation system upgrades would occur at the TH 100 and 77<sup>th</sup> Street West interchange, as well as along France Avenue, between I-494 and Parklawn Avenue. Additional roadway improvements within the Gateway Study Area are also recommended to accommodate increase in traffic volumes that can be anticipated within the Gateway Study Area. **Item 21** provides more detail regarding the needed roadway improvements.

## **D. Development Phasing**

For the Pentagon Towers and Pentagon Quad parcels that are currently proposed for redevelopment by the Developer, construction is anticipated to begin in 2008 and last for a minimum of five years into 2013 and possibly beyond, depending on commercial office space and residential housing demand. The remaining portions of the Gateway Study Area are not known by Edina to have any redevelopment planned, and therefore, the redevelopment phasing for these parcels is unknown.

Sanitary sewer improvements are needed for any projects that exceed a net 300,000 gsf of redevelopment within the western portion of the Study Area that is served by the Metropolitan Council Lift Station No. 10 in Bloomington. This trigger, along with market factors, will dictate the phasing for the redevelopment.

**7. PROJECT MAGNITUDE DATA**

**Total project acreage:** 135 acres

**Number of residential units:** attached See tables attached See tables **maximum per building** NA

**Commercial, industrial or institutional building area (gross floor space):**  
**total square feet** See tables

**Table 1-1** summarizes the proposed acreages and gsf for each land use for each scenario. The housing and residential land uses proposed in Scenarios 2 and 4 are anticipated to be in the form of senior apartments and townhomes. In all instances where residential land use is proposed, it is expected that the use will be in the form of mixed use development with commercial and office space utilizing the ground floor of most residential buildings.

In the existing conditions, the buildings within the Gateway Study Area are mainly one and two story buildings. There are three and four-story buildings interspersed in the area with six-story buildings located on the eastern and western borders of the Study Area. The Pentagon Towers site currently contains a six-story building and the Pentagon Quads site contains two and three-story buildings.

Building heights as a result of each redevelopment scenario may range from four stories for residential buildings up to 14 stories for office building. In accordance with Edina zoning policies, appropriate setbacks and screening will need to be provided. If a redevelopment proposal exceeds Edina’s requirements, a variance would need to be obtained by the project proposer or the project proposer could seek to have the City Code revised. For each zoning district, the following building heights are allowed:

**Table 7-1: Allowed Building Height by Zoning District**

<b>Zoning District</b>	<b>Allowed Building Height</b>
Mixed Development District (MDD-5)	Building height determined by allowed building setback
Planned Senior Residence (PSR-4)	Building height determined by allowed building setback
Planned Office Development (POD-1)	Four stories or 50 feet, whichever is less
Planned Office Development (POD-2)	Building height determined by allowed building setback
Planned Commercial Development (PCD-2)	Four stories or 50 feet, whichever is less
Planned Commercial Development (PCD-3)	Height is determined by setback; a minimum 50 foot setback is required
Planned Industrial Development (PID)	Four stories or 50 feet, whichever is less

**Project Magnitude Mitigation Plan**

- If components of a proposed project exceed Edina City Code requirements, variances from the City’s requirement will need to be applied for by the developer. The City will review these variance requests and make a determination as to the approval or denial of the project as part of the review process. A project proposer could also seek to amend the City Code. This request would also be reviewed by the City.

**8. PERMITS AND APPROVALS. List all known local, state and federal permits, approvals and financial assistance for the project. Include modifications of any existing permits, governmental review of plans, and all direct and indirect forms of public financial assistance including bond guarantees, Tax Increment Financing and infrastructure.**

**Table 8-1. List of Government Approvals, Permits, and Financial Assistance**

<i>Federal</i>	<i>Permit/Approval</i>
US Army Corps of Engineers	Wetland Permit or determination of no jurisdiction
<i>State</i>	<i>Permit/Approval</i>
MPCA	NPDES/SDS General Stormwater Permit for Construction Activity
MPCA	NPDES/SDS Stormwater Permit for operation, if needed
MPCA	Sanitary Sewer Extension Permit
MPCA	Application to Voluntary Inspection and Compliance Program if hazardous materials remediation is needed
Department of Natural Resources	Temporary dewatering for construction
Department of Natural Resources	Permanent dewatering permit for dewatering of underground parking facilities, if needed
Department of Health	Water main and sanitary sewer replacement or upsizing; well capping and closures
Minnesota Department of Transportation	Work within Right of Way; if needed
Minnesota Department of Transportation	Drainage permit, if needed
Minnesota Department of Transportation	Plat approval, if needed
<i>Regional</i>	<i>Permit/Approval</i>
Metropolitan Council	Comprehensive Plan amendment, if Scenarios 2, 3, or 4 are proposed
Metropolitan Council	Sewer extension approval

Nine Mile Creek Watershed District	WCA Approval, if needed
Nine Mile Creek Watershed District	Storm Water Management Plan Approval
Nine Mile Creek Watershed District	Dewatering plan review
<b><i>County</i></b>	<b><i>Permit/Approval</i></b>
Hennepin County	Approval of France Avenue Improvements, if needed
Hennepin County	Plat Approval
<b><i>Local</i></b>	<b><i>Permit/Approval</i></b>
City of Edina	AUAR and Mitigation Plan adoption
City of Edina	Redevelopment plan review
City of Edina	Preliminary plat approval
City of Edina	Final plat approval
City of Edina	Building & demolition permits
City of Edina	PUD Review and Approval, if needed
City of Edina	Rezoning, Conditional Use Permit, and Variance, if needed
City of Edina	Redevelopment Agreement
City of Edina	Sanitary Sewer Connection Permit
City of Edina	Municipal Water Connection Permit
City of Edina	Stormwater Management Plan Approval and Dewatering Plan review
City of Bloomington	Municipal Water Connection Permit

**Permits and Approvals Mitigation Plan**

- Any project proposer will be required to obtain any necessary approvals and permits.

- 9. LAND USE. Describe current and recent past land use and development on the site and on adjacent lands. Discuss project compatibility with adjacent and nearby land uses. Indicate whether any potential conflicts involve environmental matters. Identify any potential environmental hazards due to past site uses, such as soil contamination or abandoned storage tanks, or proximity to nearby hazardous liquid or gas pipelines.**

### **Existing Conditions**

The Gateway Study Area is located in southeastern Edina. Based on historical aerial photos, the area has historically been a combination of wetland and cultivated agricultural areas through the early 1960's. At that time, the construction of I-494 to the south, and TH 100 to the west ushered in suburban growth, resulting in the rapid commercial, office, and industrial development of the area. By the mid 1970's the entire Gateway Study Area had developed into some form of commercial or industrial land use.

To the north of the Gateway Study Area are single family and multi-family residential uses, as well as the Fred Richards Golf Course. Lake Edina is within one-quarter mile of the northwest corner of the Gateway Study Area. To the east, south, and west of the Gateway Study Area are mixed-use commercial, office, and industrial parcels.

The historic aerial photos of the Gateway Study Area were reviewed (and are available upon request from Edina). These photos show the entire Gateway Study Area historically consisted of wetlands, with intermittent agricultural and/or farmstead land uses. These wetlands were significantly reduced through agriculture and drainage and eventually filled as development occurred in the 1960's.

Information from the MPCA and FirstSearch was obtained related to potential environmental hazards due to past land uses. Information from the MPCA indicated the following waste and spill sites are either completely or partially within the Gateway Study Area (see **Figure 9-1**):

- MPCA ID #3484 – 7625 Parklawn Avenue – Type Unknown, Cleanup Complete
- MPCA ID #6324 – 7800 Commercial Avenue – Type Unknown, cleanup Complete
- MPCA ID #216832 – 4930 West 77<sup>th</sup> Street – Leaking Underground Storage Tank (LUST)
- MPCA ID #222439 – 7711 Normandale Boulevard – LUST
- MPCA ID #223671 – 7851 Normandale Boulevard – LUST
- MPCA ID #213556 – 4451 West 76<sup>th</sup> Street – LUST
- MPCA ID #225305 – 7711 Normandale Boulevard – LUST
- MPCA ID #213566 – Pentagon Office Park - LUST

Information from FirstSearch (available upon request) indicated that there were small quantity generators of hazardous material and underground storage tanks within the Study Area. Some Leaking Underground Storage Tanks were also noted; however, these spills sites have been

closed. The Seagate site located south of the Study Area has had a number of spills in the past, but information indicates that these spills have been contained and closed. Additional information about these sites is available upon request from Edina.

#### **Impact of Development Scenarios 1 through 4**

The four scenarios presented in this study reflect land uses that are common in this area of Edina. The existing land use consists of office space and light industrial, which are the primary land uses proposed in Scenario 1 and Scenario 3. The introduction of high-density housing in the form of condominiums or apartments would compliment the existing apartments and condominium apartments immediately to the north. Also, the addition of retail space and hotel would compliment the existing hotels and retail areas immediately adjacent to the east, west, and south of the Gateway Study Area. In general, the land uses in the Gateway Study Area are compatible with each other and the surrounding land uses.

#### **Land Use Mitigation Plan**

- Project proposers will make environmental hazard investigation documents, such as Phase I Environmental Assessments, available to Edina.
- Project proposers will be required to remediate any contaminated soils encountered in conformance with MPCA regulations.
- Project proposers will be required to remove and properly dispose of trash and debris located within a project site, including all demolition materials that may include asbestos.

#### **10. COVER TYPES. Provide a cover type map and overlay map showing anticipated development.**

##### **Existing Conditions**

The topography for the Gateway Study Area can be described as generally flat. **Figure 10-1** shows the existing cover types based on aerial photos and land use characteristics, with the acreages summarized in **Table 10-1**. Based on this information and field review, the Gateway Study Area is fully developed into office, commercial, and light industrial land uses. Roads, sidewalks, and parking lots are included in this area along with lawn areas and boulevard or parking lot planter trees. There is a pond that is used for storm water retention purposes in the southeastern portion of the Gateway Study Area. This pond has been designated as the South Pond (SP\_1) as noted in Edina's Comprehensive Water Resource Management Plan. This ponding area is interconnected with Edina's storm water system.

**Table 10-1: Existing Cover Types**

<b>Cover Type</b>	<b>Acreage</b>
Type 1-8 wetland	0.00*
Ponds (SP_1)	3.20
Lakes	0.00.
Woodlands	0.00
Grasslands/croplands	0.00
Boulevards, Lawns, & Other Pervious Surfaces	21.33
Roadways, Buildings, and Other Impervious Surfaces	110.47
<b>TOTAL:</b>	<b>135.00</b>

\* No wetlands have been delineated in the Gateway Study Area. It is possible some exist along the edges of the pond or the southerly edge of the Fred Richards Golf Course as shown on **Figure 10-1**.

#### **Impacts of Development Scenarios 1 through 4**

Each of the four redevelopment scenarios would maintain the fully-developed, urban land use that currently exists. Any developer will be responsible for meeting all current Edina zoning requirements for building and structure setbacks.

Storm water treatment in the form of ponding, bioretention, or other best management practices may be utilized as part of redevelopment to create additional green space within the urban environment. The Developer of the Pentagon Towers and Pentagon Quads sites may use “green roofs” to create additional rainwater treatment and open space. The proposed land use types for each scenario are shown in **Figure 6-1** through **Figure 6-4**.

The existing storm water basin (SP\_1) along the south edge of the Gateway Study Area will be preserved and maintained as part of any redevelopment activity. This pond has been evaluated in Edina’s Water Resource Management Plan. While minor impact to the pond is anticipated with any of the redevelopment scenarios, the pond will be protected in conformance with Edina’s Water Resource Management Plan.

#### **Cover Types Mitigation Plan**

- Any redevelopment will be required to meet Edina zoning requirements.

**11. FISH, WILDLIFE, AND ECOLOGICALLY SENSITIVE RESOURCES**

- a. Identify fish and wildlife resources and habitats on or near the site and describe how they would be affected by the project. Describe any measures to be taken to minimize or avoid impacts.**

**Existing Conditions**

The existing fish, wildlife, and ecologically sensitive resources have been analyzed based on previous studies, historical aerial photos, and a field review. The habitat available for wildlife is a function of the vegetation present. The majority of the Gateway Study Area is urban and developed in nature. Therefore, it offers very limited habitat for wildlife. The Fred Richards Golf Course to the north of the Gateway Study Area, and the pond along the south border, provide some open areas for wildlife. However, wildlife present is that which has adapted to urban environments and are common in the area.

**Impacts of Development Scenarios 1 through 4**

The existing urban nature of the area and that of the proposed redevelopment of the Gateway Study Area is anticipated to consist of similar land uses and land covers. Therefore, no impact on the existing wildlife habit is to be expected.

- b. Are any state (endangered or threatened) species, rare plant communities or other sensitive ecological resources such as native prairie habitat, colonial waterbird nesting colonies or regionally rare plant communities on or near the site?  Yes  No**

**If yes, describe the resource and how it would be affected by the project. Indicate if a site survey of the resources has been conducted and describe the results. If the DNR Natural Heritage and Nongame Research program has been contacted give the correspondence reference number: ERDB 20070643. Describe measures to minimize or avoid adverse impacts.**

**Existing Conditions**

The Department of Natural Resources (DNR) Natural Heritage Database was consulted to determine if rare or endangered species are present in the area. The information from the DNR is contained in **Appendix B**. Based on this information, there are four known occurrences of three rare species that were noted outside of the Study Area. These occurrences include two threatened species (Blanding's Turtle [two sightings] and Peregrine Falcon) and one species of special concern (Common Moorhen). Information from the DNR can be found in **Appendix B**.

**Impacts of Development Scenarios 1 through 4**

Due to the existing urbanized land cover, the area does not currently provide suitable habitat for Blanding's Turtles or Common Moorhens. Blanding's turtles prefer shallow water with aquatic vegetation and sandy uplands for nesting. The Common Moorhen is a waterbird that prefers cattail/bulrush marshes with abundant vegetation. The limited availability of wetlands and the developed nature of the existing conditions are not conducive to provide prime habitat for these species.

Peregrine Falcons prefer nesting on cliff ledges along rivers or lakes. The birds will also nest on buildings or tall platforms. The falcon noted near the Study Area was located nesting on a building. No reports of falcons within the study have been noted.

**Fish, Wildlife, and Ecologically Sensitive Resources Mitigation Plan**

- Buildings to be removed as part of redevelopment will be field checked by the project proposer to determine if there are nesting Peregrine Falcons on the structure. If falcons are noted nesting on the structure, the site cannot be disturbed until the juvenile birds have fledged and left the nest.

- 12. PHYSICAL IMPACTS ON WATER RESOURCES. Will the project involve the physical or hydrologic alteration (dredging, filling, stream diversion, outfall structure, diking, and impoundment) of any surface waters such as a lake, pond, wetland, stream or drainage ditch?  Yes  No**  
**If yes, identify water resource affected. Describe alternatives considered and proposed mitigation measures to minimize impacts. Give the DNR Protected Waters Inventory (PWI) number(s) if the water resources affected are on the PWI.**

**Existing Conditions**

The Fred Richards Golf Course north of the Gateway Study Area contains a number of water bodies that act as water hazards within the golf course. Additionally, South Pond (SP\_1), as noted in Edina’s Comprehensive Water Resource Management Plan, is located between the border of Edina and Bloomington in the southern portion of the Study Area. These areas are also shown on the National Wetland Inventory as shown on **Figure 12-1**.

While there are no DNR Public Waters/Wetlands within the Study Area, there are a few outside of the area as shown on **Figure 12-1**. Lake Edina is located north of the Gateway Study Area and Nine Mile Creek is located west of TH 100. Storm water from the Study Area is eventually directed to Nine Mile Creek. Additional information about the storm water management of the Study Area is included in **Item 17**.

**Impacts of Development Scenarios 1 through 4**

While wetlands have not been delineated within the Gateway Study Area, there are very few water bodies in the area. Impacts to water bodies or ponding areas are anticipated to be minimized, due to the lack of wetlands in the Gateway Study Area. The South Pond (SP\_1) and the water features within the Fred Richards Golf Course are the ponding areas that may be subject to impact. This impact could include excavating or enlarging these ponding areas to provide additional storm water treatment for the area. These ponds currently provide storage and/or treatment in the existing conditions. To further provide water quality protection for downstream resources such as Nine Mile Creek, enlargement of these features will likely be proposed. By enlarging these ponding areas, the existing function of the ponds will be enhanced and additional protection to downstream resources will be provided.

**Physical Impacts on Water Resources Mitigation Plan**

- The Cities of Edina and Bloomington will petition the Nine Mile Creek Watershed District to expand the SP\_1 pond to provide additional storm water treatment for the area. (See **Item 17** for additional information).
- The project proposer will be required to delineate wetlands within their project boundaries, if any, and review these delineations with the Nine Mile Creek Watershed District and Edina to determine jurisdictional status. The Nine Mile Creek Watershed District is the Local Government Unit for the Wetland Conservation Act and will review and verify any wetland delineations.
- If wetland impact is proposed, the project proposer will be required to minimize impact to the maximum extent possible and mitigate for any unavoidable impacts in conformance with the Wetland Conservation Act.

**13. WATER USE. Will the project involve installation or abandonment of any water wells, connection to or changes in any public water supply or appropriation of any ground or surface water (including dewatering)?  Yes  No**

**If yes, as applicable, give location and purpose of any new wells; public supply affected, changes to be made, and water quantities to be used; the source, duration, quantity and purpose of any appropriations; and unique well numbers and DNR appropriation permit numbers, if known. Identify any existing and new wells on the site map. If there are no wells known on site, explain methodology used to determine.**

**Existing Conditions**

The portion of the Gateway Study Area west of Parklawn Avenue receives water service from Bloomington. The area east of Parklawn Avenue, receives water service from Edina. **Figure 13-2** shows the location and sizes of the existing water mains throughout the Gateway Study Area, and identifies the areas serviced by both cities.

Currently, only one private well exists within the Gateway Study Area boundaries. It is unknown whether this well is active or abandoned, or if the water used is for irrigation or potable water purposes. There are two public wells located immediately north of the Gateway Study Area within the Fred Richards Golf Course. These are Edina Well No. 10 and No. 11. The wells on the County Well Index are shown on **Figure 13-1**.

A Drinking Water Supply Management Area (DWSMA) for the two Edina wells has been established as a part of the City's current Wellhead Protection Program and is shown in **Figure 13-1**. There are several DWSMA's within Edina, but only two encompass portions of the Gateway Study Area. Redevelopment within DWSMA boundaries are subject to review for conformance with the Wellhead Protection Program so that any development does not result in increased potential for groundwater contamination.

The geology of Edina's existing wells is consistent with other communities in the Twin Cities Metro Area. The Paleozoic sedimentary rocks around the Twin Cities Metro area have three primary aquifers (in descending order): the Prairie du Chien-Jordan, the Franconian-Ironton-Galesville, and the Mt. Simon-Hinckley. Each of these is separated by a confining layer that essentially separates the aquifers. A summary of the characteristics of each aquifer is as follows:

**Prairie du Chien-Jordan Aquifer:** The Prairie du Chien – Jordan aquifer is the best producing aquifer in the Metro area. Prairie du Chien – Jordan wells are optimal because they generally produce the greatest amount of water per foot of aquifer drawdown. Thirteen of Edina's 15 existing operational wells are located in the Jordan aquifer, including Well No. 11 immediately north of the Gateway Study Area.

**Franconia-Ironton-Galesville Aquifer:** Due to its slow rate of recharge, the Franconia – Ironton – Galesville (FIG) aquifer is not commonly used in the Metro area. Water does not move through the aquifer very efficiently, causing pumping and drawdown problems. This can cause unanticipated well interference problems when adding new wells in the FIG, with the new wells frequently failing to meet expectations and old wells decreasing in productivity. This does not preclude any FIG wells, it just means that expectations must be kept modest and possible risks understood.

**Mt. Simon-Hinckley Aquifer:** The deepest of the three aquifers is the Mt. Simon-Hinckley. There are no geologic factors that would limit further use by Edina. However, Minnesota Statute 103G.271 Subd. 4a prohibits the issuance of permits to appropriate water from this aquifer in the Metro area unless there are no feasible alternative to this source. Two of Edina's 15 existing operational wells are located in the Mt. Simon – Hinckley aquifer, including Well No. 10 immediately north of the Gateway Study Area.

Existing and future demands for all of Edina have been reviewed in Edina's 2002 Water Distribution System Analysis, and Bloomington's 2000 Comprehensive Plan update.

#### **City of Edina Existing Water System Capacity**

Edina's well capacities range from 450 gallons per minute (GPM) to 2,000 GPM. The current system firm capacity, which includes the improvements proposed in the 2002 Water Distribution System Analysis, is 15,285 GPM (22.01 million gallons per day (MGD)), which is the system capacity minus the largest pump as if it were out of service. Existing total system capacity, which includes Edina's largest pump operating at capacity, will be assumed to be 17,285 GPM (24.89 MGD).

Well firm capacity should meet or exceed maximum day demands. Historical water usage measurements for Edina, last taken in 2001, has indicated a maximum day demand of approximately 15,278 GPM (22.00 MGD), which is approximately equal to Edina's firm capacity of 15,285 GPM (22.01 MGD). The City is able to handle increased water capacity demands by utilizing water within its five storage reservoirs.

#### **City of Bloomington Existing Water System Capacity**

Bloomington obtains water from both groundwater wells and through surface water that is purchased from the City of Minneapolis. Bloomington has a current firm capacity of 30,555 GPD (44 MGD). Due to the cycling of pumps being utilized at the City's water plant, where one pump is always out of service, the City has an existing total system capacity equal to the firm capacity of 30,555 GPD (44 MGD).

Historical water usage for Bloomington indicates a maximum day demand of approximately 27,500 GPD (39.6 MGD), which is approximately 90% of the firm and total system capacity.

### Gateway Study Area Analysis

For the Gateway Study Area, a basic water system analysis utilizing average design values was performed to determine current water system demands. A design value of 95 gallons per capita per day (gpcd) with 3 people/unit for residential units (285 gallons per unit per day) and 800 gallons for every 10,000 gsf of building area was used. A peaking factor of 3.0 has been developed based on historical maximum day and average day water use ratios as shown in Edina's 2002 Water Distribution System Analysis and Bloomington's 2000 Comprehensive Plan Update. The existing Gateway Study Area water system demands are shown below in **Table 13-1**.

**Table 13-1. Existing Gateway Study Area Water Usage and Maximum Day Water Usage**

Service City	Development Type	Gross Square Footage	Number of Units	Avg. Day Water Demand (MGD)	Peak Day Water Demand (MGD)
Bloomington	Residential	31,000	36	0.010	0.031
	Commercial / Office / Industrial	796,072	-	0.064	0.191
	<b>TOTAL</b>	<b>827,072</b>	<b>36</b>	<b>0.074</b>	<b>0.222</b>
Edina	Residential	-	-	-	-
	Commercial / Office / Industrial	1,076,928	-	0.086	0.258
	<b>TOTAL</b>	<b>1,076,928</b>	<b>-</b>	<b>0.086</b>	<b>0.258</b>

The existing water main within the Gateway Study Area consists of 8-inch and 12-inch cast iron and ductile iron pipe. The cast iron water main is generally more than 30 years old, and is in relatively good condition. The ductile iron water main is less than 15 years old, and is in good condition. There are a series of private water mains that service individual buildings

within the Gateway Study Area, mainly to the Seagate Technologies property, which is south of West 77<sup>th</sup> Street and east of Computer Avenue; the Pentagon Towers property, located south of West 77<sup>th</sup> Street and west of Computer Avenue; and the Pentagon Quads property, located north of West 77<sup>th</sup> Street and west of Parklawn Avenue. Since water mains serving these properties are private, neither Edina nor Bloomington has records regarding the age or condition of these water lines.

The water pressures within the Edina portion of the Study Area range from 80-100 pounds per square inch (psi), while the pressures within the Bloomington portion of the Study Area range from 67-70 psi. For a basis of comparison, The American Water Works Association recommends that water pressures should not drop below 35 psi for potable water systems.

The fire flows at fire hydrants within the Gateway Study Area were measured between 790 GPM and 3,500 GPM. For a basis of comparison, fire flows should not drop below 500 GPM. The existing water main is adequately sized to meet fire flow standards. In addition, the existing buildings have additional fire suppression measures that have been installed, including automatic sprinkler systems and pumps to increase the water pressure within individual buildings.

#### **Impacts of Development Scenarios 1 through 4**

For the purposes of this Final AUAR, it is assumed that the service areas as shown in **Figure 13-2** will remain the same, and any water main improvements, if necessary, would occur within the same location as the existing water main (i.e., no new water main alignments will be created). There is potential for areas that redevelop within the Bloomington service area to request to be served by Edina. If this occurs, additional analysis and watermain improvements will be needed.

#### **Impacts of Development Scenario 1**

Redevelopment within all of the Gateway Study Area will be connected to municipal water service in this scenario. The majority of redevelopment under Scenario 1 would consist of office and warehousing uses, with some existing residential uses remaining in-place. Historical water usage calculations used the same assumptions as the existing conditions, where a design value of 95 gallons per capita per day (gpcd) with 3 people/unit for residential units (285 gallons per unit per day) and 800 gallons for every 10,000 gsf of building area, with a peaking factor of 3.0. Future water demand for the Gateway Study Area under Scenario 1 is shown below in **Table 13-2**.

**Table 13-2. Future Water Demand for Scenario 1**

Service City	Development Type	Gross Square Footage	Number of Units	Avg. Day Water Demand (MGD)	Peak Day Water Demand (MGD)
<b>Bloomington</b>	Residential	31,000	36	0.010	0.031
	Commercial / Office / Industrial	1,736,200	-	0.139	0.417
	<b>TOTAL</b>	<b>1,767,200</b>	<b>36</b>	<b>0.149</b>	<b>0.447</b>
	<b>Net Increase</b>	<b>940,128</b>	<b>-</b>	<b>0.075</b>	<b>0.226</b>
<b>Edina</b>	Residential	-	-	0.000	0.000
	Commercial / Office / Industrial	1,121,400	-	0.090	0.269
	<b>TOTAL</b>	<b>1,121,400</b>	<b>-</b>	<b>0.090</b>	<b>0.269</b>
	<b>Net Increase</b>	<b>44,472</b>	<b>-</b>	<b>0.004</b>	<b>0.011</b>

For the Bloomington-serviced portion of the Gateway Study Area, full redevelopment under Scenario 1 would result in an increase in the peak day water demand of 0.226 MGD, bringing the total peak day water use within Bloomington to 39.826 MGD, which is still lower than the City’s firm and total water capacity of 44 MGD. For the Edina-serviced portion of the Gateway Study Area, full redevelopment under Scenario 1 would result in an increase in the peak day water demand of 0.011 MGD, bringing the total peak day water use within Edina to 22.011 MGD. This value exceeds Edina’s current firm capacity of 22.01 MGD, but is still below Edina’s total capacity of 24.89 MGD.

**Impacts of Development Scenario 2**

The redevelopment under Scenario 2 is modified from Scenario 1 to include less office and commercial space and more mixed-use and residential land uses. The same water usage design values that were used for Scenario 1 were utilized to determine the water demands for redevelopment under Scenario 2. **Table 13-3** shows the projected future water demands anticipated for Scenario 2.

**Table 13-3. Future Water Demand for Scenario 2**

Service City	Development Type	Gross Square Footage	Number of Units	Avg. Day Water Demand (MGD)	Peak Day Water Demand (MGD)
<b>Bloomington</b>	Residential	826,000	848	0.242	0.725
	Commercial / Office / Industrial	2,268,600	-	0.181	0.544
	<b>TOTAL</b>	<b>3,094,600</b>	<b>848</b>	<b>0.423</b>	<b>1.270</b>
	<b>Net Increase</b>	<b>2,267,528</b>	<b>812</b>	<b>0.349</b>	<b>1.048</b>
<b>Edina</b>	Residential	88,000	80	0.023	0.068
	Commercial / Office / Industrial	1,064,000	-	0.085	0.255
	<b>TOTAL</b>	<b>1,152,000</b>	<b>80</b>	<b>0.108</b>	<b>0.324</b>
	<b>Net Increase</b>	<b>75,072</b>	<b>80</b>	<b>0.022</b>	<b>0.065</b>

For the Bloomington-serviced portion of the Gateway Study Area, full redevelopment under Scenario 2 would result in an increase in the peak day water demand of 1.048 MGD, bringing the total peak day water use within Bloomington to 40.648 MGD, which is still lower than the City’s firm and total water capacity of 44 MGD. For the Edina-serviced portion of the Gateway Study Area, full redevelopment under Scenario 2 would result in an increase in the peak day water demand of 0.065 MGD, bringing the total peak day water use within Edina to 22.065 MGD. This value exceeds Edina’s current firm capacity of 22.01 MGD, but is still below the City’s total capacity of 24.89 MGD.

**Impacts of Development Scenario 3**

Redevelopment densities in Scenario 3 maximize the office and commercial land uses within the Gateway Study Area, with existing residential uses remaining in-place. The same water usage design values that were used for Scenario 1 were utilized to determine the water demands for redevelopment under Scenario 3. **Table 13-4** shows the projected future water demands anticipated for Scenario 3.

**Table 13-4. Future Water Demand for Scenario 3**

Service City	Development Type	Gross Square Footage	Number of Units	Avg. Day Water Demand (MGD)	Peak Day Water Demand (MGD)
<b>Bloomington</b>	Residential	31,000	36	0.010	0.031
	Commercial / Office / Industrial	3,174,760	-	0.254	0.762
	<b>TOTAL</b>	<b>3,205,760</b>	<b>36</b>	<b>0.264</b>	<b>0.793</b>
	<b>Net Increase</b>	<b>2,378,688</b>	<b>-</b>	<b>0.190</b>	<b>0.571</b>
<b>Edina</b>	Residential	-	-	0.000	0.000
	Commercial / Office / Industrial	1,397,840	-	0.112	0.335
	<b>TOTAL</b>	<b>1,397,840</b>	<b>-</b>	<b>0.112</b>	<b>0.335</b>
	<b>Net Increase</b>	<b>320,912</b>	<b>-</b>	<b>0.026</b>	<b>0.077</b>

For the Bloomington-serviced portion of the Gateway Study Area, full redevelopment under Scenario 3 would result in an increase in the peak day water demand of 0.571 MGD, bringing the total peak day water use within Bloomington to 40.171 MGD, which is still lower than the City’s firm and total water capacity of 44 MGD. For the Edina-serviced portion of the Gateway Study Area, full redevelopment under Scenario 3 would result in an increase in the peak day water demand of 0.077 MGD, bringing the total peak day water use within Edina to 22.077 MGD. This value exceeds Edina’s current firm capacity of 22.01 MGD, but is still below the City’s total capacity of 24.89 MGD.

**Impacts of Development Scenario 4**

Redevelopment densities in Scenario 4 maximize the residential development within the Gateway Study Area, with some office and commercial land uses remaining within portions of the Gateway Study Area. The same water usage design values that were used for Scenario 1 were utilized to determine the water demands for redevelopment under Scenario 4. **Table 13-5** shows the projected future water demands anticipated for Scenario 4.

**Table 13-5. Future Water Demand for Scenario 4**

Service City	Development Type	Gross Square Footage	Number of Units	Avg. Day Water Demand (MGD)	Peak Day Water Demand (MGD)
<b>Bloomington</b>	Residential	1,471,000	1,436	0.409	1.228
	Commercial / Office / Industrial	1,340,600	-	0.107	0.322
	<b>TOTAL</b>	<b>2,811,600</b>	<b>1,436</b>	<b>0.517</b>	<b>1.550</b>
	<b>Net Increase</b>	<b>1,984,528</b>	<b>1,400</b>	<b>0.443</b>	<b>1.328</b>
<b>Edina</b>	Residential	110,000	100	0.029	0.086
	Commercial / Office / Industrial	1,064,000	-	0.085	0.255
	<b>TOTAL</b>	<b>1,174,000</b>	<b>100</b>	<b>0.114</b>	<b>0.341</b>
	<b>Net Increase</b>	<b>97,072</b>	<b>100</b>	<b>0.027</b>	<b>0.082</b>

For the Bloomington-serviced portion of the Gateway Study Area, full redevelopment under Scenario 4 would result in an increase in the peak day water demand of 1.328 MGD, bringing the total peak day water use within Bloomington to 40.928 MGD, which is still lower than the City’s firm and total water capacity of 44 MGD. For the Edina-serviced portion of the Gateway Study Area, full redevelopment under Scenario 4 would result in an increase in the peak day water demand of 0.082 MGD, bringing the total peak day water use within Edina to 22.082 MGD. This value exceeds Edina’s current firm capacity of 22.01 MGD, but is still below the City’s total capacity of 24.89 MGD.

**Common Development Impacts (all Scenarios)**

Since the Gateway Study Area is fully served by existing water mains, and the existing water pressures and fire flows are above minimum service levels, infrastructure upgrades to the existing system can be limited to repair and replacement of existing water mains, based mainly on their age and condition. Regardless of the type of redevelopment, as long as existing or new water mains remain in their current location and at the same size, the overall service pressures and fire flow values will not change. However, individual redevelopment may require the installation of service pumps to serve multi-story buildings and to provide adequate fire protection. The size and type of pumps will vary based on individual building characteristics, and should meet the existing local building and fire protection codes.

Under all scenarios, redevelopment within the portion of the Gateway Study Area that falls within Edina's water service area increases the peak day water demand above the City's existing firm capacity, based on the 2002 Water Distribution System Analysis. However, Edina has performed some upgrades to its existing wells and pumping systems that have likely resulted in increased water system firm capacity that may be adequate to support the increase in peak day water demand. However, at the time of this Final AUAR, an updated comprehensive water system analysis had not been completed for all of Edina.

In addition, Edina has expressed some interest in looping its water main system along West 77<sup>th</sup> Street to TH 100, and bringing the portions of the Gateway Study Area currently receiving water service from Bloomington into the Edina water system. This potential improvement would further require that an updated comprehensive water system analysis be performed, to ensure that Edina can handle the increase in water demand. While the Gateway Study Area is in a lower area of Edina, which is subject to higher water pressures and fire flows, the addition of water demand in this section of the City would likely reduce water pressure and fire flows within a different portion of the City. Further discussions between Edina and Bloomington will need to occur to determine what, if any, water system improvements are needed within the Gateway Study Area.

### **Water Use Mitigation Measures**

- Edina will work with Bloomington to determine the needs for water system capacity improvements, water main upgrades, and future service to the Gateway Study Area.
- In conjunction with their Comprehensive Plan update, Edina will complete an update to the 2002 Water Distribution System Analysis for the entire city to determine what current and future water system improvements may be necessary to continue to serve the City's water needs and maintain a water system firm capacity above the maximum daily water use within the City.
- As redevelopment occurs, Edina will complete an analysis of the water mains within the Gateway Study Area to determine if performing water main replacement is necessary and if it should occur in conjunction with other potential infrastructure improvements, such as sanitary sewer, storm sewer, and transportation improvements.
- Any abandoned wells found within the Gateway Study Area will be sealed in accordance with Minnesota Department of Health guidelines. This will be the responsibility of the project proposer.
- In accordance with Edina's Wellhead Protection Plan, continued protection of the existing Drinking Water Supply Management Areas located within the Gateway Study Area as shown in **Figure 13-1** will be required for redevelopment projects.
- There is potential for areas that redevelop within the Bloomington service area to request to be served by Edina. If this occurs, additional analysis and water main improvements will need to be completed by Edina in coordination with Bloomington.

- Individual redevelopment may require the installation of service pumps to serve multi-story buildings and to provide adequate fire protection. The size and type of pumps will vary based on individual building characteristics, should meet the existing local building and fire protection codes, and will be the responsibility of the developer.

- 14. WATER-RELATED LAND USE MANAGEMENT DISTRICTS. Does any part of the project involve a shoreland zoning district, a delineated 100-year flood plain, or a state or federally designated wild or scenic river land use district?  Yes  No**  
**If yes, identify the district and discuss project compatibility with district land use restrictions.**

The FEMA Flood Insurance Rate Map does not show any 100-year floodplain within the Gateway Study Area. The Study Area is partially within Zone X, which indicates that some areas could be inundated in a 500-year event.

- 15. WATER SURFACE USE. Will the project change the number or type of watercraft on any water body?**  
 Yes  No  
**If yes, indicate the current and projected watercraft usage and discuss any potential overcrowding or conflicts with other uses.**

- 16. EROSION AND SEDIMENTATION. Give the acreage to be graded or excavated and the cubic yards of soil to be moved: NA acres; NA cubic yards**  
**Describe any steep slopes or highly erodible soils and identify them on the site map. Describe any erosion and sedimentation control measures to be used during and after project construction**

**Existing Conditions**

A detailed list of the soils present in the Study Area is provided in **Item 19**. The Study Area can be described as generally flat to gently sloping within the Gateway Study Area. Of the soils within in the area, there are none identified as highly erodible (HEL) or potentially highly erodible (PHEL) (see **Figure 16-1**).

**Impacts of Development Scenarios 1 through 4**

In all redevelopment scenarios, much of the Gateway Study Area would be graded in phases to facilitate the demolition and construction of individual buildings and associated infrastructure such as parking lots, roadways, and trails. It is anticipated that minor site grading will be needed to accommodate building layouts and storm water drainage from the area. Grading and earthwork to upgrade public utilities may also be needed.

For the Pentagon Towers and Pentagon Quad parcels that are currently proposed for redevelopment by the Developer, construction is anticipated to begin in 2008 and last for a minimum of five years into 2013 and possibly beyond, depending on commercial office space and residential housing demand.

A Storm Water Pollution Prevention Plan (SWPPP) in conformance with the NPDES regulations will be needed for any redevelopment within the Gateway Study Area. Review of the SWPPP for any project disturbing more than one acre within the Study Area is required by Edina's Building Department. Additionally, any project that alters or disturbs more than 100 cubic yards of material is required to obtain a permit and meet regulations of the Nine Mile Creek Watershed District. These regulations require an erosion control plan to be submitted to the Watershed District for review and approval.

#### **Erosion and Sedimentation Mitigation Plan**

- The SWPPP, including temporary and permanent seeding and staging plans, will be required to be submitted by each project proposer and reviewed by Edina.
- The project proposer will need to develop an erosion control plan and submit this plan to the Nine Mile Creek Watershed District for review and approval.
- During construction, the project proposer and their contractor will implement Best Management Practices as needed to prevent erosion and sedimentation of downstream water resources.
- Edina will develop a SWPPP and obtain an NPDES permit for the construction of any public infrastructure improvements (sanitary sewer, storm sewer, water main) that disturb one acre of land or more.
- Edina will conduct erosion control inspections during construction.

#### **17. WATER QUALITY – SURFACE WATER RUNOFF**

**a. Compare the quantity and quality of site runoff before and after the project. Describe permanent controls to manage or treat runoff. Describe any storm water pollution prevention plans.**

**b. Identify routes and receiving water bodies for runoff from the site; include major downstream water bodies as well as the immediate receiving waters. Estimate impact runoff on the quality of receiving waters.**

*For purposes of the storm water analysis in this AUAR, the responses to Items 17a and 17b are included together in this section.*

#### **Existing Conditions**

Based on the subwatersheds delineated in the Edina 2003 Comprehensive Water Resources Management Plan, the Gateway Study Area is comprised of two major subwatersheds – the South Pond subwatershed and the Nine Mile Creek subwatershed. **Figure 17-1** shows Edina's existing storm water infrastructure as well as subwatershed boundaries within the Gateway Study Area.

The South Pond subwatershed consists of 65 acres that drain to a large pond located along the southern border of the Gateway Study Area that is referred to as South Pond or SP\_1. This pond

is within the Cities of Edina and Bloomington. This basin is identified as pond SP\_1 in the Comprehensive Water Resources Management Plan. Rate control is provided at this pond by the use of an outlet control structure that discharges to the existing storm sewer system under Viking Drive. This storm sewer conveys runoff under TH 100, and then discharges to Nine Mile Creek. Based on data in the Comprehensive Water Resources Management Plan, the SP\_1 pond does not have adequate dead-pool storage to meet the MPCA recommended permanent pool volume for treatment of storm water runoff. The Comprehensive Water Resources Management Plan recommends this basin be expanded to provide an additional 19.6 acre-feet of dead-pool storage. The Cities of Edina and Bloomington have identified the need to expand the SP\_1 pond to provide additional water quality treatment for the area.

The Nine Mile Creek subwatershed consists of 70 acres that drain to Nine Mile Creek. There are several small basins located upstream of the Gateway Study Area that provide some rate control and storm water treatment. These basins are located adjacent to the Gateway Study Area on the Fred Richards Golf Course. Based on data in the Comprehensive Water Resources Management Plan, the basins do not have adequate dead-pool storage to meet the MPCA recommended permanent pool volume for treatment of storm water runoff. The Comprehensive Water Resources Management Plan recommends the golf course basins be expanded to increase phosphorus removal efficiency. The recommendation for the east basin, basin NMS\_76, is an additional 2.5 acre-feet of dead-pool storage. There are two other ponds for which lowering the pond bottom was recommended, but the additional dead-pool volume is not quantified. These basins are identified as NMS\_72 and NMS\_74.

The capacity of the existing storm sewer system within the Gateway Study Area appears to be near capacity under current design standards. The Comprehensive Water Resources Management Plan identifies several manholes that are surcharged during a 10-year storm event as shown on **Figure 17-1**. Current design standards dictate that storm sewer pipe be sized to convey the peak runoff rate from a 10-year storm under gravity flow (i.e. without surcharging). Edina staff has indicated two buildings, 4701 W 77<sup>th</sup> St W and 7799 France Ave S, have experienced flooding in the past. This may also be an indicator that the storm sewer is near capacity, although the flooding may have been caused by outside factors, such as clogged inlet grates.

As stated, storm water from the Study Area eventually discharges to Nine Mile Creek. Nine Mile Creek is listed as an impaired water for turbidity, chloride, and biota (fish habitat). Information from the MPCA indicates that a Total Maximum Daily Load (TMDL) study for turbidity is currently underway with completion anticipated in 2009. The Nine Mile Creek Watershed District has requested that the Creek be delisted as impaired for biota based on their monitoring information and this information is being reviewed by the MPCA. No studies were underway for the chloride impairment as of June 2007.

Through the MPCA's NPDES permit for Municipal Separate Storm Sewer Systems (MS4's), Edina is a designated MS4 community and is developing a Nondegradation Plan to determine if there have been impacts from total suspended solids, total phosphorous, and volume since 1988. Edina is required to complete the Nondegradation Plan by January 2008. If there have been impacts in the City, Edina will need to develop a mitigation plan for reducing these impacts.

### **Impacts of Development Scenarios 1 through 4**

Four redevelopment scenarios have been analyzed in the Gateway Study Area. Proposed land uses include differing levels of residential, commercial, office, light industrial, and hotel and are shown in **Figures 6-1, 6-2, 6-3 and 6-4**. A review of the cover types for the existing conditions indicates that the amount of impervious surface throughout the Gateway Study Area is approximately 80% of the total area. For purposes of water quality and water quantity modeling, the impervious surface is considered to be directly connected to the storm water conveyance system. This is consistent with the assumptions made during preparation of the water quality modeling for the Comprehensive Water Resources Management Plan.

As a part of this analysis, it was estimated that redevelopment will decrease the amount of impervious surface within the Study Area and use Low Impact Development (LID) techniques. These LID techniques are expected to reduce the amount of impervious area directly connected to the storm sewer system by 5 – 10 % depending on the land use for each property. It is estimated that LID techniques will be able to reduce the amount of directly connected impervious surface to 75% in all areas that are redeveloped. In areas where the land use is changed to commercial, residential, or a mixture thereof, it is assumed that this number will be further reduced to 70% as these areas will require more landscaping and amenities that can be incorporated into the redevelopment plan. The Developer of the Pentagon Towers and Pentagon Quads sites outlined in Scenario 2 is proposing to utilize LID techniques within their parcels. **Table 17-1** provides a summary of the impervious areas assumed to be directly connected for the existing condition and each of the scenarios.

**Table 17-1. Directly Connected Impervious Surface (Assumed Percentage of Gateway Study Area)**

<i>Scenario</i>	<i>% Impervious Surface</i>
Existing Conditions	80%
Scenario 1	75%
Scenario 2	74%
Scenario 3	75%
Scenario 4	73%

### **Water Quantity Impacts**

The Gateway Study Area consists of approximately 80% impervious surfaces under existing conditions. It is anticipated that all four of the scenarios will result in a slight reduction in impervious surface. **Table 17-2** provides a summary of a generalized analysis of the volume of storm water discharge under the existing conditions and each of the redevelopment scenarios.

**Table 17-2. Existing and proposed runoff volumes (acre-feet)**

	<b>Rainfall Event</b>	<b>Existing Conditions</b>	<b>Scenario 1</b>	<b>Scenario 2</b>	<b>Scenario 3</b>	<b>Scenario 4</b>
South Pond Subwatershed	100-year, 24-hour	26.3	25.7	25.1	25.7	25.1
Nine Mile Subwatershed	100-year, 24-hour	28.4	27.7	27.1	27.7	27.1

This analysis is not based on a specific site plan. General assumptions regarding the land use and reductions in impervious surface were used. This information is intended for planning purposes only.

Since all four of the scenarios are anticipated to result in a slight reduction in impervious surface, runoff rates and volumes of surface runoff exiting the Study Area will be reduced. Based on this, it has been determined that the proposed redevelopment scenarios will not adversely affect the 100-year high water elevation of the downstream resources and should not increase downstream flooding for the 100-year event. However, if the Study Area redevelops with the same or additional impervious surface, downstream impacts are anticipated to occur, as they do in the existing conditions. Redevelopment within the Gateway Study Area will be required to limit peak runoff rates and reduce the runoff volume so as not to negatively impact the existing storm sewer system. If impervious surfaces are reduced as part of redevelopment, it is anticipated that the redevelopment will require only minimal changes, if any, to the existing storm sewer pipe network.

**Water Quality Impacts**

In the existing conditions, storm water is discharged either into existing ponds or directly to Nine Mile Creek. The reductions in runoff rate and volume anticipated as a result of the use of LID techniques and reduced impervious surface will result in less pollutant loading to these systems. **Tables 17-3 and 17-4** provide a summary of a generalized analysis of the storm water quality for the existing conditions and each scenario.

**Table 17-3. Total Suspended Solids Loading (lbs per year)**

	<b>Existing Conditions</b>	<b>Scenario 1</b>	<b>Scenario 2</b>	<b>Scenario 3</b>	<b>Scenario 4</b>
South Pond Subwatershed	4,264	3,997	3,943	3,997	3,890
Nine Mile Subwatershed	4,591	4,304	4,247	4,304	4,189

This analysis is not based on a specific site plan. General assumptions regarding the land use and reductions in impervious surface were used. This information is intended for planning purposes only.

**Table 17-4. Total Phosphorus Loading (lbs per year)**

	<b>Existing Conditions</b>	<b>Scenario 1</b>	<b>Scenario 2</b>	<b>Scenario 3</b>	<b>Scenario 4</b>
South Pond Subwatershed	20	19	19	19	18
Nine Mile Subwatershed	22	20	20	20	20

This analysis is not based on a specific site plan. General assumptions regarding the land use and reductions in impervious surface were used. This information is intended for planning purposes only.

Based on this analysis, none of the scenarios are anticipated to have a negative impact to on-site or downstream water bodies when reduced impervious and LID techniques are used. However, if redevelopment does not reduce impervious surfaces, the total suspended solids and phosphorus loadings are anticipated to be similar to the existing conditions or may increase. Increasing these loadings will not be allowed as part of redevelopment within the Study Area. While LID techniques are not mandated, the presence of a high ground water table may limit the effectiveness and feasibility of storm water treatment ponds with permanent pool volume. Redevelopment in the area will be required to reduce downstream pollutant loadings through reduced impervious surfaces and/or use of alternative storm water treatment methods such as LID.

Simply re-developing the Study Area with the same amount of impervious surface and not providing any alternative storm water management techniques will not meet the requirements of the Nine Mile Creek Watershed District.

**Water Quality – Surface Water Runoff Mitigation Plan**

- Redevelopment projects will be required to be designed to meet the policies of the most current Edina Comprehensive Storm Water Management Plan.
- Redevelopment projects will be required to be designed to meet the policies of the most current Nine Mile Creek Watershed District requirements.
- Redevelopment within the Gateway Study Area will be required to limit peak runoff rates to at least existing conditions and reduce the runoff volume so as not to negatively impact the existing storm sewer system.
- Redevelopment needs to reduce the amount of impervious surface within the project limits or develop a site specific storm water management plan that shows that the project will not impact downstream pollutant or volume loading.
- If warranted by Edina’s Nondegradation Plan (completion anticipated in January 2008), project proposer(s) will need to include storm water management strategies that reduce the total suspended solid loadings, total phosphorous pollutant loadings, and storm water runoff volumes from the Gateway Study Area.

- Any redevelopment project that disturbs more than one acre of land is required to develop a Storm Water Pollution Prevention Plan and obtain an NPDES permit from the MPCA.
- Edina and project proposer(s) will investigate the expansion of the existing ponding areas within the Fred Richards Golf Course to provide additional storage and treatment as outlined in Edina's Water Resource Management Plan.
- The Cities of Edina and Bloomington will petition the Nine Mile Creek Watershed District to expand the SP\_1 pond to provide additional storm water treatment for the area.
- As TMDL studies are completed for Nine Mile Creek, the results of these studies will be reviewed by Edina. Redevelopment in the Study Area will be required to meet any mitigation and pollutant load reductions that may be outlined within the TMDL studies.
- The project proposer will review and determine which Low Impact Development (LID) practices are feasible to be used for each parcel. Edina will review the LID techniques and encourage their use to the greatest extent possible.
- A maintenance plan is required to be reviewed and approved by the Nine Mile Creek Watershed District for privately constructed and maintained storm water management facilities.

**18. WATER QUALITY - WASTEWATER**

**a. Describe sources, composition and quantities of all sanitary, municipal and industrial wastewater produced or treated at the site.**

**b. Describe waste treatment methods or pollution prevention efforts and give estimates of composition after treatment. Identify receiving waters, including major downstream water bodies, and estimate the discharge impact on the quality of receiving waters. If the project involves on-site sewage systems, discuss the suitability of site conditions for such systems.**

**c. If wastes will be discharged into a publicly owned treatment facility, identify the facility, describe any pretreatment provisions and discuss the facility's ability to handle the volume and composition of wastes, identifying any improvements necessary.**

**d. If the project requires disposal of liquid animal manure, describe disposal technique and location and discuss capacity to handle the volume and composition of manure. Identify any improvements necessary. Describe any required setbacks for land disposal systems.**

*For purposes of the wastewater analysis in this AUAR, the responses to Items 18a-d are included together in this section.*

**Existing Conditions**

According to Edina's 2020 Comprehensive Plan, the estimated average wastewater flow for the entire City in 2007 is 2.75 billion gallons per year, or roughly 7.5 million gallons per day (gpd), with a peak flow of 16.5 million gpd.

Since the wastewater generated from Edina is primarily from residential units, the wastewater characteristics are assumed to be of typical domestic strength. **Table 18-1** is a summary of the estimated wastewater characteristics for Edina.

**Table 18-1. Estimated Wastewater Characteristics and Total Average Daily Wastewater Loading for Edina**

Parameter	Estimated Wastewater Characteristics and Average Daily Loading	
	mg/l	lbs/day
Biochemical Oxygen Demand	220	13,755
Total Suspended Solids	220	13,755
Ammonia –Nitrogen	25	1,563
Total Phosphorous	8	499

Wastewater generated from Edina is collected by a series of lift stations, laterals, and trunk sewer mains, and is then directed to a series of MCES sanitary sewer interceptors.

The Gateway Study Area is currently served by existing sanitary sewer located within public right-of-way. Sanitary sewer flow within the Gateway Study Area is divided into three sanitary service areas. **Figure 18-1** shows the existing layout of sanitary sewer and the sanitary sewer service areas within and adjacent to the Gateway Study Area.

### **Sanitary Service Area A**

The western portion of the Gateway Study Area (west of Parklawn Avenue) is noted as Sanitary Service Area A on **Figure 18-1**. It is serviced by a 9-inch lateral sanitary sewer line that flows south into Bloomington along Computer Avenue. At Viking Drive, the sanitary sewer changes from a 9-inch lateral sewer owned by Edina to the 18-inch MCES BN-499 Interceptor. This interceptor was constructed in 1997 to replace a 10-inch sanitary sewer line between the Bloomington/Edina border and I-494. The increase in size was intended to provide for additional sanitary sewer capacity to areas of Bloomington and Edina bounded by TH 100, France Avenue, 77<sup>th</sup> Street West, and I-494. The MCES BN-499 Interceptor connects to an MCES lift station southeast of TH 100 and I-494. The lift station pumps through a 12-inch force main south to West 84<sup>th</sup> Street, where a gravity sewer collects flow and directs it to the Seneca Wastewater Treatment Plant (WWTP) in Eagan. The Seneca WWTP has a design capacity of 39 MGD and provides primary and secondary treatment. Disposal of treated wastewater from the Seneca WWTP is discharged into the Minnesota River.

### **Sanitary Service Area B**

The area east of Parklawn Avenue, split mainly by 76<sup>th</sup> Street West, is noted as Sanitary Service Area B on **Figure 18-1**. This area is serviced by 12-inch through 24-inch trunk sanitary sewer that flows north to Edina Lift Station No. 6, located near the intersection of 72<sup>nd</sup> Street West and Oaklawn Avenue. This lift station is being rehabilitated by Edina in 2007 to increase the pump efficiency and restore the design capacity of the lift station, which serves approximately 50% of Edina's sanitary sewer service area. This lift station pumps through a 9-inch force main to the east and discharges into the MCES Richfield-491 Interceptor Sewer. This interceptor then directs flow to the Metropolitan WWTP in St. Paul. The Metro WWTP has a design capacity of 251 MGD and provides primary and secondary treatment. Disposal of treated wastewater from the Metro WWTP is discharged into the Mississippi River.

### **Sanitary Service Area C**

The two remaining parcels immediately adjacent to France Avenue within the Gateway Study Area are noted as Sanitary Service Area C on **Figure 18-1**. This area is serviced by an 8-inch sanitary sewer that flows east across France Avenue to Edina Lift Station No. 2, located immediately east of the Gateway Study Area on the east side of France Avenue. Like Sanitary Service Area B, the flow from this lift station pumped through a 10-inch force main to the north and east and discharges into the MCES Richfield-491 Interceptor Sewer, where it eventually flows to the Metro WWTP.

**Current Flow**

The current land use in the Gateway Study Area consists of commercial office space, warehousing, light industrial land uses, and recently-approved residential development, in accordance with Edina’s existing 2020 Comprehensive Plan. Based on the existing building areas and total square footages, a total wastewater generation was estimated using a MCES equivalent value of 2,400 gsf of finished building area per individual SAC unit. One SAC unit is equivalent to 274 gallons of wastewater per day. The MCES peaking factors are also utilized to account for peak wastewater flows, which range from 3.8 to 4.0. **Table 18-2** below summarizes the total building areas and estimated wastewater flows per land use type for the existing conditions.

**Table 18-2. Estimated Average Day and Peak Hour Wastewater Flow for Existing Conditions**

Type	Service Area	Gross Square Footage (Non-Res.)	Equivalent Residential Units	Total Average Daily Wastewater Flow (MGD)	Peak Hour Wastewater Flow (MGD)
Commercial Office & Warehousing	A	795,000	331	0.092	0.388
	B	588,000	245	0.067	0.268
	C	489,000	204	0.056	0.224
Onsite Residential	A	-	36	0.010	0.040
	B	-	-	-	-
	C	-	-	-	-
<b>Total</b>	-	<b>1,872,000</b>	<b>816</b>	<b>0.225</b>	<b>0.920</b>

**Table 18-3** summarizes the estimated wastewater characteristics and loading for the wastewater under the existing development conditions within the Gateway Study Area.

**Table 18-3. Estimated Wastewater Characteristics and Total Average Daily Wastewater Loading for Existing Conditions**

Parameter	WWTP	Estimated Wastewater Characteristics and Average Day Loading	
		mg/l	lbs/day
Biochemical Oxygen Demand	Metro	220	217
	Seneca		188
Total Suspended Solids	Metro	220	217
	Seneca		188
Ammonia - Nitrogen	Metro	25	25
	Seneca		21
Total Phosphorous	Metro	8	8
	Seneca		7

Under the existing conditions, approximately 47 percent (0.428 MGD) of the peak flow generated from the Gateway Study Area is directed south through the MCES BN-499 Interceptor sewer (Sanitary Service Area A). Approximately 29 percent (0.268 MGD) of the peak flow generated is directed north along Parklawn Avenue (Sanitary Service Area B). The remaining 24 percent (0.224 MGD) of the peak flow discharges across France Avenue to an existing lift station (Sanitary Service Area C). See **Figure 18-1** for sanitary sewer service areas and locations.

### **Existing Municipal Sewer System**

The Gateway Study Area consists of three separate sanitary sewer drainage areas (See **Figure 18-1**). Sanitary Service Area A encompasses the majority of the Gateway Study Area, and includes portions of Bloomington. The existing MCES BN-499 Interceptor located along Computer Avenue to Lift Station No. 10 in Bloomington is in good condition and has not exhibited any previous capacity issues since being constructed in 1997. Lift Station No. 10 is owned by the MCES and is operated and maintained by Bloomington.

Data obtained for Lift Station No. 10 indicates that it is operating two 700 gallon per minute pumps at a firm capacity of 0.874 MGD peak flow, which is approximately 87% of the lift station's total firm capacity of 1.008 MGD. Firm capacity is the capacity of operating one pump at a time. Downstream of this lift station is a 15-inch MCES interceptor sewer that flows east along 84<sup>th</sup> Street West for approximately 2,000 feet. Based on data provided by Bloomington, this interceptor is flowing at or above capacity during existing peak flow periods. The MCES is currently in the process of verifying and evaluating options for relieving this situation through sanitary sewer upsizing or regulation of lift station pumping cycles. Downstream of this sewer, the interceptor size increases to 21-inches, and is adequately sized to handle the existing flows.

The sanitary sewer system in Sanitary Service Area B flows north along Parklawn Avenue into an Edina trunk sanitary sewer along Oaklawn Avenue, where it is directed to Edina Lift Station No. 6. Edina is rehabilitating this lift station by replacing the existing pumps in order to increase the pumping efficiency and maintain the design capacity of the lift station. There are no evident capacity issues at the lift station or the sanitary sewers flowing to or from this lift station. This also holds true for the Richfield-491 Interceptor under the existing conditions.

The sanitary sewer system in Sanitary Service Area C flows east across France Avenue into Edina Lift Station No. 22. Edina plans on rehabilitating this lift station in 2008 to replace the existing pumps and increase the lift station pumping efficiency. There are no known capacity issues with this lift station or the sanitary sewer downstream of the lift station. This also holds true for the Richfield-491 Interceptor under the existing conditions.

### **Impacts of Development Scenarios**

For the purposes of this AUAR, it is assumed that the sanitary sewer system in each of the service areas (A, B, and C) will continue to perform as they do currently, and any improvements will include replacement or modifications in the same locations (i.e., no new sanitary sewer alignments will be created). For areas outside the Gateway Study Area that contribute flow to

the individual sanitary service areas, existing land use data, including existing building square footage, was utilized to determine the existing development density and sanitary sewer flows. These flows were verified utilizing measured flow values provided by Edina and Bloomington.

As part of the analysis in this AUAR for cumulative impacts, there are no other known redevelopments occurring within Sanitary Sewer Service Area A shown on **Figure 18-1** that are outside of the Gateway Study Area that would impact the MCES BN-499 Interceptor and MCES Lift Station No. 10 immediately downstream of the Gateway Study Area. Similarly, there are no other known redevelopments occurring within Sanitary Sewer Service B shown on **Figure 18-1** that are outside of the Gateway Study Area that would impact Edina Lift Station No. 6, Edina trunk sanitary sewer, or the MCES Richfield-491 Interceptor. Sanitary Sewer Service Area C is fully within the Gateway Study Area and therefore all impacts within this service area have been analyzed in the AUAR.

**Impacts of Development Scenario 1**

The majority of redevelopment under Scenario 1 would consist of commercial office space or warehousing, with some existing residential development, which is consistent with Edina’s Comprehensive Plan. As was the case for the existing sanitary flow conditions, flows for commercial and industrial property, were calculated based on an equivalent number of residential units utilizing the MCES estimate of 2,400 gsf of finished building area per individual SAC unit. One SAC unit is equivalent to 274 gallons of wastewater per day. For all residential units, an average daily wastewater flow of 274 gpd per unit was used. **Table 18-4** below summarizes the number of units under this scenario and the wastewater generated. Peaking factors recommended by the MCES based on average daily flows vary from 3.8 to 4.0 are used to determine the peak hour flow. Future wastewater flow for the Gateway Study Area under Scenario 1 is shown below in **Table 18-4**. **Table 18-5** summarizes the estimated wastewater characteristics and loading for the wastewater that will be generated under Scenario 1.

**Table 18-4. Estimated Average Day and Peak Hour Wastewater Flow from Scenario 1**

Type	Service Area	Gross Square Footage (Non-Res.)	Equivalent Residential Units	Total Average Daily Wastewater Flow (MGD)	Peak Hour Wastewater Flow (MGD)
Commercial Office & Warehousing	A	1,736,000	723	0.198	0.752
	B	602,000	251	0.069	0.269
	C	519,000	216	0.059	0.236
Onsite Residential	A		36	0.010	0.038
	B		-	-	
	C		-	-	
<b>Total</b>	-	<b>2,857,000</b>	<b>1,226</b>	<b>0.336</b>	<b>1.296</b>

**Table 18-5. Estimated Wastewater Characteristics and Total Average Daily Wastewater Loading from Scenario 1**

Parameter	WWTP	Estimated Wastewater Characteristics and Average Day Loading		Increase Over Existing Loads
		mg/l	lbs/day	lbs/day
Biochemical Oxygen Demand	Metro	220	267	51
	Seneca		419	230
Total Suspended Solids	Metro	220	267	51
	Seneca		419	230
Ammonia - Nitrogen	Metro	25	31	6
	Seneca		48	27
Total Phosphorous	Metro	8	10	2
	Seneca		15	8

Under this scenario approximately 61 percent (0.790 MGD) of the peak flow generated from the Gateway Study Area will be diverted south through the MCES BN-499 Interceptor sewer (Sanitary Service Area A). Approximately 21 percent (0.269 MGD) of the peak flow generated will be directed along Parklawn Avenue to Lift Station No. 6 (Sanitary Service Area B). The remaining 18 percent (0.236 MGD) of the peak flow discharges across France Avenue to Lift Station No. 22 (Sanitary Service Area C).

**Table 18-6** provides a breakdown of the sanitary sewer capacity analysis for each sanitary service area under Scenario 1. Based on this analysis, it is evident that potential redevelopment that occurs within Sanitary Service Area A may lead to downstream sanitary sewer system capacity issues, mainly at the MCES Bloomington Lift Station No. 10, and will warrant the upsizing of the 9-inch sanitary sewer along Computer Avenue to a 12-inch sanitary sewer. The threshold sanitary sewer flow that can be added to the Gateway Study Area without any sanitary sewer improvements based on capacity, is approximately 125 SAC units, which translates to approximately 300,000 gsf of additional office, warehousing, or industrial redevelopment in this portion of the Gateway Study Area. This value is based on the existing capacity of Lift Station No. 10. Additional redevelopment exceeding 270 SAC units, which translates to approximately 648,000 gsf of additional office, warehousing or industrial redevelopment that directs flow to Computer Avenue, would warrant the upsizing of the 9-inch sanitary sewer along Computer Avenue. The addition of any flow will further increase the insufficient capacity issues of the MCES interceptor along West 84<sup>th</sup> Street until capacity improvements can be accomplished by the MCES and Bloomington.

Sanitary sewer within Sanitary Service Area B and C is adequately sized to handle the increase in flows that are proposed under Scenario 1. Downstream upgrades to Edina Lift Stations No. 6 and No. 22 which are part of the City's Capital Improvement Program can adequately handle the increase in flows as a result of redevelopment. The same holds true for Edina's downstream trunk sanitary sewer and the MCES Richfield-491 interceptor serving these areas.

**Table 18-6: Sewer Capacity Analysis for Scenario 1**

Flow Direction & Service Area		Existing Downstream	Existing Gateway Study Area	Existing Combined Flows			Proposed Gateway Study Area	Proposed Combined Flows					Downstream Capacity (MGD)	Adequate Sizing
		Average Flow (MGD)	Average Flow (MGD)	Total Average Flow (MGD)	Peak Flow Factor	Total Peak Flow (MGD)	Average Flow (MGD)	Total Average Flow (MGD)	Peak Flow Factor	Total Peak Flow (MGD)*	Increase in Peak Flow (MGD)*	Percent Change in Flow*		
<b>A</b>	Commercial	0.130	0.091	0.221			0.198	0.328					1.008	NO
	Residential		0.010	0.010			0.010	0.010						
	<b>Total</b>	<b>0.130</b>	<b>0.101</b>	<b>0.231</b>	<b>3.8</b>	<b>0.878</b>	<b>0.208</b>	<b>0.338</b>	<b>3.7</b>	<b>1.251</b>	<b>0.373</b>	<b>42%</b>		
<b>B</b>	Commercial	0.161	0.067	0.228			0.069	0.230					1.616	YES
	Residential		0.000	0.000			0.000	0.000						
	<b>Total</b>	<b>0.161</b>	<b>0.067</b>	<b>0.228</b>	<b>3.8</b>	<b>0.866</b>	<b>0.069</b>	<b>0.230</b>	<b>3.7</b>	<b>0.851</b>	<b>-0.015</b>	<b>-2%</b>		
<b>C</b>	Commercial	0.000	0.056	0.056			0.059	0.059					0.494	YES
	Residential		0.000	0.000			0.000	0.000						
	<b>Total</b>	<b>0.000</b>	<b>0.056</b>	<b>0.056</b>	<b>4</b>	<b>0.224</b>	<b>0.059</b>	<b>0.059</b>	<b>4</b>	<b>0.236</b>	<b>0.012</b>	<b>5%</b>		

\* Peak Flow measured at Bloomington L.S. No. 10 for Service Area A; Parklawn Avenue at Oaklawn Avenue cutoff for Service Area B; and Edina L.S. No. 22 for Service Area C.

**Impacts of Development Scenario 2:**

The redevelopment under Scenario 2 would consist of a mix of commercial office space, retail, multi-family residential, warehousing, and would also include a 150-room hotel. The office space and warehousing sanitary sewer loading is calculated the same as in Scenario 1 with the application of MCES peaking factors. For the hotel, per MCES guidelines, every two rooms are equal to one SAC unit. Anticipated wastewater flow for the Gateway Study Area under Scenario 2 is shown below in **Table 18-7**. **Table 18-8** summarizes the estimated wastewater characteristics and loading for the wastewater that will be generated under Scenario 2.

**Table 18-7. Estimated Average Day and Peak Hour Wastewater Flow from Scenario 2**

Type	Service Area	Gross Square Footage (Non-Res.)	Equivalent Residential Units	Total Average Daily Wastewater Flow (MGD)	Peak Hour Wastewater Flow (MGD)
Commercial Office & Warehousing	A	2,269,000	945	0.259	0.907
	B	545,000	227	0.062	0.248
	C	519,000	216	0.059	0.236
Onsite Residential	A		848	0.232	0.812
	B		80	0.022	0.088
	C		-	-	
<b>Total</b>	-	<b>3,333,000</b>	<b>2,316</b>	<b>0.634</b>	<b>2.291</b>

**Table 18-8. Estimated Wastewater Characteristics and Total Average Daily Wastewater Loading from Scenario 2**

Parameter	WWTP	Estimated Wastewater Characteristics and Average Day Loading		Increase Over Existing Loads
		mg/l	lbs/day	lbs/day
Biochemical Oxygen Demand	Metro	220	255	38
	Seneca		950	762
Total Suspended Solids	Metro	220	255	38
	Seneca		950	762
Ammonia - Nitrogen	Metro	25	29	5
	Seneca		109	87
Total Phosphorous	Metro	8	9	1
	Seneca		35	28

Under this scenario approximately 75 percent (1.719 MGD) of the peak flow generated from the Gateway Study Area will be diverted south through the MCES BN-499 Interceptor sewer (Sanitary Service Area A). Approximately 15 percent (0.336 MGD) of the peak flow generated will be directed north along Parklawn Avenue to Lift Station No. 6 (Sanitary Service Area B). The remaining 10 percent (0.236 MGD) of the peak flow discharges directly across France Avenue to Lift Station No. 22 (Sanitary Service Area C).

**Table 18-9** provides a breakdown of the sanitary sewer capacity analysis for each sanitary service area under Scenario 2. Based on this analysis, it is evident that potential redevelopment that occurs within Sanitary Service Area A may lead to downstream sanitary capacity issues, mainly at the MCES Bloomington Lift Station No. 10, and will warrant the upsizing of the 9-inch sanitary sewer along Computer Avenue to a 15-inch sanitary sewer. The threshold sanitary sewer flow that can be added to the Gateway Study Area without any sanitary sewer improvements, based on capacity, is the same as Scenario 1, and is approximately 125 SAC units, which translate to approximately 300,000 gsf of additional office, warehousing, or industrial development in this portion of the Gateway Study Area. This value is based on the existing capacity of Lift Station No. 10. Additional redevelopment exceeding 270 SAC units, which translate to approximately 648,000 gsf of additional office, warehousing or industrial redevelopment that directs flow to Computer Avenue, would warrant the upsizing of the 9-inch sanitary sewer along Computer Avenue. The addition of any flow will further increase the insufficient capacity issues of the MCES interceptor along West 84<sup>th</sup> Street until capacity improvements can be accomplished by the MCES and Bloomington.

Sanitary sewer within Sanitary Service Area B and C is adequately sized to handle the increase in flows that are proposed under Scenario 2. Downstream upgrades to Edina Lift Stations No. 6 and No. 22 which are part of the City's Capital Improvement Program can adequately handle the increase in flows as a result of redevelopment. The same holds true for Edina's downstream trunk sanitary sewer and the MCES Richfield-491 interceptor serving these areas.

**Table 18-9: Sewer Capacity Analysis for Scenario 2**

Flow Direction & Service Area		Existing Downstream	Existing Gateway Study Area	Existing Combined Flows			Proposed Gateway Study Area	Proposed Combined Flows					Downstream Capacity (MGD)	Adequate Sizing
		Average Flow (MGD)	Average Flow (MGD)	Total Average Flow (MGD)	Peak Flow Factor	Total Peak Flow (MGD)	Average Flow (MGD)	Total Average Flow (MGD)	Peak Flow Factor	Total Peak Flow (MGD)*	Increase in Peak Flow (MGD)*	Percent Change in Flow*		
<b>A</b>	Commercial	0.130	0.091	0.221			0.259	0.389					1.008	NO
	Residential		0.010	0.010			0.232	0.232						
	<b>Total</b>	<b>0.130</b>	<b>0.101</b>	<b>0.231</b>	<b>3.8</b>	<b>0.878</b>	<b>0.491</b>	<b>0.621</b>	<b>3.4</b>	<b>2.111</b>	<b>1.234</b>	<b>141%</b>		
<b>B</b>	Commercial	0.161	0.067	0.228			0.062	0.223					1.616	YES
	Residential		0.000	0.000			0.022	0.022						
	<b>Total</b>	<b>0.161</b>	<b>0.067</b>	<b>0.228</b>	<b>3.8</b>	<b>0.866</b>	<b>0.084</b>	<b>0.245</b>	<b>3.7</b>	<b>0.907</b>	<b>0.040</b>	<b>5%</b>		
<b>C</b>	Commercial	0.000	0.056	0.056			0.059	0.059					0.494	YES
	Residential		0.000	0.000			0.000	0.000						
	<b>Total</b>	<b>0.000</b>	<b>0.056</b>	<b>0.056</b>	<b>4</b>	<b>0.224</b>	<b>0.059</b>	<b>0.059</b>	<b>4</b>	<b>0.236</b>	<b>0.012</b>	<b>5%</b>		

\* Peak Flow measured at Bloomington L.S. No. 10 for Service Area A; Parklawn Avenue at Oaklawn Avenue cutoff for Service Area B; and Edina L.S. No. 22 for Service Area C.

**Impacts of Development Scenario 3:**

The redevelopment under this scenario would consist of the maximum amount of commercial space and warehousing. The commercial space and warehousing sanitary sewer loading is calculated the same as the previous scenarios. Peaking factors recommended by the MCES based on average daily flows vary from 3.6 to 4.0 were used to determine the peak hour flow. Future wastewater flow for the Gateway Study Area under Scenario 3 is shown below in **Table 18-10**. **Table 18-11** summarizes the estimated wastewater characteristics and loading for the wastewater that will be generated under Scenario 3.

**Table 18-10. Estimated Average Day and Peak Hour Wastewater Flow from Scenario 3**

Type	Service Area	Gross Square Footage (Non-Res.)	Equivalent Residential Units	Total Average Daily Wastewater Flow (MGD)	Peak Hour Wastewater Flow (MGD)
Commercial Office & Warehousing	A	3,175,000	1,323	0.363	1.307
	B	879,000	366	0.100	0.390
	C	519,000	216	0.059	0.236
Onsite Residential	A		36	0.010	0.036
	B		-	-	-
	C		-	-	-
<b>Total</b>	-	<b>4,573,000</b>	<b>1,941</b>	<b>0.532</b>	<b>1.969</b>

**Table 18-11. Estimated Wastewater Characteristics and Total Average Daily Wastewater Loading from Scenario 3**

Parameter	WWTP	Estimated Wastewater Characteristics and Average Day Loading		Increase Over Existing Loads
		mg/l	lbs/day	lbs/day
Biochemical Oxygen Demand	Metro	220	328	112
	Seneca		704	515
Total Suspended Solids	Metro	220	328	112
	Seneca		704	515
Ammonia - Nitrogen	Metro	25	38	13
	Seneca		80	59
Total Phosphorous	Metro	8	12	4
	Seneca		26	19

Under this scenario approximately 68 percent (1.343 MGD) of the peak flow generated from the Gateway Study Area will be diverted south through the MCES BN-499 Interceptor sewer (Sanitary Service Area A). Approximately 20 percent (0.390 MGD) of the peak flow generated will be directed north along Parklawn Avenue to Lift Station No. 6 (Sanitary Service Area B). The remaining 12 percent (0.236 MGD) of the peak flow discharges across France Avenue to Lift Station No. 22 (Sanitary Service Area C).

**Table 18-12** provides a breakdown of the sanitary sewer capacity analysis for each sanitary service area under Scenario 3. Based on this analysis, it is evident that potential redevelopment that occurs within Sanitary Service Area A may lead to downstream sanitary capacity issues, mainly at the MCES Bloomington Lift Station No. 10, and will warrant the upsizing of the 9-inch sanitary sewer along Computer Avenue to a 15-inch sanitary sewer. The threshold sanitary sewer flow that can be added to the Gateway Study Area without any sanitary sewer improvements, based on capacity, is the same as Scenario 1 and Scenario 2, and is approximately 125 SAC units, which translate to approximately 300,000 gsf of additional office, warehousing, or industrial redevelopment in this portion of the Gateway Study Area. This value is based on the existing capacity of Lift Station No. 10. Additional redevelopment exceeding 270 SAC units, which translate to approximately 648,000 gsf of additional office, warehousing or industrial redevelopment that directs flow to Computer Avenue, would warrant the upsizing of the 9-inch sanitary sewer along Computer Avenue. The addition of any flow will further increase the insufficient capacity issues of the MCES interceptor along West 84<sup>th</sup> Street until capacity improvements can be accomplished by the MCES and Bloomington.

Sanitary sewer within Sanitary Service Area B and C is adequately sized to handle the increase in flows that are proposed under Scenario 3. Downstream upgrades to Edina Lift Stations No. 6 and No. 22 which are part of the City's Capital Improvement Program can adequately handle the increase in flows as a result of redevelopment. The same holds true for Edina's downstream trunk sanitary sewer and the MCES Richfield-491 interceptor serving these areas.

**Table 18-12: Sewer Capacity Analysis for Scenario 3**

Flow Direction & Service Area		Existing Downstream	Existing Gateway Study Area	Existing Combined Flows			Proposed Gateway Study Area	Proposed Combined Flows					Downstream Capacity (MGD)	Adequate Sizing
		Average Flow (MGD)	Average Flow (MGD)	Total Average Flow (MGD)	Peak Flow Factor	Total Peak Flow (MGD)	Average Flow (MGD)	Total Average Flow (MGD)	Peak Flow Factor	Total Peak Flow (MGD)*	Increase in Peak Flow (MGD)*	Percent Change in Flow*		
A	Commercial	0.130	0.091	0.221			0.363	0.493					1.008	NO
	Residential		0.010	0.010			0.010	0.010						
	<b>Total</b>	<b>0.130</b>	<b>0.101</b>	<b>0.231</b>	<b>3.8</b>	<b>0.878</b>	<b>0.373</b>	<b>0.503</b>	<b>3.5</b>	<b>1.761</b>	<b>0.883</b>	<b>101%</b>		
B	Commercial	0.161	0.067	0.228			0.1	0.261					1.616	YES
	Residential		0.000	0.000			0	0.000						
	<b>Total</b>	<b>0.161</b>	<b>0.067</b>	<b>0.228</b>	<b>3.8</b>	<b>0.866</b>	<b>0.1</b>	<b>0.261</b>	<b>3.6</b>	<b>0.940</b>	<b>0.073</b>	<b>8%</b>		
C	Commercial	0.000	0.056	0.056			0.059	0.059					0.494	YES
	Residential		0.000	0.000			0.000	0.000						
	<b>Total</b>	<b>0.000</b>	<b>0.056</b>	<b>0.056</b>	<b>4</b>	<b>0.224</b>	<b>0.059</b>	<b>0.059</b>	<b>4</b>	<b>0.236</b>	<b>0.012</b>	<b>5%</b>		

\* Peak Flow measured at Bloomington L.S. No. 10 for Service Area A; Parklawn Avenue at Oaklawn Avenue cutoff for Service Area B; and Edina L.S. No. 22 for Service Area C.

**Impacts of Development Scenario 4:**

The redevelopment under this scenario would consist of a mix of commercial office space, retail, warehousing, and would maximize the potential number of multi-family residential units. The office space and warehousing sanitary sewer loading is calculated the same as the previous scenarios. For all residential units, an average daily wastewater flow of 274 gpd per unit will be used. Peaking factors recommended by the MCES based on average daily flows vary from 3.4 to 4.0 were used to determine the peak hour flow. Future wastewater flow for the Gateway Study Area under Scenario 4 is shown below in **Table 18-13**. **Table 18-14** summarizes the estimated wastewater characteristics and loading for the wastewater that will be generated under Scenario 4.

**Table 18-13. Estimated Average Day and Peak Hour Wastewater Flow from Scenario 4**

Type	Service Area	Gross Square Footage (Non-Res.)	Equivalent Residential Units	Total Average Daily Wastewater Flow (MGD)	Peak Hour Wastewater Flow (MGD)
Commercial Office & Warehousing	A	1,341,000	559	0.153	0.520
	B	545,000	227	0.062	0.248
	C	519,000	216	0.059	0.236
Onsite Residential	A	-	1,433	0.393	1.336
	B	-	100	0.027	0.108
	C	-	-	-	-
<b>Total</b>		<b>2,405,000</b>	<b>2,535</b>	<b>0.694</b>	<b>2.448</b>

**Table 18-14. Estimated Wastewater Characteristics and Total Average Daily Wastewater Loading from Development Scenario 4**

Parameter	WWTP	Estimated Wastewater Characteristics and Average Day Loading		Increase Over Existing Loads
		mg/l	lbs/day	lbs/day
Biochemical Oxygen Demand	Metro	220	315	99
	Seneca		1,018	829
Total Suspended Solids	Metro	220	315	99
	Seneca		1,018	829
Ammonia - Nitrogen	Metro	25	36	12
	Seneca		117	95
Total Phosphorous	Metro	8	12	4
	Seneca		37	30

Under this scenario approximately 76 percent (1.856 MGD) of the peak flow generated from the Gateway Study Area will be diverted south through the MCES BN-499 Interceptor sewer (Sanitary Service Area A). Approximately 14 percent (0.356 MGD) of the peak flow generated will be directed north along Parklawn Avenue to Lift Station No. 6 (Sanitary Service Area B). The remaining 10 percent (0.236 MGD) of the peak flow discharges across France Avenue to Lift Station No. 22 (Sanitary Service Area C).

**Table 18-15** provides a breakdown of the sanitary sewer capacity analysis for each sanitary service area under Scenario 4. Based on this analysis, it is evident that potential redevelopment that occurs within Sanitary Service Area A may lead to downstream sanitary capacity issues, mainly at the MCES Bloomington Lift Station No. 10, and will warrant the upsizing of the 9-inch sanitary sewer along Computer Avenue to an 18-inch sanitary sewer. The threshold sanitary sewer flow that can be added to the Gateway Study Area without any sanitary sewer improvements, based on capacity, is the same as the previous three scenarios, and is approximately 125 SAC units, which translate to approximately 300,000 gsf of additional office, warehousing, or industrial redevelopment in this portion of the Gateway Study Area. This value is based on the existing capacity of Lift Station No. 10. Additional redevelopment exceeding 270 SAC units, which translate to approximately 648,000 gsf of office, warehousing or industrial redevelopment that directs flow to Computer Avenue, would warrant the upsizing of the 9-inch sanitary sewer along Computer Avenue. The addition of any flow will further increase the insufficient capacity issues of the MCES interceptor along West 84<sup>th</sup> Street until capacity improvements can be accomplished by the MCES and Bloomington.

Sanitary sewer within Sanitary Service Area B and C is adequately sized to handle the increase in flows that are proposed under Scenario 3. Downstream upgrades to Edina Lift Stations No. 6 and No. 22 which are part of the City's Capital Improvement Program can adequately handle the increase in flows as a result of redevelopment. The same holds true for Edina's downstream trunk sanitary sewer and the MCES Richfield-491 interceptor serving these areas.

**Table 18-15: Sewer Capacity Analysis for Scenario 4**

Flow Direction & Service Area		Existing Downstream	Existing Gateway Study Area	Existing Combined Flows			Proposed Gateway Study Area	Proposed Combined Flows					Downstream Capacity (MGD)	Adequate Sizing
		Average Flow (MGD)	Average Flow (MGD)	Total Average Flow (MGD)	Peak Flow Factor	Total Peak Flow (MGD)	Average Flow (MGD)	Total Average Flow (MGD)	Peak Flow Factor	Total Peak Flow (MGD)*	Increase in Peak Flow (MGD)*	Percent Change in Flow*		
A	Commercial	0.130	0.091	0.221			0.153	0.283					1.008	NO
	Residential		0.010	0.010			0.393	0.393						
	<b>Total</b>	<b>0.130</b>	<b>0.101</b>	<b>0.231</b>	<b>3.8</b>	<b>0.878</b>	<b>0.546</b>	<b>0.676</b>	<b>3.3</b>	<b>2.231</b>	<b>1.353</b>	<b>154%</b>		
B	Commercial	0.161	0.067	0.228			0.062	0.223					1.616	YES
	Residential		0.000	0.000			0.027	0.027						
	<b>Total</b>	<b>0.161</b>	<b>0.067</b>	<b>0.228</b>	<b>3.8</b>	<b>0.866</b>	<b>0.089</b>	<b>0.250</b>	<b>3.7</b>	<b>0.925</b>	<b>0.059</b>	<b>7%</b>		
C	Commercial	0.000	0.056	0.056			0.059	0.059					0.494	YES
	Residential		0.000	0.000			0.000	0.000						
	<b>Total</b>	<b>0.000</b>	<b>0.056</b>	<b>0.056</b>	<b>4</b>	<b>0.224</b>	<b>0.059</b>	<b>0.059</b>	<b>4</b>	<b>0.236</b>	<b>0.012</b>	<b>5%</b>		

\* Peak Flow measured at Bloomington L.S. No. 10 for Service Area A; Parklawn Avenue at Oaklawn Avenue cutoff for Service Area B; and Edina L.S. No. 22 for Service Area C.

## **Water Quality - Wastewater Mitigation Plan**

- Any redevelopment activities that may increase the total sanitary sewer flows within Service Area A beyond threshold limits for peak capacity will require upgraded facilities within the Gateway Study Area (Computer Avenue sanitary sewer) and Bloomington (MCES Bloomington Lift Station No. 10) to accommodate increased flows.
- Edina, Bloomington, and Metropolitan Council Environmental Services will continue discussions and analysis regarding proposed capacity upgrades to Bloomington Lift Station No. 10 and the MCES BN-499 Interceptor along West 84<sup>th</sup> Street in Bloomington.
- Edina will complete its update to their Comprehensive Sanitary Sewer Plan.
- Edina will upgrade Lift Station No. 22.
- In conjunction with redevelopment activities, Edina will determine the condition of the existing sanitary sewer pipe within the Gateway Study Area to determine if repairs or replacement is necessary based on in-place pipe condition and infiltration potential.

### **19. GEOLOGIC HAZARDS AND SOIL CONDITIONS**

- a. Approximate depth (in feet) to groundwater: 6 minimum; 10 average  
Approximate depth (in feet) to bedrock: 120 minimum; 125 average**
- b. Describe any of the following geologic site hazards to ground water and also identify them on the site map: sinkholes, shallow limestone formations or karst conditions. Describe measures to avoid or minimize environmental problems due to any of these hazards.**
- c. Describe the soils on the site, giving NRCS (SCS) classifications, if known. Discuss soil granularity and potential for groundwater contamination from wastes or chemicals spread or spilled onto the soils. Discuss any mitigation measures to prevent such contamination.**

*For purposes of the geologic hazard analysis in this AUAR, the responses to Items 19a-c are included together in this section.*

### **Existing Conditions**

No limestone, sinkholes or karst conditions are known within the Gateway Study Area.

The soils within the Gateway Study Area consist mainly of loamy sands, silts, clays, and peat underlain with an undetermined thickness of sand and silty sand. One location in the northwest corner of the Gateway Study Area has a hydrologic soils group classification of A. The overall low infiltration rates can result in increased runoff from the Study Area. **Table 19-1** lists the soils present in the Study Area and **Figure 19-1** shows the location of these soils.

Limited soil boring data is available within the Gateway Study Area at the locations of the Pentagon Towers and Pentagon Quads site. Based on this information, there is organic and alluvial material underlying the existing fill that was placed for the existing development. The surficial groundwater in the area is very high in this area and was encountered between six to 14 feet below the surface. It is anticipated that this is typical for the entire Gateway Study Area.

The Hennepin County Geologic Atlas indicates the bedrock for the majority of the Study Area is between 120-125 feet below the surface. The sensitivity to groundwater contamination within the area is very high, meaning the estimated travel time for water-borne surface contaminants to reach the aquifer is days to weeks.

**Table 19-1. Soils within the Study Area**

<b>Map Symbol</b>	<b>Map Unit Name</b>	<b>Hydrologic Group</b>	<b>Hydric</b>
U1A	Urban - Udorthents	B	Yes
U4A	Urban - Udipsamments	A	Yes
L50A	Houghton & Muskego	A/D	Yes
L55B	Urban - Malardi	N/A	Yes

**Impact of Development Scenarios 1 through 4**

The proposed land use within the Study Area is anticipated to be office, commercial, light industrial with the potential for high-density residential redevelopment in Scenarios 2 and 4. These types of land uses are not anticipated to present a hazard to groundwater contamination since contaminants are generally not expected to be present within the area. Based on the proposed land use, the potential for groundwater contamination should be no greater than the potential that exists with the existing fully-developed commercial and warehousing land use.

During construction, temporary dewatering is anticipated to be needed to install building footings and connect municipal services. As part of construction, project proposers will need to identify suitable routes for the dewatering discharge. Temporary dewatering must also incorporate erosion and sedimentation control Best Management Practices to avoid impacting water quality downstream of local ponds or of Nine Mile Creek.

Redevelopment within the Pentagon Towers and Pentagon Quads site is anticipated to use underground parking. It is anticipated that this underground parking will require permanent dewatering operations. This activity will require approval from the DNR and Nine Mile Creek Watershed District as well as a dewatering plan to identify quantities and route of discharge as this activity has the potential to impact downstream water resources with additional volume loading as well as impact the water level of adjacent ponds by lowering the water table. Lowering the water table also has the potential to cause subsidence of the underlying organic material in the area if the organic material dries out.

### **Geologic Hazards and Soil Conditions Mitigation Plan**

- The NPDES Phase II Construction Site permit requires a site specific Storm Water Pollution Prevention Plan (SWPPP) to be completed for the construction by the project proposer. This SWPPP is required to include pollution prevention management measures for solid waste and hazardous material spills that occur during construction.
- Mitigation includes conformance with the Edina spill response plan. Spills will be reported to the fire chief and/or applicable City Staff. The fire chief and/or applicable City Staff will in turn notify any other appropriate officials depending on the nature of the spill.
- Project proposer(s) will be required to develop a temporary dewatering plan for construction activities, review this plan with Edina and Nine Mile Creek Watershed District for approval, and conform to the dewatering requirements of the DNR and NPDES Construction permit.
- If a redevelopment project involves permanent dewatering for underground facilities, a detailed dewatering plan is required to be developed by the project proposer. This plan would include anticipated dewatering amounts, direction of discharge, analysis of impact on adjacent ponds and downstream receiving waters, and impact on the organic material within the Study Area for the potential for subsidence. The plan will need to be submitted to Edina, Nine Mile Creek Watershed District, and DNR for review and/or approval.

### **20. SOLID WASTES, HAZARDOUS WASTES, AND STORAGE TANKS**

- a. Describe types, amounts and compositions of solid or hazardous wastes, including solid animal manure, sludge and ash, produced during construction and operation. Identify method and location of disposal. For projects generating municipal solid waste, indicate if there is a source separation plan; describe how the project will be modified for recycling. If hazardous waste is generated, indicate if there is a hazardous waste minimization plan and routine hazardous waste reduction assessments.**

No hazardous wastes are anticipated to be produced by the redevelopment scenarios. Municipal solid waste will be hauled away by the municipal garbage service and residents and businesses will be encouraged to recycle.

**Table 20-1** outlines estimated quantities of municipal solid waste for each scenario. These numbers were developed based on information from the Environmental Protection Agency (1999). Based on the Environmental Protection Agency, one person generates approximately 4.9 pounds of solid municipal waste per day. This number is an aggregate number that takes into account commercial and business use. For the purposes of generating solid waste numbers only, it was assumed 2.3 persons per household for the residential use, 1.3 people per 1,000 square feet for light industrial uses, and 3.3 people per 1,000 square feet of commercial uses were present.

#### **Table 20-1. Estimated quantities of municipal solid waste generated annually.**

	<i>Existing Conditions</i>	<i>Scenario 1</i>	<i>Scenario 2</i>	<i>Scenario 3</i>	<i>Scenario 4</i>
<i>Solid Waste Generated</i>	7,848,652 lbs	12,372,484 lbs	18,549,605 lbs	22,495,036 lbs	15,878,797 lbs

- b. Identify any toxic or hazardous materials to be used or present at the site and identify measures to be used to prevent them from contaminating groundwater. If the use of toxic or hazardous materials will lead to a regulated waste, discharge or emission, discuss any alternatives considered to minimize or eliminate the waste, discharge or emission.**

Due to the age of the existing buildings within the Gateway Study Area, asbestos may be contained in insulation and construction materials that were used in the construction of these buildings. An asbestos survey performed in 2006 by the Developer revealed asbestos containing components in some of the buildings located within the Gateway Study Area.

During redevelopment, the only hazardous material anticipated to be present in the Gateway Study Area would be the fuel and oil used by construction equipment during construction activities. The management, containment, and clean up of any spills that may occur within a construction site during construction will be addressed under the MPCA NPDES/SDS Storm Water Construction Permit and its accompanying Storm Water Pollution Prevention Plan preparation. A copy of this plan is required on-site during construction and utilized in the event that a spill or discharge may occur.

Post-construction land use would include primarily commercial office space, light industrial space, or residential units and is not anticipated to generate toxic materials.

- c. Indicate the number, location, size and use of any above or below ground tanks to store petroleum products or other materials, except water. Describe any emergency response containment plans.**

Existing tank locations are discussed in **Item 9**.

The proposed commercial areas have the potential for a neighborhood convenience store and gas station to be constructed. A gas station would have underground petroleum tanks. This type of development would be required to adhere to State regulations for containment of underground petroleum tanks and an annual license would be needed.

**Solid Waste, Hazardous Waste, and Storage Tanks Mitigation Plan**

- Municipal waste hauler companies will make residential and commercial recycling programs available to the Study Area. General municipal waste will be removed by these waste hauler companies.

- Prior to demolition an asbestos survey shall be completed by a project proposer. At the time of demolition, any necessary asbestos abatement will need to be completed by the project proposer in compliance with MPCA requirements.
- The management, containment, and clean up of any spills that may occur within the Study Area during construction will be addressed by the permit holders of the MPCA NPDES/SDS Storm Water Construction Permit and its accompanying Storm Water Pollution Prevention Plan preparation.
- If a neighborhood convenience store and gas station is proposed, the project proposer will be required to adhere to State regulations for containment of underground petroleum tanks and an annual license would be needed.

- 21. Traffic. Parking spaces added Not Necessary for AUAR . Existing spaces (if project involves expansion) NA .**  
**Estimated maximum peak hour traffic generated (if known) and time of occurrence**  
See Appendix A .  
**Provide an estimate of the impact on traffic congestion on affected roads and describe any traffic improvements necessary. If the project is within the Twin Cities metropolitan area, discuss its impact on the regional transportation system.**

**A. Method of Analysis**

The traffic operations analysis is derived from established methodologies documented in the Highway Capacity Manual (TRB, 2000). The Highway Capacity Manual (HCM) provides a series of analysis techniques that are used to evaluate traffic operations for roadway segments, intersections, and freeway ramps by using roadway geometry, traffic control, and traffic volumes.

Multiple steps are required when completing traffic analysis. First key roadways and intersections are selected. Typically these key locations are selected because they are anticipated to provide development access to the metropolitan roadway network. Traffic analysis is typically reported for existing and future/build conditions.

Existing traffic conditions, such as traffic volumes, lane geometry, and signal timing are collected and put in a traffic model. The model is calibrated to replicate existing conditions. Existing conditions provide a baseline at which to compare future conditions.

Future conditions are analyzed using future traffic projections. Developing traffic projections includes trip generation, trip distribution, and trip assignment. Trip generation estimates the number of trips the proposed land use will produce. A vehicle trip only includes a vehicle that is entering or exiting a site. So a person who travels to work within a site would generate two trips; one when they go to work and one when they leave work. Trip distribution includes reviewing existing and future anticipated travel patterns to determine how motorists will access the metropolitan roadway network. Trip assignment then assigns the trips to the network using

projected trip distribution. For purposes of this study, trips for other approved developments were also applied to projected roadway and intersection traffic volumes. Background growth was added to the future volumes to account for traffic that is using the roadway, but is not redevelopment related. The future traffic projections are entered into the traffic model to determine future deficiencies. Strategies are then developed to mitigate the deficiencies.

The HCM analysis typically provides results in the form of a letter grade from A to F, otherwise called level of service (LOS). The letter is meant give a qualitative estimate of the operational efficiency or effectiveness. The system is set up similar to a report card, with A representing high quality operations and F representing poor operations. At LOS A, motorists experience very little delay or interference. On a roadway or intersection with LOS F conditions, motorists would experience extreme delay or severe congestion.

Although LOS A conditions represent the best possible level of traffic flow, the cost to construct roadways and intersections to such high standards exceeds the benefit to the user. Therefore, Edina has an overall goal to provide its residents with conditions at LOS D or better. Operations at LOS E are acceptable for individual movements.

The analysis techniques defined in the HCM is different for roadways and intersections. Roadway segment analysis focuses on the average daily volume to capacity ratio, while intersection analysis focuses on delay caused by the peak hour critical movements. It is therefore possible to have an efficient intersection located along a poorly operating roadway segment, or a poorly operating intersection along an otherwise free-flowing arterial.

For intersections, LOS is primarily a function of a.m. and p.m. peak hour turning movement volumes, intersection lane configuration, and traffic control. The intersection analysis was completed using average control delay as defined by the HCM. LOS for signalized intersections is shown on **Table 21-1**.

**Table 21-1. Signalized Intersection Level of Service Measures**

Level of Service	Delay (sec/veh)
A	<10
B	10-20
C	20-35
D	35-55
E	55-80
F	80<

Source: Tables 16-2, Highway Capacity Manual (2000)

The HCM divides the freeway system into three different classifications for analysis; basic freeway segments, freeway weaving segments, and ramps and ramp junctions. For purposes of this study, the ability to get vehicles on and off of the interstate system is a priority and therefore analysis included weaving segments and ramps that interact with the freeway. Level of service for weave and ramp analysis is defined in terms of density or the passenger car per mile per lane (pc/mi/ln).

Weaving segments are formed when an on-ramp is closely followed by an off-ramp and the two are joined by an auxiliary lane. The HCM defines this length at less than 2,500 feet. Weaving segments require intense lane-changing maneuvers as drivers must access lanes appropriate to their desired exit points. The HCM defines three major categories of weaving configurations: Type A, Type B, and Type C.

- Type A - Weaving vehicles in both directions must make one lane change to successfully complete a weaving maneuver.
- Type B - Weaving vehicles in one direction may complete a weaving maneuver without making a lane change, whereas other vehicles in the weaving segment must make one lane change to successfully complete a weaving maneuver.
- Type C - Weaving vehicles in one direction may complete a weaving maneuver without making a lane change, whereas other vehicles in the weaving segment must make two or more lane changes to successfully complete a weaving maneuver.

Level of service measures for freeway weaving are defined in **Table 21-2**.

When a ramp does not meet the definition to be considered a weaving segment, ramp merge and diverge influence areas are evaluated separately. A merge occurs at on on-ramp when vehicles attempt to find gaps on the freeway. A diverge occurs at off-ramps when vehicles attempt to exit

the freeway. Studies have shown that the influence areas for a merge and diverge sections extend 1,500 feet downstream or upstream of the ramp. Level of service measures for freeway ramps are defined in **Table 21-2**.

The weave and ramp analysis will flag areas where mitigation is needed. However, the disadvantage of this type of analysis is that it does not take into account the effects of delay at other interchanges or bottlenecks within the interstate network. To complete this type of analysis, a simulation model of the interstate system would be required.

**Table 21-2. Freeway Level of Service Measures**

Level of Service	Density (pc/mi/ln)
A	≤10
B	10-20
C	20-28
D	28-35
E	>35
F	43<

Source: Tables 24-2, Highway Capacity Manual (2000)

**B. Existing Conditions**

In order to evaluate the existing conditions, key roadway segments and intersections were selected that are expected to provide the primary access to the regional roadway system when the Study Area redevelops. This section documents the geometry, traffic volumes, and functional class at these locations, and uses these traffic characteristics to estimate their existing traffic operations.

**(1) Key Roadways**

The following eight roadways were selected as the key roadway segments for the Study Area:

- East Bush Lake Road between American Boulevard and West 78<sup>th</sup> Street
- Edina Industrial Boulevard from West 78<sup>th</sup> Street to Metro Avenue
- Edina Industrial Boulevard/West 77<sup>th</sup> Street from Metro Avenue to Computer Avenue
- West 77<sup>th</sup> Street from Computer Avenue to Parklawn Avenue
- Minnesota Drive from West 77<sup>th</sup> Street to France Avenue
- Parklawn Avenue/West 76<sup>th</sup> Street from West 77<sup>th</sup> Street to France Avenue
- France Avenue from West 76<sup>th</sup> Street to Minnesota Drive

- France Avenue from Minnesota Drive to Westbound I-494 Exit Ramp

The transportation characteristics for the roadways are displayed in **Table 21-3**. The existing roadway segment is documented, along with the existing functional classification. Also displayed are average annual daily traffic (AADT) volumes were obtained from *Year 2005 Mn/DOT Traffic Flow Maps*.

**Table 21-3. Characteristics of Key Roadways**

Segment	Location	Functional Classification	Facility Type	2005 AADT
East Bush Lake Road	American Boulevard and West 78th Street	A Minor Arterial - Reliever	Four-Lane with Turn Lanes	12,400
Edina Industrial Boulevard	West 78th Street to Metro Boulevard	A Minor Arterial - Reliever	Four-Lane	9,000
Edina Industrial Boulevard/West 77th Street	Metro Boulevard to Computer Avenue	A Minor Arterial - Reliever	Four-Lane with Turn Lanes	9,900
West 77th Street	Computer Avenue to Parklawn Avenue	A Minor Arterial - Reliever	Four-Lane with Center Turn Lane	12,500
Parklawn Avenue/West 76th Street	West 77th Street to France Avenue	A Minor Arterial - Reliever	Four-Lane	9,100
Minnesota Drive	West 77th Street to France Avenue	B Minor Collector	Four-Lane with Turn Lanes	5,800
France Avenue	West 76th Street to Minnesota Drive	A Minor Arterial - Reliever	Seven-Lane with Turn Lanes	28,700
France Avenue	Minnesota Drive to Westbound Interstate 494 Exit Ramp	A Minor Arterial - Reliever	Six-Lane with Turn Lanes	28,700

K:\01686-04\Traffic\LOS Seg.xls

Source: 2005 Mn/DOT Traffic Flow Maps and 1999 Edina Comprehensive Plan

## **(2) Key Intersections**

The following fifteen intersections, displayed on **Figure 21-1** in **Appendix A**, were selected because they provide primary access to the regional roadway system from the Study Area:

- France Avenue / West 76th Street
- Edina Industrial Blvd / West 78th Street
- Edina Industrial Blvd / Metro Boulevard
- Southbound TH 100 / West 77th Street
- Northbound TH 100 / West 77th Street

- Commercial Access / West 77th Street
- Computer Avenue / West 77th Street
- Parklawn Avenue / West 77th Street
- West 77th Street / Minnesota Drive / Johnson Avenue
- France Avenue / Minnesota Drive
- Westbound I-494 / East Bush Lake Road
- Eastbound I-494 / East Bush Lake Road
- American Boulevard / East Bush Lake Road
- France Avenue / West 78th Street / Westbound I-494 Off Ramp
- France Avenue / Eastbound I-494 Off Ramp

The vast majority of traffic exiting and entering the Study Area would have to use at least one of these intersections. The a.m. and p.m. peak hour turn movements, lane geometry, and traffic control are displayed on **Figure 21-2** and **21-3** in **Appendix A**. Turning movements were taken in January-May of 2007. All analyzed intersections are controlled by traffic signals. For purposed of analysis, traffic signal timing was obtained from Mn/DOT, Hennepin County, and Edina.

### **(3) Freeway Weaving and Ramp Junctions**

The following weave segments and ramp junctions were selected for analysis:

- I-494 Eastbound
  - Diverge to East Bush Lake Road Exit
  - Weave between East Bush Lake Road and TH 100
  - Diverge to France Avenue
  - Merge from France Avenue
- I-494 Westbound
  - Diverge to France Avenue
  - Merge from France Avenue
  - Weave between TH 100 and East Bush Lake Road
- TH 100 Northbound
  - Weave between I-494 and West 77<sup>th</sup> Street
  - Weave between West 77<sup>th</sup> Street and West 70<sup>th</sup> Street
- TH 100 Southbound
  - Weave between West 70<sup>th</sup> Street and West 77<sup>th</sup> Street
  - Weave between West 77<sup>th</sup> Street and I-494

The following loops were selected for analysis (as specified by Mn/DOT):

- I-494 at France Avenue
  - Southbound loop between France Avenue and eastbound I-494
- I-494 at TH 100
  - Southbound TH 100 loop to eastbound I-494

Traffic volumes obtained from Mn/DOT on I-494 and TH 100 and their ramps were taken in April 2007.

#### **(4) Existing Land Use**

The existing land use consists mostly of office and office/warehouse uses. A more detailed description of the existing Gateway Study Area can be found in **Section 6A**. Currently about 1,904,000 gsf of building space is available within the Study Area, of which about 223,500 gsf of office space is unoccupied. Building areas were measured from aerial photographs. The amount of unoccupied space was provided by Wayzata Properties.

The estimated trip generation is calculated in **Table 21-4**. The Pentagon Development areas are described in more detail in **Section 5** and on **Figure 5-3**. As shown, the Study Area is currently generating about 16,900 vehicle trips per day (vpd). When the office space is fully occupied, the Gateway Study Area has the potential to generate 19,400 vpd. The analyzed interchanges also act as the access for the area south of the Study Area. The area bounded by TH 100 to the west, France Avenue to the east, I-494 to the south, and Gateway Study Area to the north generates an additional 24,100 vpd when fully occupied.

**Table 21-4. Existing Trip Generation**

Development	Size	Occupancy	Time of Day	Trip Rate	Trip Generation				
					Total	In		Out	
						%	Trips	%	Trips
Pentagon Tower	142,876 gsf	69.3%	Daily	11.01	1,090	50	545	50	545
			AM Peak Hour	1.55	153	88	135	12	18
			PM Peak Hour	1.49	147	17	25	83	122
Pentagon Quads	355,054 gsf	60.0%	Daily	11.01	2,347	50	1,174	50	1,173
			AM Peak Hour	1.55	330	88	290	12	40
			PM Peak Hour	1.49	318	17	54	83	264
Pentagon East	136,611 gsf	91.2%	Daily	11.01	1,371	50	686	50	685
			AM Peak Hour	1.55	193	88	170	12	23
			PM Peak Hour	1.49	186	17	32	83	154
Pentagon Tower SE	25,620 gsf	0.0%	Daily	11.01	0	50	0	50	0
			AM Peak Hour	1.55	0	88	0	12	0
			PM Peak Hour	1.49	0	17	0	83	0
Other Office	992,700 gsf	100.0%	Daily	11.01	10,930	50	5,465	50	5,465
			AM Peak Hour	1.55	1,539	88	1,354	12	185
			PM Peak Hour	1.49	1,479	17	251	83	1,228
Other Office / Warehousing	207,000 gsf	100.0%	Daily	4.96	1,027	50	514	50	513
			AM Peak Hour	0.57	118	59	70	41	48
			PM Peak Hour	0.61	126	8	10	92	116
Other Mini Storage	45,000 gsf	100.0%	Daily	2.5	113	50	57	50	56
			AM Peak Hour	0.28	13	48	6	52	7
			PM Peak Hour	0.29	13	53	7	47	6
<b>Total</b>			Daily		16,878		8,441		8,437
			AM Peak Hour		2,346		2,025		321
			PM Peak Hour		2,269		379		1,890

Source: ITE Trip Generation Manual (7<sup>th</sup> Edition) and WSB & Associates, Inc.

### **(5) Existing Operations Analysis**

Traffic operations were evaluated for the existing key roadway segments and intersections listed above. This section describes the methodology used to assess the operations and provides a summary of how traffic is operating today.

The existing intersection operations were evaluated using Synchro and SimTraffic for the a.m. and p.m. peak hour. The results of this analysis are illustrated in **Table 21-5**. During the p.m. peak hour, Edina Industrial Boulevard/Metro Boulevard and France Avenue/Minnesota Drive are deficient at LOS E. At both intersections, vehicles are trying to access the interstate system and queue lengths are deficient. On France Avenue, vehicles are queuing between intersections.

Existing freeway operations were evaluated using worksheets from the HCM. The results of this analysis are shown in **Table 21-6**. Analysis worksheets are available upon request. The entrance ramp from France Avenue onto westbound I-494 is deficient operating at LOS F during the p.m. peak hour. Other ramps are not deficient; however, many of the ramps are operating at LOS D during the a.m. and p.m. peak hours.

**Table 21-5 Existing (2007) Intersection Level of Service**

Intersection	Traffic Control	2007					
		AM Peak Hour			PM Peak Hour		
		LOS	Delay	Notes	LOS	Delay	Notes
France Ave / W 76th St	Traffic Signal	C	30.9	NBL at LOS E with delay at 75.6 sec/veh	C	32.2	
Edina Ind Blvd / W 78th St	Traffic Signal	C	27.8		C	29.7	
Edina Ind Blvd / Metro Blvd	Traffic Signal	B	11.5		E	71.3	SBL and EBL at LOS F with delay over 100 sec/veh
SB TH 100 / W 77th St	Traffic Signal	C	26.3		D	48.2	EBT at LOS F with delay at 92.1 sec/veh
NB TH 100 / W 77th St	Traffic Signal	C	22.1		D	50.6	EBL at LOS F with delay at 84.3 sec/veh
Commercial Access / W 77th St	Traffic Signal	A	5.0		C	26.6	
Computer Ave / W 77th	Traffic Signal	C	20.6		C	23.4	
Parklawn Ave / W 77th St	Traffic Signal	C	20.9		C	32.4	
W 77th St / Minnesota Dr	Traffic Signal	B	11.7		C	29.5	
France Ave / Minnesota Dr	Traffic Signal	C	25.2		E	67.6	WBL at LOS F with delay over 100 sec/veh
WB I494 / E Bush Lake	Traffic Signal	B	16.5		B	11.2	
EB I494 / E Bush Lake	Traffic Signal	B	14.6		C	22.2	
American Blvd / E Bush Lake	Traffic Signal	B	13.5		A	9.6	
France Ave / W 78th St-WB I-494 Off Ramp	Traffic Signal	C	24.7	NBL at LOS E with delay at 64.4 sec/veh	D	44.0	EBL at LOS F with delay over 100 sec/veh
France Ave / EB I-494 Off Ramp	Traffic Signal	C	21.3		B	17.7	

Source: WSB & Associates, Inc.

Note: Based upon criteria shown in **Table 21-2**

**Table 21-6. Existing (2007) Freeway Level of Service**

Merge or Ramp Junction Location		2007			
		A.M. Peak Hour		P.M. Peak Hour	
		LOS	Density	LOS	Density
I-494 Eastbound	Diverge to East Bush Lake Road Exit	B	17.0	B	12.0
	Weave between East Bush Lake Road and TH 100	D	32.6	C	24.2
	Diverge to France Avenue	C	26.0	B	18.0
	Merge from France Avenue	D	32.0	D	31.0
I-494 Westbound	Diverge to France Avenue	D	30.0	D	29.0
	Merge from France Avenue	D	31.0	E	36.0
	Weave between TH 100 and East Bush Lake Road	D	29.0	D	34.6
TH 100 Northbound	Weave between I-494 and West 77th Street	C	22.7	C	21.6
	Weave between West 77th Street and West 70th Street	B	19.2	D	29.3
TH 100 Southbound	Weave between West 70th Street and West 77th Street	B	11.2	B	15.9
	Weave between West 77th Street and I-494	B	10.4	C	21.2

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Source: Year 2007 Mn/DOT Traffic Counts and WSB & Associates, Inc.

Note: Based upon criteria shown in **Table 21-3** and **Table 21-4**

**C. Impacts of Redevelopment Scenarios**

**(1) Future Traffic Forecasts**

The purpose of this section is to identify the traffic impacts associated with the future redevelopment within the Study Area. Four potential land use scenarios were evaluated. More detailed descriptions of these scenarios can be viewed in **Section 6A** and on **Figures 6-1 to 6-4**. Trips for each of the scenarios were generated and distributed on the regional system and analyzed for years 2014 and 2030.

**(a) Trip Generation**

In order to estimate the traffic generated by the Study Area, land use assumptions were applied to trip generation rates from the *ITE Trip Generation Manual* (7<sup>th</sup> Edition) as illustrated in **Tables 21-10 to 21-13**. All of the proposed scenarios replace existing office space. Trips generated from the existing buildings were shown previously in **Table 21-4**. These trips were removed from the network before applying the new land uses. It should be noted only the portion of space that is currently occupied was taken into consideration. Additionally, trips generated as a part of The Burgundy development (within the Gateway Study Area) are not included in this total since they will be added to the existing turning movements with the other previously approved developments. The Burgundy redevelopment is anticipated to generate 2,260 trips per day, with 88 trips and 95 trips during the a.m. and p.m. peak hours, respectively.

Scenario 1 consists of office and office/warehouse land uses. This scenario is taken from the Edina Comprehensive Plan. The plan will generate about 24,000 vpd. The net increase equates to 7,100 vpd with about 900 trips during each of the a.m. and p.m. peak hours.

Scenario 2 adds residential, retail, and a hotel, increasing the production to about 35,600 vpd. However, the proposed retail will be developed to serve the residential. To account for trips traveling from the residential to the retail, internal trips were taken into account. Using estimates from the manual, about 2,200 trips were considered internal and removed from the net. The net increase in vehicle trips is 16,500 vpd with 1,700 during each of the a.m. and p.m. peak hours.

Scenario 3 produces the largest number of trips, at about 42,900 trips per day due to the large amount of office space. The net increase is 26,000 vpd with about 3,500 trips during each of the a.m. and p.m. peak hours.

Scenario 4 includes office, office/warehousing, and residential uses creating 26,900 trips per day. For reasons described above under Scenario 2, about 160 internal trips were removed. The net increase in vehicle trips is 9,800 vpd with 700 and 800 trips during the a.m. and p.m. peak hour, respectively.

**Table 21-7. Estimated Trip Generation – Scenario 1**

Land Use	ITE Land Use	Size	Time of Day	Trip Rate	Trip Generation				
					Total	In		Out	
						%	Trips	%	Trips
Office	710	1,593,000 gsf	Daily	11.01	17,539	50	8,770	50	8,769
			AM Peak Hour	1.55	2,469	88	2,173	12	296
			PM Peak Hour	1.49	2,374	17	404	83	1,970
Office and Warehousing	150	1,296,000 gsf	Daily	4.96	6,428	50	3,214	50	3,214
			AM Peak Hour	0.57	739	59	436	41	303
			PM Peak Hour	0.61	791	8	63	92	728
<b>Total</b>			Daily		23,967		11,984		11,983
			AM Peak Hour		3,208		2,609		599
			PM Peak Hour		3,165		467		2,698
<i>Net Increase in Trips</i>			<i>Daily</i>		<i>7,089</i>		<i>3,543</i>		<i>3,546</i>
			<i>AM Peak Hour</i>		<i>862</i>		<i>584</i>		<i>278</i>
			<i>PM Peak Hour</i>		<i>896</i>		<i>88</i>		<i>808</i>

Source: ITE Trip Generation Manual (7<sup>th</sup> Edition) and WSB & Associates, Inc.

**Table 21-8. Estimated Trip Generation – Scenario 2**

Land Use	ITE Land Use	Size	Time of Day	Trip Rate	Trip Generation				
					Total	In		Out	
						%	Trips	%	Trips
Office	710	1,908,000 gsf	Daily	11.01	21,007	50	10,504	50	10,503
			AM Peak Hour	1.55	2,957	88	2,602	12	355
			PM Peak Hour	1.49	2,843	17	483	83	2,360
Office and Warehousing	150	1,296,000 gsf	Daily	4.96	6,428	50	3,214	50	3,214
			AM Peak Hour	0.57	739	59	436	41	303
			PM Peak Hour	0.61	791	8	63	92	728
Retail	814	80,000 gsf	Daily	44.32	3,546	50	1,773	50	1,773
			AM Peak Hour	6.84	547	48	263	52	284
			PM Peak Hour	5.02	402	56	225	44	177
Hotel	310	150 rooms	Daily	8.17	1,226	50	613	50	613
			AM Peak Hour	0.52	78	55	43	45	35
			PM Peak Hour	0.61	92	58	53	42	39
Condominium / Townhome	230	205 units	Daily	5.86	1,201	50	601	50	600
			AM Peak Hour	0.44	90	18	16	82	74
			PM Peak Hour	0.52	107	64	68	36	39
Senior Adult Housing - Attached	252	615 units	Daily	3.48	2,140	50	1,070	50	1,070
			AM Peak Hour	0.06	37	50	19	50	18
			PM Peak Hour	0.11	68	53	36	47	32
<b>Total</b>			Daily		35,548		17,775		17,773
			AM Peak Hour		4,448		3,379		1,069
			PM Peak Hour		4,303		928		3,375
<b>Internal Trips</b>			Daily		-2,195		-1,097		-1,098
			AM Peak Hour		-419		-201		-218
			PM Peak Hour		-311		-173		-138
<b>Net Increase in Trips</b>			Daily		16,475		8,237		8,238
			AM Peak Hour		1,683		1,153		530
			PM Peak Hour		1,723		376		1,347

Source: ITE Trip Generation Manual (7<sup>th</sup> Edition) and WSB & Associates, Inc.

**Table 21-9. Estimated Trip Generation – Scenario 3**

Land Use	ITE Land Use	Size	Time of Day	Trip Rate	Trip Generation				
					Total	In		Out	
						%	Trips	%	Trips
Office	710	3,308,000 gsf	Daily	11.01	36,421	50	18,211	50	18,210
			AM Peak Hour	1.55	5,127	88	4,512	12	615
			PM Peak Hour	1.49	4,929	17	838	83	4,091
Office and Warehousing	150	1,296,000 gsf	Daily	4.96	6,428	50	3,214	50	3,214
			AM Peak Hour	0.57	739	59	436	41	303
			PM Peak Hour	0.61	791	8	63	92	728
<b>Total</b>			Daily		42,849		21,425		21,424
			AM Peak Hour		5,866		4,948		918
			PM Peak Hour		5,720		901		4,819
<i>Net Increase in Trips</i>			<i>Daily</i>		<i>25,971</i>		<i>12,984</i>		<i>12,987</i>
			<i>AM Peak Hour</i>		<i>3,520</i>		<i>2,923</i>		<i>597</i>
			<i>PM Peak Hour</i>		<i>3,451</i>		<i>522</i>		<i>2,929</i>

Source: ITE Trip Generation Manual (7<sup>th</sup> Edition) and WSB & Associates, Inc.

**Table 21-10. Estimated Trip Generation – Scenario 4**

Land Use	ITE Land Use	Size	Time of Day	Trip Rate	Trip Generation				
					Total	In		Out	
						%	Trips	%	Trips
Office	710	1,140,000 gsf	Daily	11.01	12,551	50	6,276	50	6,275
			AM Peak Hour	1.55	1,767	88	1,555	12	212
			PM Peak Hour	1.49	1,699	17	289	83	1,410
Office and Warehousing	150	1,296,000 gsf	Daily	4.96	6,428	50	3,214	50	3,214
			AM Peak Hour	0.57	739	59	436	41	303
			PM Peak Hour	0.61	791	8	63	92	728
Condominium / Townhome	230	1,125 units	Daily	5.86	6,593	50	3,297	50	3,296
			AM Peak Hour	0.44	495	18	89	82	406
			PM Peak Hour	0.52	585	64	374	36	211
Senior Adult Housing - Attached	252	375 units	Daily	3.48	1,305	50	653	50	652
			AM Peak Hour	0.06	23	50	12	50	11
			PM Peak Hour	0.11	41	53	22	47	19
<b>Total</b>			Daily		26,877		13,440		13,437
			AM Peak Hour		3,024		2,092		932
			PM Peak Hour		3,116		748		2,368
<b>Internal Trips</b>			Daily		-158		-79		-79
			AM Peak Hour		-11		-3		-8
			PM Peak Hour		-13		-8		-5
<b>Net Increase in Trips</b>			Daily		9,841		4,920		4,921
			AM Peak Hour		667		64		603
			PM Peak Hour		834		361		473

Source: ITE Trip Generation Manual (7<sup>th</sup> Edition) and WSB & Associates, Inc.

**(b) Trip Distribution**

**Figure 21-4** in **Appendix A** shows the distribution of site-generated trips that would be expected to access the major roadways in the network. The distribution was developed using the *2000 Metropolitan Travel Demand Model* and existing turning movement counts. Trip distribution is separated directionally and also by the a.m. and p.m. peak hours. This method takes into account differing travel patterns during different times of the day, likely due to congestion.

**(c) Trip Assignment**

Turning movements were estimated by applying the approach direction distribution percentages to the site-generated traffic. In addition to the site-generated traffic, an annualized growth rate of one percent was added to thru traffic on France Avenue and West 77<sup>th</sup> Street. Using the *2000 Metropolitan Travel Demand Model*, it was estimated that ten percent of traffic on these roadways is through traffic. Additionally, trips were also added for nearby redevelopments that have been approved by the cities of Edina and Bloomington and are not yet completed or occupied. More details about these redevelopments are discussed in **Section 29** and displayed on **Figure 29-1**. Lastly, turning movements for the year 2025 condition were modified to account for Mn/DOT's future plans for I-494 and TH 100. Turning movements for year 2014 and year 2030 for all four scenarios are displayed in **Figures 21-5 to 21-20** in **Appendix A**.

The 2030 daily traffic volumes were estimated using a similar method to the peak hour volumes described above. The existing (2005) daily traffic volumes were taken as the base year, background traffic was added in similar to described above, and proposed Gateway Area development trips were added in assuming an average of the a.m. and p.m. peak hour distribution. Daily traffic volume forecasts are shown in Table 21-11.

**(d) Forecast Traffic Operations**

The future traffic operations consisted of two parts. The first was an evaluation of the impact of the redevelopment on the key roadways and intersections notes above. The other analysis documents the developmental impacts to the surrounding interstate system.

**(i) Future Intersection Operations**

A summary of the expected traffic operations on the fifteen key intersections is displayed on **Table 21-12** to **21-15**. All scenarios will have operational deficiencies in years 2014 and 2030. Deficiencies include operations on France Avenue, the TH 100 interchange, and accesses to the Gateway Study Area. The majority of these locations do not have right or left turn lanes or the existing turn lanes do not have adequate capacity to handle the forecast traffic volumes. This is consistent with the *1999 Edina Comprehensive Plan* which shows future storage space deficiencies at the TH 100 at West 77<sup>th</sup> Street. The following roadway deficiencies were noted:

For Scenarios 1 and 4:

- France Avenue at West 76<sup>th</sup> Street - inadequate capacity to handle the forecast through volumes on France Avenue.
- France Avenue at West 78<sup>th</sup> Street/WB I-494 Ramp - eastbound right turn lane has a queue greater than the storage bay length, therefore blocking through lanes.
- Edina Industrial Boulevard/West 78<sup>th</sup> Street at East Bush Lake Road – eastbound approach has inadequate capacity; all vehicles can not clear intersection in one cycle length.
- Metro Boulevard at Edina Industrial Boulevard – southbound approach has inadequate capacity; all vehicles can not clear intersection in one cycle length. Eastbound left turning vehicles blocks the through lane traffic, currently no designated turn lane. This intersection was identified as currently deficient under the exiting conditions analysis.
- Northbound TH 100 ramps at West 77<sup>th</sup> Street – westbound right turn lane has inadequate capacity, queue of vehicles backs through two intersections.

For Scenario 2, the deficiencies noted above and the following additional deficiencies were noted:

- Computer Avenue at West 77<sup>th</sup> St – northbound left turning traffic queue blocks through lanes.
- Minnesota Drive at West 77<sup>th</sup> Street and Johnson Avenue – southbound left turning vehicles create queue blocking previous intersection.

For Scenario 3, all the previous deficiencies plus the following additional deficiencies were noted:

- West 77<sup>th</sup> Street between Metro Boulevard and Parklawn Avenue - not enough through lanes to operate at an acceptable level of service.
- TH 100 bridge on West 77<sup>th</sup> Street – inadequate lanes to handle left turning traffic from/to the freeway ramps.

**Table 21-11. Future (2030) Daily Traffic Volumes**

Segment	Location	2030 AADT			
		Scenario 1	Scenario 2	Scenario 3	Scenario 4
East Bush Lake Road	American Boulevard and West 78th Street	13,300	13,800	15,100	13,400
Edina Industrial Boulevard	West 78th Street to Metro Boulevard	11,300	13,200	15,600	11,500
Edina Industrial Boulevard/West 77th Street	Metro Boulevard to Computer Avenue	13,500	16,500	20,300	13,900
West 77th Street	Computer Avenue to Parklawn Avenue	17,100	20,700	25,700	17,500
Parklawn Avenue/West 76th Street	West 77th Street to France Avenue	11,200	13,000	15,200	11,400
Minnesota Drive	West 77th Street to France Avenue	8,100	10,000	12,400	8,300
France Avenue	West 76th Street to Minnesota Drive	29,600	30,300	31,200	29,600
France Avenue	Minnesota Drive to Westbound Interstate 494 Exit Ramp	30,300	31,500	33,200	30,400

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Source: WSB & Associates, Inc.

**Table 21-12. Future (2014) A.M. Peak Hour Intersection Level of Service**

Intersection	Traffic Control	2014 A.M. Peak Hour											
		Scenario 1			Scenario 2			Scenario 3			Scenario 4		
		LOS	Delay	Notes	LOS	Delay	Notes	LOS	Delay	Notes	LOS	Delay	Notes
France Ave / W 76th St	Traffic Signal	C	34.4	NBL at LOS F	D	39.5	NBL at LOS F	E	67.1	NBL at LOS F	C	31.9	NBL at LOS F
Edina Ind Blvd / W 78th St	Traffic Signal	C	29.1	NBL at LOS E	F	91.4		F	+100		C	30.7	NBL at LOS F
Edina Ind Blvd / Metro Blvd	Traffic Signal	B	18.4		F	+100		F	+100		B	12.0	
SB TH 100 / W 77th St	Traffic Signal	D	49.2		F	+100		F	+100		C	29.2	
NB TH 100 / W 77th St	Traffic Signal	D	52.2	EBT & EBR at LOS F	E	75.1	EB Approach LOS F	E	76.6	EB Approach LOS F	C	33.1	
Commercial Access / W 77th St	Traffic Signal	A	8.6		B	12.9		A	9.6		A	8.4	
Computer Ave / W 77th	Traffic Signal	C	21.0		C	26.7		C	20.6		C	23.3	
Parklawn Ave / W 77th St	Traffic Signal	C	24.2	WBT & SBL at LOS E	C	31.3	WBT & SBL at LOS E	F	+100		C	24.6	
W 77th St / Minnesota Dr	Traffic Signal	A	9.3		A	9.2		A	8.2		B	11.5	
France Ave / Minnesota Dr	Traffic Signal	C	32.4	SBL, EBL, & WBL at LOS E NBL at LOS F	D	47.7	SBL, SBT at LOS E NBL, WBL & SBL at LOS F	D	42.1		C	34.9	SBL, EBL, & WBL at LOS E NBL at LOS F
WB I494 / E Bush Lake	Traffic Signal	B	15.3		F	+100		F	+100		B	15	
EB I494 / E Bush Lake	Traffic Signal	B	14.8		C	33.5	NBT at LOS E	D	53.6	NBT at LOS F	B	15	
American Blvd / E Bush Lake	Traffic Signal	B	12.2		C	28.1	SBL at LOS E	E	60.6	NBT at LOS F	B	11.9	NBT at LOS F
France Ave / W 78th St-WB I-494 Off Ramp	Traffic Signal	C	26.7	EBL LOS F	D	40.0	EBL, WBL, WBT, & NBL LOS F	E	74.7	EB Approach & WB Approach LOS F	C	34.2	EBL at LOS F
France Ave / EB I-494 Off Ramp	Traffic Signal	C	28.3	EBL LOS F	C	34.1	EBL LOS F	C	33.4	EBL LOS F	C	32.1	EBL LOS E

Source: WSB & Associates, Inc.

Note: Based upon criteria shown in **Table 21-2**

**Table 21-13. Future (2014) P.M. Peak Hour Intersection Level of Service**

Intersection	Traffic Control	2014 P.M. Peak Hour											
		Scenario 1			Scenario 2			Scenario 3			Scenario 4		
		LOS	Delay	Notes	LOS	Delay	Notes	LOS	Delay	Notes	LOS	Delay	Notes
France Ave / W 76th St	Traffic Signal	F	+100		F	+100		F	+100		F	+100	
Edina Ind Blvd / W 78th St	Traffic Signal	D	38.0	EBL at LOS F	D	42.9		E	77.2	EBL, WBR,NBL, & NBT at LOS F	D	44.2	EBL at LOS F
Edina Ind Blvd / Metro Blvd	Traffic Signal	F	+100		F	+100		F	+100		F	+100	
SB TH 100 / W 77th St	Traffic Signal	F	80.7		E	59.0	EBT at LOS F	F	+100		E	68.9	EBT at LOS F
NB TH 100 / W 77th St	Traffic Signal	E	75.6	NB Approach & EB Approach LOS F	F	+100		F	+100		E	64.1	EB Approach LOS F
Commercial Access / W 77th St	Traffic Signal	D	43.3	NB Approach & SB Approach LOS F	D	35.0	EBL, NBL at LOS E	D	50.3		D	35.5	EBL, NBL, & NBT at LOS F
Computer Ave / W 77th	Traffic Signal	F	+100		F	+100		F	+100		E	60.3	WBT, WBR, & NBL at LOS F
Parklawn Ave / W 77th St	Traffic Signal	F	+100		F	+100		F	+100		C	28.6	SBT at LOS F
W 77th St / Minnesota Dr	Traffic Signal	F	+100		E	67.6	SBL & SBT at LOS F	E	74.5	SBT & SBL at LOS F	C	27.1	
France Ave / Minnesota Dr	Traffic Signal	F	+100		F	+100		F	+100		F	+100	
WB I494 / E Bush Lake	Traffic Signal	B	11.8		B	12.1		D	52.1	WBR & NBT at LOS F	B	11.5	
EB I494 / E Bush Lake	Traffic Signal	B	18.7		B	18.3		B	18.4		B	18.3	
American Blvd / E Bush Lake	Traffic Signal	A	9.8		A	9.6		A	9.6		A	9.7	
France Ave / W 78th St-WB I-494 Off Ramp	Traffic Signal	E	64.8	EBL & SBT LOS F	D	53.9	EBL & SBT at LOS F	D	50.9	EBL & SBT at LOS F	E	55.7	EBL & SBT LOS F
France Ave / EB I-494 Off Ramp	Traffic Signal	C	21.6		B	19.4		B	19.0		B	19.3	

Source: WSB & Associates, Inc.

Note: Based upon criteria shown in **Table 21-2**

**Table 21-14. Future (2030) A.M. Peak Hour Intersection Level of Service**

Intersection	Traffic Control	2030 A.M. Peak Hour											
		Scenario 1			Scenario 2			Scenario 3			Scenario 4		
		LOS	Delay	Notes	LOS	Delay	Notes	LOS	Delay	Notes	LOS	Delay	Notes
France Ave / W 76th St	Traffic Signal	C	34.4	NBL at LOS F	D	37.5	NBL at LOS F	E	55.1	NBL at LOS F	C	31.9	SBL, EBL, & WBL at LOS E NBL at LOS F
Edina Ind Blvd / W 78th St	Traffic Signal	C	29.1	NBL at LOS E	F	+100		F	+100		C	28.9	
Edina Ind Blvd / Metro Blvd	Traffic Signal	B	18.4		F	+100		F	+100		B	10.9	
SB TH 100 / W 77th St	Traffic Signal	D	49.2		F	+100		F	+100	EB Approach at LOS F	D	37.2	EBT & WBL at LOS F
NB TH 100 / W 77th St	Traffic Signal	D	52.2	EBT & EBR at LOS F	E	79.9	EB Approach at LOS F	F	81.7	EB Approach at LOS F	D	39.0	EBT at LOS F
Commercial Access / W 77th St	Traffic Signal	A	8.6		B	11.3		A	9.1		A	7.9	
Computer Ave / W 77th	Traffic Signal	C	21.0		C	26.3		B	19.8		C	23.3	
Parklawn Ave / W 77th St	Traffic Signal	C	24.2	WBT & SBL at LOS E	C	30.8	WBT & SBL at LOS E	F	+100	WBT & SBL at LOS E	C	23.0	SBL & WBT at LOS F
W 77th St / Minnesota Dr	Traffic Signal	A	9.3		A	9.3		A	7.6		B	11.5	
France Ave / Minnesota Dr	Traffic Signal	C	32.4	SBL, EBL, & WBL at LOS E NBL at LOS F	C	34.1	SBL, EBL, & WBL at LOS E NBL at LOS F	D	39.7	EBL, SBL, & WBL at LOS E NBL at LOS F	C	34.1	SBL, EBL, & WBL at LOS E NBL at LOS F
WB I494 / E Bush Lake	Traffic Signal	B	15.3		F	+100		F	+100		B	14.9	
EB I494 / E Bush Lake	Traffic Signal	B	14.8		F	96.2		F	+100		B	14.9	
American Blvd / E Bush Lake	Traffic Signal	B	12.2		F	+100		F	+100		B	12	SBL at LOS E
France Ave / W 78th St-WB I-494 Off Ramp	Traffic Signal	C	26.7	EBL LOS F	C	32.2	EBL & WBL at LOS F	F	+100	EB & WB Approach at LOS F	C	31.5	NBL & WBL at LOS E EBL at LOS F
France Ave / EB I-494 Off Ramp	Traffic Signal	C	28.3	EBL LOS F	C	31.9	EBL at LOS F	C	28.4	EBL at LOS F	C	33.1	EBL at LOS E

Source: WSB & Associates, Inc.

Note: Based upon criteria shown in **Table 21-2**

**Table 21-15. Future (2030) P.M. Peak Hour Intersection Level of Service**

Intersection	Traffic Control	2030 P.M. Peak Hour											
		Scenario 1			Scenario 2			Scenario 3			Scenario 4		
		LOS	Delay	Notes	LOS	Delay	Notes	LOS	Delay	Notes	LOS	Delay	Notes
France Ave / W 76th St	Traffic Signal	F	+100		F	+100	EB Approach, WBL, & SBT at LOS F	F	+100		F	+100	
Edina Ind Blvd / W 78th St	Traffic Signal	D	43.2	EB Approach at LOS F	D	48.0	EBL at LOS F	F	82.7		D	51.6	EB Approach at LOS F
Edina Ind Blvd / Metro Blvd	Traffic Signal	F	+100		F	+100		F	+100		F	+100	
SB TH 100 / W 77th St	Traffic Signal	E	59.2	EB Approach at LOS F	E	56.7	EBT & EBR LOS F	F	+100		E	72.0	EBT & EBR LOS F
NB TH 100 / W 77th St	Traffic Signal	E	66.7	EBL, EBT, & NBL at LOS F	F	+100	EBL & WBT at LOS E	F	+100		E	66.3	EB Approach at LOS F
Commercial Access / W 77th St	Traffic Signal	D	41.6	EBL & NBT at LOS F	C	33.5	EBL, NBT, & WBT at LOS E	D	49.5	NBL, SBL, & EBL at LOS F	C	33.6	NB Approach & EBL at LOS F
Computer Ave / W 77th	Traffic Signal	F	+100		F	+100		F	+100		E	61.6	WBT & NBL at LOS F
Parklawn Ave / W 77th St	Traffic Signal	F	+100		F	+100		F	+100		C	29.3	
W 77th St / Minnesota Dr	Traffic Signal	E	62.5	SBL at LOS F	E	67.2	SB Approach at LOS F	E	72.8	SBL at LOS F	C	25.2	
France Ave / Minnesota Dr	Traffic Signal	F	+100		F	+100		F	+100		F	+100	
WB 1494 / E Bush Lake	Traffic Signal	B	11.0		B	11.5		E	56.3	NBT & WBR at LOS F	B	16.1	
EB 1494 / E Bush Lake	Traffic Signal	B	18.0		B	18		B	18.1		B	19	
American Blvd / E Bush Lake	Traffic Signal	A	8.9		A	9.5		A	9.5		B	10	
France Ave / W 78th St-WB I-494 Off Ramp	Traffic Signal	D	54.6	EBL & SBT at LOS F	D	54.2	EBL & SBT at LOS F	E	56.8	EBL & SBT at LOS F	D	52.3	EBL & SBT at LOS F
France Ave / EB I-494 Off Ramp	Traffic Signal	B	18.8		B	19.4		C	20.0		B	19.1	

Source: WSB & Associates, Inc.

Note: Based upon criteria shown in **Table 21-2**

## **(ii) Regional Interstate System**

Currently, the surrounding interstate system experiences significant delay during the a.m. and p.m. peak hours. For this reason, it is important to estimate the additional traffic that is anticipated due to increased redevelopment within the Gateway Study Area. Existing traffic counts were obtained from Mn/DOT for April 2007 for interstate mainlines and ramps. The redevelopment traffic estimates for the four scenarios were added to these counts. The results are illustrated on **Tables 21-16 and 21-17**. The gray shading indicates an interstate ramp, and bold indicates Mn/DOT requested loops.

As shown, Scenario 3 would have the largest impact to the I-494 and TH 100. Percentage of growth on sections of I-494 would increase traffic volumes by a maximum of ten percent during the a.m. peak hour and 12 percent during the p.m. peak hour. Northbound TH 100 increases by 30 percent during the a.m. peak hour and 15 percent during the p.m. peak hour just north of the W 77<sup>th</sup> Street interchange. The other scenarios have little impact on the I-494 with most locations having less than a one percent increase. The most growth is on TH 100 just north of the W 77<sup>th</sup> Street interchange and its ramps.

Weave segment and ramp junction analysis is displayed in **Table 21-18**. Projections for I-494 mainline were developed using growth rates from Year 2017 I-494 CORSIM forecasts provided by Mn/DOT. Two conditions were analyzed: a 2014 No Build Condition and 2014 Scenario 3. The 2014 No Build includes the projected increase in traffic volumes to be used for comparison. Scenario 3 was chosen for evaluation because it represents the worst case condition since it generates the highest volume of trips. As shown in the table, the following locations are anticipated to be deficient by 2014:

- I-494 Eastbound
  - Merge from France Avenue
- I-494 Westbound
  - Merge from France Avenue (This merge section was noted as deficient during the existing conditions.)
  - Weave segment between TH 100 and East Bush Lake Road
- TH 100 Northbound
  - Weave segment between I-494 and West 77<sup>th</sup> Street
  - Weave segment between West 77<sup>th</sup> Street and West 70<sup>th</sup> Street
- TH 100 Southbound
  - Weave segment between West 77<sup>th</sup> Street and I-494

When the traffic was added from Scenario 3, the density of traffic increased slightly. However, the same weave segments and ramp junctions remained deficient. Therefore, the deficiencies noted are due to the increase in mainline volumes, rather than the increase in redevelopment traffic at the ramps. Scenarios 1, 2, and 4 would

be expected to have less impact than Scenario 3. The weave segment and ramp junction analysis worksheets are available on request.

The ramps and ramp loops at the I-494 and TH 100 interchange are estimated to operate similar to today after development. Scenario 3 added the greatest amount of traffic to the interstate system, while only increasing the ramp volumes by about 3.5%. The ramp ramp/loop volumes are not greater than 1900 vph, the approximate capacity stated by the Highway Capacity Manual (HCM), Exhibit 25-3 for a single lane ramp with a speed of 20-30 mph, common for a loop.

Similarly the operations of the France Avenue interchange at I-494 will not be greatly impacted by the proposed development trips. The highest France Avenue ramp volume is 1259 vehicles in the peak hour, on the eastbound exit ramp from I-494. The development is estimated to add 176 new trips to this ramp, a 14% increase. The estimated volume is less than the 1900 vph stated in the HCM.

**Table 21-16. A.M. Peak Hour Freeway Growth from Redevelopment**

Freeway Segment		Existing	Scenario 1		Scenario 2		Scenario 3		Scenario 4		
		2007	Dev Trips	% Growth	Dev Trips	% Growth	Dev Trips	% Growth	Dev Trips	% Growth	
I-494	Eastbound	West of E Bush Lake Rd	5183	142	2.7%	144	2.8%	510	9.8%	12	0.2%
		Exit Ramp to E Bush Lake Rd	888	62	7.0%	88	9.9%	222	25.0%	5	0.6%
		Between E Bush Lake Rd Ramps	4295	80	1.9%	56	1.3%	288	6.7%	7	0.2%
		Entrance Ramp from E Bush Lake Rd	645	0	0.0%	0	0.0%	0	0.0%	0	0.0%
		East of E Bush Lake Rd	4940	80	1.6%	56	1.1%	288	5.8%	7	0.1%
		West of France Ave	6973	50	0.7%	15	0.2%	180	2.6%	8	0.1%
		Exit Ramp to France Ave	1259	49	3.9%	12	1.0%	176	14.0%	4	0.3%
		Between France Avenue Ramps	5714	1	0.0%	3	0.1%	4	0.1%	4	0.1%
		<b>Entrance Ramp Loop from SB France Ave</b>	<b>267</b>	<b>4</b>	<b>1.5%</b>	<b>15</b>	<b>5.6%</b>	<b>19</b>	<b>7.1%</b>	<b>19</b>	<b>7.1%</b>
	Westbound	Between France Avenue Ramps	5981	5	0.1%	18	0.3%	23	0.4%	23	0.4%
		Entrance Ramp from NB France Ave	307	0	0.0%	0	0.0%	0	0.0%	0	0.0%
		East of France Ave	6295	5	0.1%	18	0.3%	23	0.4%	23	0.4%
		East of France Ave	6706	91	1.4%	129	1.9%	325	4.8%	7	0.1%
		Exit Ramp to France Ave	1109	49	4.4%	70	6.3%	176	15.9%	4	0.4%
		Between France Avenue Ramps	5625	42	0.7%	59	1.0%	149	2.6%	3	0.1%
		Entrance Ramp from NB France Ave	383	0	0.0%	0	0.0%	0	0.0%	0	0.0%
		Between France Avenue Ramps	6008	42	0.7%	59	1.0%	149	2.5%	3	0.0%
		Entrance from SB France Ave	244	6	2.5%	20	8.2%	24	9.8%	25	10.2%
		West of France Ave	6252	48	0.8%	79	1.3%	173	2.8%	28	0.4%
TH 100	Northbound	East of Bush Lake Rd	5769	1	0.0%	3	0.1%	3	0.1%	3	0.1%
		Exit Ramp to E Bush Lake Rd	576	0	0.0%	0	0.0%	0	0.0%	0	0.0%
		West of E Bush Lake Rd	5193	1	0.0%	3	0.1%	3	0.1%	3	0.1%
		South of W 77th St Ramps	2868	87	3.0%	123	4.3%	310	10.8%	7	0.2%
		Exit Ramp to W 77th St	237	87	36.7%	123	51.9%	310	130.8%	7	3.0%
	Southbound	Between W 77th St Ramps	2631	0	0.0%	0	0.0%	0	0.0%	0	0.0%
		Entrance Ramp from W 77th St	301	11	3.7%	37	12.3%	45	15.0%	46	15.3%
		North of W 77th St Ramps	2932	11	0.4%	37	1.3%	45	1.5%	46	1.6%
		North of W 77th St Ramps	2529	224	8.9%	316	12.5%	797	31.5%	19	0.8%
		Exit Ramp to W 77th St	1255	224	17.8%	316	25.2%	797	63.5%	19	1.5%
Between W 77th St Ramps	1274	0	0.0%	0	0.0%	0	0.0%	0	0.0%		
Entrance Ramp from W 77th St	217	2	0.9%	7	3.2%	8	3.7%	8	3.7%		
South of W 77th St Ramps	2529	0	0.0%	0	0.0%	0	0.0%	0	0.0%		
<b>Loop Ramp to Eastbound I-494</b>	<b>1903*</b>	<b>1</b>	<b>0.1%</b>	<b>3</b>	<b>0.2%</b>	<b>4</b>	<b>0.2%</b>	<b>4</b>	<b>0.2%</b>		

Source: WSB & Associates, Inc.

\* Interpolated volume from 2001 count and 2017 forecast

**Table 21-17. P.M. Peak Hour Freeway Growth from Redevelopment**

Freeway Segment		Existing	Scenario 1		Scenario 2		Scenario 3		Scenario 4		
		2007	Dev Trips	% Growth	Dev Trips	% Growth	Dev Trips	% Growth	Dev Trips	% Growth	
I-494	Eastbound	West of E Bush Lake Rd	4205	142	3.4%	144	3.4%	510	12.1%	12	0.3%
		Exit Ramp to E Bush Lake Rd	743	62	8.3%	88	11.8%	222	29.9%	5	0.7%
		Between E Bush Lake Rd Ramps	3462	80	2.3%	56	1.6%	288	8.3%	7	0.2%
		Entrance Ramp from E Bush Lake Rd	614	0	0.0%	0	0.0%	0	0.0%	0	0.0%
		East of E Bush Lake Rd	4076	80	2.0%	56	1.4%	288	7.1%	7	0.2%
		West of France Ave	5653	50	0.9%	15	0.3%	180	3.2%	8	0.1%
		Exit Ramp to France Ave	896	49	5.5%	12	1.3%	176	19.6%	4	0.4%
		Between France Avenue Ramps	4757	1	0.0%	3	0.1%	4	0.1%	4	0.1%
		<b>Entrance Ramp Loop from SB France Ave</b>	797	4	0.5%	15	1.9%	19	2.4%	19	2.4%
	Westbound	Between France Avenue Ramps	5554	5	0.1%	18	0.3%	23	0.4%	23	0.4%
		Entrance Ramp from NB France Ave	496	0	0.0%	0	0.0%	0	0.0%	0	0.0%
		East of France Ave	6064	5	0.1%	18	0.3%	23	0.4%	23	0.4%
		East of France Ave	6373	6	0.1%	17	0.3%	24	0.4%	17	0.3%
		Exit Ramp to France Ave	857	4	0.5%	12	1.4%	17	2.0%	12	1.4%
		Between France Avenue Ramps	5631	2	0.0%	5	0.1%	7	0.1%	5	0.1%
		Entrance Ramp from NB France Ave	624	0	0.0%	0	0.0%	0	0.0%	0	0.0%
		Between France Avenue Ramps	6255	2	0.0%	5	0.1%	7	0.1%	5	0.1%
		Entrance from SB France Ave	774	39	5.0%	60	7.8%	161	20.8%	3	0.4%
		West of France Ave	7029	41	0.6%	65	0.9%	168	2.4%	8	0.1%
TH 100	Northbound	East of Bush Lake Rd	6975	19	0.3%	30	0.4%	80	1.1%	2	0.0%
		Exit Ramp to E Bush Lake Rd	502	0	0.0%	0	0.0%	0	0.0%	0	0.0%
		West of E Bush Lake Rd	6473	19	0.3%	30	0.5%	80	1.2%	2	0.0%
		South of W 77th St Ramps	2723	4	0.1%	11	0.4%	15	0.6%	11	0.4%
		Exit Ramp to W 77th St	79	4	5.1%	11	13.9%	15	19.0%	11	13.9%
	Southbound	Between W 77th St Ramps	2644	0	0.0%	0	0.0%	0	0.0%	0	0.0%
		Entrance Ramp from W 77th St	1181	135	11.4%	208	17.6%	562	47.6%	12	1.0%
		North of W 77th St Ramps	3825	135	3.5%	208	5.4%	562	14.7%	12	0.3%
		North of W 77th St Ramps	1966	20	1.0%	57	2.9%	78	4.0%	54	2.7%
		Exit Ramp to W 77th St	668	20	3.0%	57	8.5%	78	11.7%	54	8.1%
Between W 77th St Ramps	1298	0	0.0%	0	0.0%	0	0.0%	0	0.0%		
Entrance Ramp from W 77th St	433	53	12.2%	82	18.9%	221	51.0%	5	1.2%		
South of W 77th St Ramps	2739	0	0.0%	0	0.0%	0	0.0%	0	0.0%		
<b>Loop Ramp to Eastbound I-494</b>	<b>1731*</b>	<b>15</b>	<b>0.9%</b>	<b>23</b>	<b>1.3%</b>	<b>61</b>	<b>3.5%</b>	<b>1</b>	<b>0.1%</b>		

Source: WSB & Associates, Inc.

\* Interpolated volume from 2001 count and 2017 forecast

**Table 21-18. Future (2014) Freeway Level of Service**

Merge or Ramp Junction Location		2014 No Build				2014 Scenario 3			
		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
		LOS	Density	LOS	Density	LOS	Density	LOS	Density
I-494 Eastbound	Diverge to East Bush Lake Road Exit	B	19.0	B	16.0	C	22.0	B	19.0
	Weave between East Bush Lake Road and TH 100	D	32.6	D	28.2	D	34.4	D	30.0
	Diverge to France Avenue	D	30.0	C	21.0	D	32.0	C	23.0
	Merge from France Avenue	E	37.0	E	38.0	E	37.0	E	38.0
I-494 Westbound	Diverge to France Avenue	D	33.0	D	30.0	D	34.0	D	30.0
	Merge from France Avenue	E	35.0	E	41.0	E	36.0	F	43.0
	Weave between TH 100 and East Bush Lake Road	D	33.2	E	39.8	D	33.3	E	40.3
TH 100 Northbound	Weave between I-494 and West 77th Street	E	35.0	E	37.3	E	39.8	E	37.5
	Weave between West 77th Street and West 70th Street	C	21.6	E	36.4	C	22.3	F	45.1
TH 100 Southbound	Weave between West 70th Street and West 77th Street	B	11.3	D	30.3	D	30.5	D	33.9
	Weave between West 77th Street and I-494	D	32.4	E	40.7	D	32.6	F	44.5

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Source: Year 2017 I-494 CORSIM Forecast Volumes Provided by Mn/DOT and WSB & Associates, Inc.

Note: Based upon criteria shown in **Table 21-3** and **Table 21-4**

## **D. Transit**

Currently there are two forms of transit service within the City of Edina.

### **Paratransit**

Paratransit services are currently provided by Edina Dial-A-Raid Transportation. Door-to-door services provided using a wheelchair lift equipped van on a first-come, first-service basis. Hours of operation are Monday through Friday, 9:00 a.m. to 3:00 p.m., 24-hour advance notice for scheduling is required. The fee is \$3.00 per one-way ride. Anyone living in Edina is eligible.

### **Scheduled Transit**

The key transit facility in Edina is a Southdale transit center. This is part of the Southdale shopping mall. It includes a covered shelter area with routes and schedule information. The Southdale transit center is one of the busier transit centers in the Twin Cities, with eight transit lines which stop and link at this location. There are also 100 parking spaces at a metro transit Park'n Ride lot at this location.

Scheduled transit service for Edina residents is currently provided by Metro Transit ( a division of Metropolitan Council) and by Southwest Metro Transit. The existing scheduled services to Edina residents is depicted on Figure 21-22 and summarized on Table 21-21 below.

**Table 21-21 – Existing Scheduled Transit Service in Edina**

<b>Route Number</b>	<b>Service Route/Area</b>	<b>Service Description</b>
6	Edina (includes Southdale Transit Center), Uptown, downtown Minneapolis, University of Minnesota	High frequency local service, all day/evening, all week; 5-15 minute headways
46	Edina (includes 50 <sup>th</sup> /France), south Minneapolis, St Paul	Local service all day/evening, all week; 30-60 minute headways
114	Edina (includes Southdale Transit Center), south Minneapolis, Uptown University of Minnesota	Commuter/student service during a.m. and p.m. rush hours, weekdays
146	Edina (Vernon Ave.), southwest Minneapolis, downtown Minneapolis	Commuter express (I-35W) service during a.m. and p.m. rush hours, weekdays
152	Edina (includes Southdale Transit Center), Lake Street, University of Minnesota	Commuter/student express (I-35W) service during a.m. and p.m. rush hours, weekdays
515	Edina (Includes Southdale Transit Center), Richfield, South Minneapolis, Bloomington (includes Mall of America), Veterans Medical Center (alternate route)	Local service, all day/evening, all week; 10-30 minute headways
538	Edina (includes Southdale Transit Center), Bloomington (includes Mall of America)	Local service, all day/evening, all week; 30-60 minute headways
539	Edina (includes Southdale Transit Center), Bloomington (includes Normandale Community College, Mall of America)	Local service, all day/evening, all week; 30-60 minute headways
540	Edina, Richfield (includes Best Buy Headquarters), Bloomington (includes Mall of America)	Local service, all day/evening, all week; 15-30 minute headways during a.m./p.m. rush hours, otherwise 30-60 minute

		headways
568	Downtown Minneapolis, south Minneapolis, Edina, Minnetonka (Opportunity Partners)	Weekdays only, one a.m. run from Minneapolis to Opportunity Partners; one p.m. run from Opportunity Partners to Minneapolis
578	Edina (includes Southdale Transit Center), downtown Minneapolis	Commuter express service (TH 62 and I-35W) during a.m. and p.m. rush hours
587	Edina, downtown Minneapolis	Commuter express service (TH 100 and I-394) during a.m. and p.m. rush hours, weekdays
631 (Southwest Metro Transit)	Chanhassen, Eden Prairie, Edina (Southdale Transit Center)	Weekday service, morning through evening; approximately 10 runs per day each direction

Note: all routes are Metro Transit with the exception of 631, which is Southwest Metro Transit.

### **E. Non-Motorized Transportation**

Sidewalks and other pedestrian facilities are important components of Edina’s transportation infrastructure. Sidewalks and paths provide safe movement for individuals of all ages, decrease dependence on motor vehicles, and encourage active lifestyles. An important key to an effective municipal sidewalk system is in providing networking continuity such that there is broad geographic coverage for a range of users without notable gaps. The Gateway Study Area is a critical link in Edina’s non-motorized transportation system.

The City of Edina is currently in the process of updating their transportation plan as part of the 2008 comprehensive plan preparation. As part of that plan, a variety of Travel Demand Management (TDM) and non-motorized vehicle transportation (transit, pedestrian/bike facilities) are being considered. Policies and guidelines for development of these facilities or expanded facilities will be included as part of that document. However, as development continues to grow, specifically in the Gateway Study Area, consideration of site-specific improvements as developments are proposed needs to be included. These would include upgrading the existing bus shelters to become ADA compliant and improvements of sidewalk and/or path connections.

### **F. Transportation Improvements Mitigation Plan**

Based upon the analysis, deficiencies exist for all scenarios near the TH 100/West 77<sup>th</sup> Street Interchange and on France Avenue. Intersection signal timing was first modified to provide optimal operations in each scenario. Mitigation strategies were developed for each scenario are listed below and shown on **Figure 21-21**. The intersection operations with these improvements are shown in **Tables 21-19** and **21-20**.

### **(1) Scenarios 1 and 4**

The following mitigation strategies are needed for Scenario 1 and 4 to accommodate both 2014 and 2030 traffic projections:

- Intersection: France Avenue / West 76<sup>th</sup> Street  
Improvement: Extend one southbound thru lane on France Avenue to create a total of four thru lanes
- Intersection: France Avenue / West 78<sup>th</sup> Street  
Improvement: Eastbound dual right turn lanes on West 78<sup>th</sup> Street  
Southbound lanes approaching the I-494 ramps restriped to provide exclusive lanes to both westbound I-494 and eastbound I-494. The right lane will drop at the westbound I-494 ramp providing an exclusive ramp lane. The second lane will also be an exclusive lane leading to I-494 eastbound, reducing the weaving and stacking of vehicles that occur today. The County has expressed interest in participation.
- Intersection: Edina Industrial Boulevard / West 78<sup>th</sup> Street  
Improvement: Eastbound dual left turn lanes on West 78<sup>th</sup> Street
- Intersection: Edina Industrial Boulevard / Metro Boulevard  
Improvement: Add southbound right turn lane on Metro Boulevard, restriping the existing two southbound lanes to accommodate an exclusive left turn lane, and a thru/left lane, providing dual left turn lanes.  
Add 300 foot eastbound left turn lane on Edina Industrial Boulevard
- Intersection: Northbound TH 100 / West 77<sup>th</sup> Street  
Improvement: Add 150 foot northbound right turn lane on Frontage Road  
Westbound dual right turn lanes on West 77<sup>th</sup> Street

### **(2) Scenario 2**

Scenario 2 will require **all the improvements listed above** in addition to the following:

- Intersection: Minnesota Drive / France Avenue  
Improvement: Dual westbound left turn lanes on Minnesota Drive  
Eastbound dual left turn lanes on Minnesota Drive
- Intersection: Northbound TH 100 / West 77<sup>th</sup> Street  
Improvement: Add 150 foot eastbound right turn lane on West 77<sup>th</sup> Street
- Intersection: Computer Avenue / West 77<sup>th</sup> Street  
Improvement: Northbound dual left turn lanes on Computer Avenue
- Intersection: Minnesota Drive / West 77<sup>th</sup> Street / Johnson Avenue

Improvement: Southbound dual left turn lanes on West 77<sup>th</sup> Street

**(3) Scenario 3**

Scenario 3 will require **all the above improvements listed under Scenarios 1, 2, and 4** in addition to the following:

Intersection: Minnesota Drive / France Avenue  
Improvement: Eastbound dual right turn lanes on Minnesota Drive

Intersection: France Avenue / West 78<sup>th</sup> Street  
Improvement: Westbound dual right turn lanes on West 78<sup>th</sup> Street

Interchange: TH 100 / West 77<sup>th</sup> Street  
Improvement: Six-lane section from Metro Boulevard to Computer Avenue  
Dual left turn turns at both TH 100 Ramps (Hence an eight-lane bridge)

**(4) Transit/Non-Motorized Transportation**

As redevelopment occurs in the Gateway Study Area, consideration of site-specific improvements needs to be included as developments are proposed. These would include upgrading the existing transit facilities, including bus shelters, to become ADA compliant and improving the sidewalk and/or path connections in and around each redevelopment.

**(5) General**

The mitigation measures discussion above (1 – 3) are needed to address full build-out of the site and surrounding area. Specific mitigation measures required for proposed development plans will be established through traffic and transportation studies required for each development proposal. These proposals will need to document compliance with the Final AUAR and Mitigation Plan.

**Table 21-19. Future (2030) A.M. Peak Hour Intersection Level of Service With Mitigation**

Intersection	Traffic Control	2030 A.M. Peak Hour											
		Scenario 1			Scenario 2			Scenario 3			Scenario 4		
		LOS	Delay	Notes	LOS	Delay	Notes	LOS	Delay	Notes	LOS	Delay	Notes
France Ave / W 76th St	Traffic Signal	C	25.5		C	26.0		C	33.6		C	25.0	
Edina Ind Blvd / W 78th St	Traffic Signal	C	24.5		C	24.0		C	29.0		C	23.8	
Edina Ind Blvd / Metro Blvd	Traffic Signal	C	24.6		C	21.0		C	28.6		C	31.0	
SB TH 100 / W 77th St	Traffic Signal	D	44.1		D	53.2		D	52.5		D	46.0	
NB TH 100 / W 77th St	Traffic Signal	C	23.6		C	25.9		C	33.0		C	23.1	
Commercial Access / W 77th St	Traffic Signal	A	4.8		B	12.4		A	9.2		A	4.9	
Computer Ave / W 77th	Traffic Signal	A	6.0		B	11.5		A	7.2		A	6.6	
Parklawn Ave / W 77th St	Traffic Signal	C	29.8		C	23.0		B	17.7		C	27.6	
W 77th St / Minnesota Dr	Traffic Signal	B	14.5		B	11.5		B	11.8		B	16.0	
France Ave / Minnesota Dr	Traffic Signal	C	22.3		C	24.3		D	36.5		C	21.5	
WB I494 / E Bush Lake	Traffic Signal	B	16.3		B	16.9		C	22.7		B	15.2	
EB I494 / E Bush Lake	Traffic Signal	B	17.5		B	17		C	20.8		B	17.7	
American Blvd / E Bush Lake	Traffic Signal	A	9.1		B	12.8		B	11.9		A	8.9	
France Ave / W 78th St-WB I-494 Off Ramp	Traffic Signal	C	22.1		C	29.8		D	49.8		C	22.3	
France Ave / EB I-494 Off Ramp	Traffic Signal	C	33.7		C	33.9		C	31.9		C	32.7	

Source: WSB & Associates, Inc.

Note: Based upon criteria shown in **Table 21-2**

**Table 21-20. Future (2030) P.M. Peak Hour Intersection Level of Service with Mitigation**

Intersection	Traffic Control	2030 P.M. Peak Hour											
		Scenario 1			Scenario 2			Scenario 3			Scenario 4		
		LOS	Delay	Notes	LOS	Delay	Notes	LOS	Delay	Notes	LOS	Delay	Notes
France Ave / W 76th St	Traffic Signal	C	32.4		C	29.3		D	41.6		C	23.7	
Edina Ind Blvd / W 78th St	Traffic Signal	C	33.4		C	33.5		D	36.8		D	35.4	
Edina Ind Blvd / Metro Blvd	Traffic Signal	C	29.3		C	25.6		C	20.5		C	32.9	
SB TH 100 / W 77th St	Traffic Signal	D	44.6		D	42.8		C	30.1		D	50.1	
NB TH 100 / W 77th St	Traffic Signal	C	31.4		D	38.7		C	28.1		C	24.3	
Commercial Access / W 77th St	Traffic Signal	B	12.9		C	21.7		C	29.9		B	16.5	
Computer Ave / W 77th	Traffic Signal	C	20.2		C	22.5		D	44.3		C	24.0	
Parklawn Ave / W 77th St	Traffic Signal	D	38.1		C	33.5		D	48.1		D	41.8	
W 77th St / Minnesota Dr	Traffic Signal	C	31.4		C	25.0		E	58.5		D	40.0	
France Ave / Minnesota Dr	Traffic Signal	D	52.8		D	43.1		C	31.1		D	53.1	
WB I494 / E Bush Lake	Traffic Signal	B	12.1		B	12		B	13.1		B	12.2	
EB I494 / E Bush Lake	Traffic Signal	B	17.8		B	18.9		B	18.3		C	20	
American Blvd / E Bush Lake	Traffic Signal	B	10.5		A	9.6		A	9.9		B	10.9	
France Ave / W 78th St-WB I-494 Off Ramp	Traffic Signal	D	42.7		C	32.7		C	29.3		D	49.1	
France Ave / EB I-494 Off Ramp	Traffic Signal	C	20.2		C	34.2		C	20.6		D	50.5	

Source: WSB & Associates, Inc.

Note: Based upon criteria shown in **Table 21-2**

- 22. VEHICLE-RELATED AIR EMISSIONS. Estimate the effect of the project's traffic generation on air quality, including carbon monoxide levels. Discuss the effect of traffic improvements or other mitigation measures on air quality impacts. Note: If the project involves 500 or more parking spaces, consult *EAW Guidelines* about whether a detailed air quality analysis is needed.**

Based on Mn/DOT project guidance, an air quality analysis is not needed unless the total intersection approach exceeds 77,000 vehicles per day. Under the most intensive development for traffic (Scenario 3), the projected total approach traffic at the busiest intersection France Avenue / Minnesota Drive is approximately 42,700 vehicles per day, or approximately 45 percent below the volume warranting an air quality analysis. Therefore, air quality analysis is not needed.

- 23. STATIONARY SOURCE AIR EMISSIONS. Describe the type, sources, quantities and compositions of any emissions from stationary sources of air emissions such as boilers, exhaust stacks or fugitive dust sources. Include any hazardous air pollutants (consult *EAW Guidelines* for a listing), any greenhouse gases (such as carbon dioxide, methane, and nitrous oxides), and ozone-depleting chemicals (chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons or sulfur hexafluoride). Also describe any proposed pollution prevention techniques and proposed air pollution control devices. Describe the impacts on air quality.**

*AUAR Guidance: This item is not applicable to an AUAR. Any stationary air emission source large enough to merit environmental review requires individual review. These types of uses are not anticipated within the Study Area.*

- 24. ODORS, NOISE, and DUST Will the project generate odors, noise or dust during construction or during operation?  Yes  No**  
**If yes, describe sources, characteristics, duration, quantities or intensity and any proposed measures to mitigate adverse impacts. Also identify locations of nearby sensitive receptors and estimate impacts on them. Discuss potential impacts on human health or quality of life. (Note: fugitive dust generated by operations may be discussed at item 23 instead of here.)**

*AUAR Guidance: Dust, odors, and construction noise need not be addressed. Traffic-related noise is included in the analysis along with a dust and noise mitigation plan.*

#### **A Construction Noise**

Noise will be generated during construction of any project within the Study Area by construction equipment. Construction noise will be a temporary impact and may be controlled by limiting construction activities to daytime hours in accordance with Edina's ordinances and assuring that construction equipment is properly muffled. The City generally prohibits construction work between 9:00PM and 7:00AM Monday through Friday and between 7:00PM and 8:00AM on Saturday, Sunday, and holidays.

**B. Traffic-Related Noise**

State standards have been developed for maximum sound levels in residential and commercial areas. By comparing existing and estimated future sound levels to these standards, areas can be recognized that are in need of possible noise mitigation.

The analysis that follows characterizes existing traffic noise levels in the Study Area, assesses the effect of redevelopment of the Study Area on future noise levels, and analyzes potential mitigation measures. The noise analysis consisted of selecting specific receptor sites and modeling existing and future noise levels. Analyzed receptor sites consist of the outdoor areas of residential and commercial properties.

**Noise Analysis Methodology**

Noise is defined as any unwanted sound. Sound travels in a wave motion and produces a sound pressure level. This sound pressure level is commonly measured in decibels. Decibels represent the logarithmic measure of sound energy relative to a reference energy level. For highway traffic noise, an adjustment, or weighting, of the high- and low-pitched sounds is made to approximate the way that an average person hears sounds. The adjusted sound levels are stated in units of "A-weighted decibels" (dBA). A sound increase of three dBA is barely perceptible to the human ear, a five dBA increase is clearly noticeable, and a 10 dBA increase is heard twice as loud. For example, if the sound energy is doubled (e.g. the amount of traffic doubles), there is a three dBA increase in noise, which is just barely noticeable to most people. On the other hand, if traffic increases by a factor of 10 so that it produces 10 times the sound energy level over a reference level, then there is a 10 dBA increase, and the human ear hears it as twice as loud.

In Minnesota, traffic noise impacts are evaluated by measuring and/or modeling the traffic noise levels that are exceeded 10 percent and 50 percent of the time during the hour of the day and/or night that has the heaviest traffic. These numbers are identified as the L<sub>10</sub> and L<sub>50</sub> levels. The L<sub>10</sub> value is compared to FHWA noise abatement criteria.

The following chart provides a rough comparison of the noise levels of some common noise sources.

<u>Sound Pressure Level (dBA)</u>	<u>Noise Source</u>
140-----	Jet Engine (at 25 meters)
130-----	Jet Aircraft (at 100 meters)
120-----	Rock and Roll Concert
110-----	Pneumatic Chipper
100-----	Jointer/Planer
90 -----	Chainsaw
80 -----	Heavy Truck Traffic
70 -----	Business Office
60 -----	Conversational Speech
50 -----	Library
40 -----	Bedroom

30 -----Secluded Woods  
 20 -----Whisper

Source: "A Guide to Noise Control in Minnesota," Minnesota Pollution Control Agency, <http://www.pca.state.mn.us/programs/pubs/noise.pdf> and "Highway Traffic Noise," FHWA, <http://www.fhwa.dot.gov/environment/htnoise.htm>.

Along with the volume of traffic and other factors (i.e., topography of the area and vehicle speed) that contribute to the loudness of traffic noise, the distance of a receptor from a sound's source is also an important factor. Sound levels decrease as distance from a source increases. The following rule of thumb regarding sound decreases due to distance is commonly used. Beyond approximately 50 feet, each time the distance between a line source (such as a road) and a receptor is doubled, sound levels decrease by three decibels over hard ground, such as pavement or water, and by four and one half decibels over vegetated areas.

The MPCA has established State Noise Standards specifically for daytime and nighttime periods. For residential land uses including apartments, churches, and schools (Noise Area Classification 1 or NAC-1), the Minnesota State standards for L<sub>10</sub> are 65 decibels for daytime and 55 decibels for nighttime; the standards for L<sub>50</sub> are 60 decibels for daytime and 50 decibels for nighttime. For commercial land uses (NAC-2), the Minnesota State Standards for L<sub>10</sub> are 70 decibels for daytime and nighttime; the standards for L<sub>50</sub> are 65 decibels for daytime and nighttime. Minnesota State Noise Standards are shown in **Table 24-1**. In addition to the identified noise criteria, Mn/DOT also defines a noise impact as a "substantial increase" if the future noise levels increase five dBA or greater.

**Table 24-1**  
**Minnesota State Noise Standards**

<i>Land Use</i>	<i>Code</i>	<i>Day (7 a.m. – 10 p.m.) dBA</i>		<i>Night (10 p.m. – 7 a.m.) dBA</i>	
		<i>L<sub>10</sub> of</i>	<i>L<sub>50</sub> of</i>	<i>L<sub>10</sub> of</i>	<i>L<sub>50</sub> of</i>
<i>Residential</i>	<i>NAC-1</i>	<i>L<sub>10</sub> of 65</i>	<i>L<sub>50</sub> of 60</i>	<i>L<sub>10</sub> of 55</i>	<i>L<sub>50</sub> of 50</i>
<i>Commercial</i>	<i>NAC-2</i>	<i>L<sub>10</sub> of 70</i>	<i>L<sub>50</sub> of 65</i>	<i>L<sub>10</sub> of 70</i>	<i>L<sub>50</sub> of 65</i>
<i>Industrial</i>	<i>NAC-3</i>	<i>L<sub>10</sub> of 80</i>	<i>L<sub>50</sub> of 75</i>	<i>L<sub>10</sub> of 80</i>	<i>L<sub>50</sub> of 75</i>

**Noise Analysis**

Traffic noise impacts were assessed by modeling noise levels at six receptor sites. One of the sites is located in an existing residential development (R1). The other receptors are located in areas that have planned development: two in residential areas (R1 and R2) and three in a commercial area (R4, R5, and R6). Locations were selected where buildings are likely to be placed. Receptor locations are shown on **Figure 24-1** in **Appendix A**. All receptor sites, except the business sites, are classified within the definition of State of Minnesota NAC-1. The business receptor sites are classified within the definition of State of

Minnesota NAC-2. However it should be noted that only State roadways are regulated by the State Noise Standards. Receptors 3-6 sites were evaluated near county and city roads even though these locations are exempt. It is optional at these locations for local jurisdictions to require noise abatement.

Noise modeling was done using the noise prediction program “MINNOISE”, a version of the FHWA “STAMINA” model adapted by Mn/DOT. This model uses vehicle numbers, speed, class of vehicle, and the typical characteristics of the roadway being analyzed. The vehicle class percentages used for all roadways were as follows: 94 percent automobiles and light trucks; four percent medium trucks, and two percent heavy trucks. Posted speed limits were used to model proposed build conditions.

Noise monitoring and modeling results for residential and commercial receptors for existing (2007) and year 2030 conditions are presented in **Tables 24-2** and **24-3**. Residential locations are represented by the bold-italic numbers. Areas shaded in gray denote deficiencies in current and future conditions. State standards were exceeded in the a.m. and p.m. hours for Scenario 4. Receptor 2 does not meet state standards for residential uses. This site is located on the southeast quadrant of TH 100/West 77<sup>th</sup> Street. However, the noise levels did not have a substantial increase (less than 1.5 dBA). The deficiencies are due to the change in use from commercial to residential. All other locations remain below State Noise Standards or do not have substantial increase in noise.

**Table 24-2. A.M. Noise Levels**

Receptor	2007		2030							
			Scenario 1		Scenario 2		Scenario 3		Scenario 4	
	L <sub>10</sub>	L <sub>50</sub>								
1	51.1	45.9	52.2	47.7	52.4	48.0	52.8	48.5	<b>52.5</b>	<b>48.2</b>
2	65.1	59.7	65.8	60.8	65.8	60.8	65.9	60.9	<b>66.1</b>	<b>61.1</b>
3	53.8	43.2	55.1	44.9	55.3	45.1	55.5	45.4	55.1	44.9
4	46.3	38.1	47.4	39.6	47.5	39.7	47.8	40.0	47.4	39.6
5	46.4	33.0	47.7	34.5	47.8	34.6	48.1	34.9	47.7	34.5
6	58.5	37.1	59.7	38.8	<b>59.9</b>	<b>39.1</b>	60.3	39.6	<b>59.7</b>	<b>38.8</b>
<i>Residential State Standards</i>	<b>65</b>	<b>60</b>								
Commercial State Standards	70	65	70	65	70	65	70	65	70	65

Source: WSB & Associates, Inc.

Notes: Shading notes areas with deficiencies.

Numbers in italic and bold contain residential land uses.

**Table 24-3. P.M. Noise Levels**

Receptor	2007		2030							
			Scenario 1		Scenario 2		Scenario 3		Scenario 4	
	L <sub>10</sub>	L <sub>50</sub>								
1	58.5	37.1	59.0	38.1	59.0	38.1	59.1	38.2	<i>59.0</i>	<i>38.1</i>
2	63.3	56.4	63.7	57.3	63.7	57.3	63.7	57.3	<b>63.7</b>	<b>57.3</b>
3	65.4	62.2	65.9	63.2	65.9	63.2	65.9	63.2	65.9	63.2
4	62.3	61.1	62.8	62.1	62.8	62.1	62.8	62.1	62.8	62.1
5	46.4	33.0	46.9	33.9	46.9	33.9	47.0	34.0	46.9	33.9
6	51.9	48.5	52.3	49.4	<b>52.4</b>	<b>49.5</b>	52.4	49.6	<b>52.3</b>	<b>49.4</b>
<i>Residential State Standards</i>	<i>55</i>	<i>50</i>								
Commercial State Standards	70	65	70	65	70	65	70	65	70	65

Source: WSB & Associates, Inc.

Notes: Shading notes areas with deficiencies.

Numbers in italic and bold contain residential land uses.

**Noise Mitigation**

Noise mitigation will be necessary if any residential units are constructed near Receptor 2, located in the southwest quadrant of TH 100/West 77<sup>th</sup> Street. Any residential buildings should be constructed using noise abatement methods.

**C. Dust**

During construction, particulate emissions will temporarily increase due to the generation of fugitive dust. Construction dust and exhaust from construction equipment may have a temporary impact on air quality. Control of construction dust is addressed through the NPDES Construction Permit and erosion and sediment control. **Item 16** provides more information about erosion and sediment control for the Study Area. Fugitive dust after redevelopment is complete in the Study Area is anticipated to be minimal as there will be no facilities that will generate significant amounts of dust and these areas will be stabilized.

Wetting areas under construction will control fugitive dust. After construction is complete, dust levels are anticipated to be minimal because all soil surfaces would be in permanent cover (i.e., pavement or grassed areas).

**D. Odors**

The construction and/or operation within the Study Area is not anticipated to involve any processes that would generate any odors.

**E. Odors, Noise, and Dust Mitigation Measures**

- During construction activities, the project proposer and contractor shall observe all dust control Best Management Practices for fugitive dust.
- Edina will limit construction activities and any other activities that produce noise audible outside the perimeter of a property to between 7:00AM to 9:00PM Monday through Friday and between 8:00AM and 7:00PM on Saturday, Sunday, and holidays.
- Noise mitigation will be necessary if any residential units are constructed near Receptor 2, located in the southwest quadrant of TH 100/West 77<sup>th</sup> Street. Any residential buildings should be constructed using noise abatement methods. Noise abatement requirements to conform to state standards can be found in Minn. Rules 7030.0050, subp. 3

**25. NEARBY RESOURCES. Are any of the following resources on or in proximity to the site?**

- a. Archaeological, historical, or architectural resources?  Yes  No
- b. Prime or unique farmlands or land within an agricultural preserve?  Yes  No
- c. Designated parks, recreation areas, or trails?  Yes  No
- d. Scenic views and vistas?  Yes  No
- e. Other unique resources?  Yes  No

**If yes, describe the resource and identify any project-related impacts on the resource. Describe any measures to minimize or avoid adverse impacts.**

**Archaeological, historical, or architectural resources**

Information from the State Historic Preservation Office (SHPO) has been obtained and is contained in **Appendix B**. Based on the SHPO database review, there are no archaeological sites or historic structures identified in the Gateway Study Area. Due to the lack of water bodies and lack of viewshed, it is unlikely that this area would contain any archaeological resources.

A preliminary heritage resource assessment was completed by Edina’s Preservation Consultant for the Pentagon Towers and Quads sites. The summary of the findings are included in **Appendix B**. These findings indicate that the Pentagon Towers and Quads are an early example of a planned office park in the Twin Cities and that these sites have the potential for consideration as a heritage resource to Edina. The information states that the Pentagon Towers and Quads sites have Modernist-influenced architectural and landscape components. While it is anticipated that these structures do not represent the only remaining example of this style, due to the consideration for these sites as a potential heritage resource to Edina, additional documentation of the Pentagon Towers and Quads sites should be provided prior to redevelopment the sites.

**Prime or unique farmlands**

The Gateway Study Area is currently fully developed and not utilized for agricultural purposes.

**Designated parks, recreation areas, or trails**

Fred Richards Golf Course is a public golf course operated by Edina immediately north of the Gateway Study Area. The golf course is not anticipated to be impacted as a result of the proposed redevelopment scenarios. Trails and sidewalks are addressed in **Item 21**.

**Scenic views and vistas**

There are no significant views or vistas within the Gateway Study Area.

**Nearby Resources Mitigation Plan**

- Prior to redevelopment of the Pentagon Towers and Quads sites that would require razing of the existing structures, an evaluation and documentation of the historical and architectural significance of the sites will be needed by the project proposer. This information shall be submitted to Edina by the project proposer.

**26. VISUAL IMPACTS. Will the project create adverse visual impacts during construction or operation? Such as glare from intense lights, lights visible in wilderness areas and large visible plumes from cooling towers or exhaust stacks?**  
 Yes  No  
**If yes, explain.**

Only routine visual impacts associated with construction of typical commercial and residential land uses are anticipated by redevelopment within the Study Area. Building heights have the potential to range from one to 14 stories, depending on the type of land use. If the proposed building heights do not meet Edina City Code, a variance from the requirements will need to be obtained from the project proposer or the developer could seek to change the City Code.

**Visual Impacts Mitigation Plan**

- If components of a proposed project exceed Edina City Code requirements, variances from the City’s requirement will need to be applied for by the developer. The City will review these variance requests and make a determination as to the approval or denial of the project as part of the review process. A project proposer could also seek to amend the City Code. This request would also be reviewed by the City.

**27. COMPATIBILTY WITH PLANS AND LAND USE REGULATIONS. Is the project subject to an adopted local Comprehensive Plan, land use plan or regulation, or other applicable land use, water, or resource management plan of a local, regional, state or federal agency?  Yes  No**  
**If yes, describe the plan, discuss its compatibility with the project and explain how any conflicts will be resolved. If no, explain.**

### **Existing Conditions**

Edina has an existing Comprehensive Plan that was completed in 1999. Of the four scenarios developed as part of this Final AUAR, Scenario 2, Scenario 3, and Scenario 4 would each require modifications to the Comprehensive Plan to allow the land uses that are being proposed. Redevelopment under Scenario 1 can be completed without a Comprehensive Plan amendment. Edina's existing Comprehensive Plan is in conformance with the requirements of Minnesota Rule 4410.3610, subpart 1. Any Comprehensive Plan amendments or updates would need to be in conformance with the requirements of Minnesota Rules 4410.3610, subp. 1.

Edina is in the process of updating its Comprehensive Plan during 2007. This Plan is expected to be completed by early 2008, and will be in conformance with the Metropolitan Land Planning Act requirements. The Comprehensive Plan update could include the land uses outlined in any of the scenarios analyzed in the AUAR.

Redevelopment within the Gateway Study Area is subject to the standards, policies, regulations, and ordinances approved by Edina. These plans include:

- City of Edina Comprehensive Plan
- City of Edina Comprehensive Water Supply Plan
- City of Edina Comprehensive Sewer Plan
- City of Edina Comprehensive Transportation Plan
- City of Edina Water Resource Management Plan
- City of Bloomington Water Supply Plan
- Nine Mile Creek Watershed District Plan

### **Impacts of Development Scenarios 1 through 4**

**Scenario 1:** Scenario 1 represents Edina's existing Comprehensive Plan (1999). The densities analyzed in this scenario represent the average density allowed by the Comprehensive Plan. No Comprehensive Plan amendments or updates would be necessary for redevelopment to proceed as outlined in this scenario.

**Scenario 2:** Scenario 2 contains a "master plan" scenario submitted by an interested Developer. The Developer is planning to redevelop the Pentagon Towers and Pentagon Quads site as shown in **Figure 5-3**. This scenario would require these two areas of the Gateway Study Area to be rezoned for mixed use development that includes senior residential, commercial, retail, office space, as well as a hotel. These land uses are consistent with other areas immediately adjacent to the Developer's parcels on the west, south, and north. Due to the introduction of residential land use, a Comprehensive Plan amendment would be required. All other uses in the Gateway Study Area would remain the same as Scenario 1.

**Scenario 3:** Scenario 3 involves converting the Pentagon Towers and Pentagon Quads site noted in Scenario 2 to commercial use. All other uses in the Gateway Study Area would remain the same as Scenario 1. According to the Edina City Code, a Planned Commercial District and a Planned Office District have the same requirements for density. A commercial

district generally has more retail space, which will result in the need for a Comprehensive Plan amendment.

**Scenario 4:** Scenario 4 involves converting the Pentagon Towers and Pentagon Quads sites to some office with more residential land uses. All other uses in the Gateway Study Area would remain the same as Scenario 1. This scenario represents more residential uses within the Pentagon Towers and Pentagon Quads site and would require a Comprehensive Plan amendment for these areas.

For Scenarios 2, 3, and 4 that would require a Comprehensive Plan Amendment, the process is a two-step process through the Planning Commission, Zoning Board of Appeals and Edina City Council.

The first step would be an application for a comprehensive guide plan change, rezoning, preliminary development plan, and variances if needed. This process would take 90-120 days. It would include the following meetings:

1. Review and recommendation by the Planning Commission on the guide plan change, rezoning and preliminary development plan.
2. Review and final action on variances by the Zoning Board of Appeals.
3. Review and final action by the Edina City Council on the guide plan change, rezoning and preliminary development plan.

The second step would be a final development plan review. This step would take another 60-120 days. This would include the following meetings:

1. Review and recommendation by the Planning Commission.
2. Review and final action by the Edina City Council.

#### **Plan Compatibility Mitigation Plan**

- The proposed change in land use of Scenarios 2, 3, and 4 at the Pentagon Towers and Pentagon Quads site will require a Comprehensive Plan Amendment.

**28. IMPACT ON INFRASTRUCTURE AND PUBLIC SERVICES. Will new or expanded utilities, roads, other infrastructure or public services be required to serve the project?**

Yes  No

**If yes, describe the new or additional infrastructure or services needed. (Note: any infrastructure that is a connected action with respect to the project must be assessed in the EAW; see *EAW Guidelines* for details.)**

#### **Municipal Sewer, Water, Storm Water, and Transportation Services**

Edina intends to provide municipal services to the area. This municipal infrastructure includes sanitary sewer, water, storm water management and transportation improvements. These items are discussed in the previous items as indicated:

- Municipal Water System Improvements – See Item 13
- Storm Water Management Improvements – See Item 17
- Sanitary Sewer Improvements – See Item 18
- Transportation System Improvements – See Item 21

### **Police and Fire Department**

Redevelopment in this area will also have an impact on social services such as schools, police, fire, and community activities. Edina has its own police and fire department with approximately 30 full-time firefighters, 14 volunteer paid-on-call firefighters, and approximately 39 police officers. These services will be provided to the Gateway Study Area.

### **School System**

The Gateway Study Area is located within Independent School District #273. Since the major type of residential units being proposed are for senior citizens, no significant impact on the increase in the number of students within the School District is anticipated.

## **29. CUMULATIVE IMPACTS.**

**Minn. R. 4410.1700, subp. 7, item B requires that the RGU consider the “cumulative potential effects of related or anticipated future projects” when determining the need for an environmental impact statement. Identify any past, present or reasonably foreseeable future projects that may interact with the project described in this EAW in such a way as to cause cumulative impacts. Describe the nature of the cumulative impacts and summarize any other available information relevant to determining whether there is potential for significant environmental effects due to cumulative impacts (or discuss each cumulative impact under appropriate item(s) elsewhere on this form).**

The Gateway Study Area and its surroundings are within a first-ring suburb of Minneapolis that is generally fully developed. Cumulative impacts will generally be driven by either individual parcel redevelopment or area-wide redevelopment. To analyze cumulative impacts for the Gateway Study Area, information from both Edina and Bloomington was obtained related to known or approved redevelopment projects within or near the TH 100 and I-494 area. **Table 29-1** summarizes the known redevelopment plans in the area and **Figure 29-1** shows the location of these projects. This Final AUAR includes these redevelopment projects in the analysis throughout the document to analyze the cumulative impacts of redevelopment in the area.

Within Edina, there are five areas that have approved redevelopment plans. These include the Cypress Development, the Target site, the Westin site, York Place Development, and TE Miller Development. These redevelopments will create an additional net increase of 86,750 square feet of retail and office space and add a hotel and 165 units of condominiums/apartments. To the south of the Gateway Study Area, a number of parcels are undergoing redevelopment within

Bloomington. These projects will redevelop into a number of office, commercial, retail, restaurants, hotel, and parking facilities.

While there are no other known specific projects, additional redevelopment activities in the vicinity of the Gateway Study Area, mainly to the west, south, and east, can reasonably be expected. This area of the Twin Cities experienced significant growth during the 1960's, and as buildings become older, their functions become obsolete in a changing socioeconomic environment. As businesses continue to improve their facilities to meet customer demands, older buildings become less attractive options for purchase or rental of office space. As such, these buildings are removed and replaced with newer buildings. As the general population of Edina continues to age, there will be an increasing need for senior housing, especially in mixed-use developments where acquisition of personal goods and services do not require driving.

Edina is a first-ring suburb and the general redevelopment in infill in the City is anticipated. The cumulative impact of this redevelopment is outlined below:

- Since redevelopment within Edina would occur in areas that are currently developed, minimal impact on wildlife resources is expected as part of any cumulative impacts.
- New storm water management regulations will affect most future redevelopment that were not required when areas were developed in the 1960's and as such, improved storm water treatment can be anticipated.
- Upgrades to existing municipal sewer and water infrastructure may be needed with redevelopment in the infill area, but this would need to be analyzed on a case-by-case basis.
- Improvements to the transportation infrastructure are likely to also be needed to accommodate the growing commuting population in the area. Edina is updating its Transportation Plan to plan for future redevelopment and transportation needs. Additionally, Mn/DOT has long-term plans to reconstruct I-494 and TH 100 interchange.

It is likely that other redevelopment in the regional area will reflect similar land uses as presented in this report. Depending on the redevelopment size, the need to acquire zoning variances or rezoning, and the adjacent infrastructure facilities, additional study may be necessary to address future impacts as a result of these future redevelopment scenarios.

While potential future redevelopment within Bloomington along the I-494 corridor may occur, there are no specific approved plans for that area other than those included in the AUAR analysis already. Edina cannot speculate on future Bloomington redevelopment for this area that is not currently approved or certain. However, it is anticipated that redevelopment will likely have an impact on the transportation infrastructure in both cities. Therefore, to address potential cumulative impacts associated with growth on the transportation system, Edina will work with Bloomington and potentially participate in a regional traffic study that will assist in anticipating

future potential redevelopment within the TH 100/I-494 area and plan for infrastructure improvements.

**Table 29-1. Current Adjacent Redevelopment Proposals**

<i>City</i>	<i>Development</i>	<i>Summary of Impacts</i>
<i>Bloomington</i>	<i>Duke-Weeks Realty Limited Partnership</i>	Phase 1 Completed, Phase 2 to add 332,000 ft <sup>2</sup> of office space by 2008. Phase 3 and Phase 4 have not received approval
	<i>Walser Real Estate II, LLC</i>	Proposed Development Approved for 207,500 ft <sup>2</sup> of office space and 86,000 ft <sup>2</sup> of retail. Recently expanded to surface parking lot for car dealer inventory.
	<i>United Properties</i>	Addition of 200,000 ft <sup>2</sup> of medical office space approved for expansion by 2008.
	<i>Ryan Companies US, Inc.</i>	Approved 750,000 ft <sup>2</sup> of office space. 240,000 ft <sup>2</sup> has been constructed. Resubmittal for Phase 2 and Phase 3 anticipate a reduced total of 697,000 ft <sup>2</sup>
	<i>Mortenson Development, Inc.</i>	256 room hotel and adjoining restaurant currently under construction
	<i>Normandale Investments, LLC</i>	122 space parking ramp to meet demand for existing offices
	<i>United Properties</i>	285,000 square foot office building at 8200 Norman Center Drive
<i>Edina</i>	<i>Cypress Properties</i>	Redevelopment of 40,000 ft <sup>2</sup> of a movie theater to 86,000 ft <sup>2</sup> of retail development
	<i>Target</i>	Approved increase of retail space from 154,000 ft <sup>2</sup> to 196,500 ft <sup>2</sup> by 2008.
	<i>Westin</i>	Approved construction of an 18 story building with 79 condominiums, a 225 room hotel, and 7,000 ft <sup>2</sup> restaurant
	<i>York Place Development</i>	Approved construction of 49,000 ft <sup>2</sup> of retail space and 86 senior apartments. Replaces 52,750 ft <sup>2</sup> of office space.
	<i>TE Miller Development (7380 France Office)</i>	Net increase of 2,000 gsf of office space

### **Cumulative Impacts Mitigation Plan**

- Edina will work with Bloomington and potentially participate in a regional traffic study that will assist in anticipating future potential redevelopment within the TH 100/I-494 area and plan for infrastructure improvements.

Edina will also coordinate with other entities to address cumulative impacts. These items have been addressed in other areas of the AUAR and include mitigation plan items D1, D6, E8, F1, and F2.

**30. OTHER POTENTIAL ENVIRONMENTAL IMPACTS. If the project may cause any adverse environmental impacts not addressed by items 1 to 28, identify and discuss them here, along with any proposed mitigation.**

There are no other potential environmental impacts known at this time.