



# FINAL ALTERNATIVE URBAN AREA REVIEW

## OPUS STUDY AREA

MINNETONKA, MN

DECEMBER 2020

Prepared for:  
City of Minnetonka  
14600 Minnetonka Blvd.  
Minnetonka, MN 55345

WSB PROJECT NO. 015490-000



**FINAL ALTERNATIVE URBAN AREAWIDE REVIEW  
OPUS AREA**

**Prepared For:**

**CITY OF MINNETONKA**

**December 2020**

**By:**



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## I. EXECUTIVE SUMMARY

### 1) INTRODUCTION/BACKGROUND

The Opus Study Area is approximately 580 acres located in the southeastern corner of the City of Minnetonka that is general bounded by TH 62 and the City of Eden Prairie to the south, TH 169 and the City of Edina to the east, Smetana Road and the City of Hopkins to the north, and Shady Oak Road (Hennepin County Road 61) and the western edge of Section 36 to the west (**Figure 5-1 to 5-3**).

The Opus AUAR includes the review of two development scenarios. Scenario 1 is generally consistent with the City's 2040 Comprehensive Plan and Scenario 2 is reflects land use development that is more intense than Scenario 1 and that would be supported by the construction of the Opus Station of the Green Line Light Rail Transit (LRT). A description of each scenario's type and intensity of development follows:

#### **Scenario 1 (Figure 6-1)**

Scenario 1 contains developments of medium density residential (i.e. townhomes), high density residential (i.e. apartments and condominiums), commercial (i.e. restaurants, retail, daycare, etc.), two hotels, industrial (i.e. bulk warehousing and light manufacturing), institutional (i.e. schools and cemeteries), offices, and research and development. Scenario 1 also contains the Opus Station and right-of-way for the Green Line LRT, park/open spaces, open water, and road right-of-way. The land use intensity of Scenario 1 is consistent with the 2040 Comprehensive Plan.

This scenario includes the construction of the Opus Transit Station along the Green Line LRT which would provide a transit connection with Eden Prairie to the south and west and to the Minneapolis Downtown to the north and east. There is one planned new north-south running public roadways that would be constructed to the east of the LRT line and west of Green Oak Drive within the study area that connects Bren Road West to Bren Road East. Some intersection improvements are described within the traffic mitigation section of this AUAR (Section 18.c.).

Medium density residential land is located east of Shady Oak Road and south of Bren Road while high density residential is scattered throughout the study area. The commercial uses are planned in the southwest corner of the study area nearest the interchange of Shady Oak Road and TH 62. The industrial land uses are planned in three general areas of the northwest corner, northeast corner, and along Bren Road East/Blue Circle Drive/Red Circle Drive. The office uses are generally located in the center of the study area, as well as the eastern and southern edges of the study area near the frontages of TH 169 and TH 62. The research and development land uses are located north of Bren Road West and east of Feltl Road. Scenario 1 accommodates a future population of approximately 3,550 people and about 16,500 jobs.

#### **Scenario 2 (Figure 6-2)**

Scenario 2 contains developments of medium density residential (i.e. townhomes), high density residential (i.e. apartments and condominiums), commercial (i.e. restaurants, retail, daycare, etc.), two hotels, industrial (i.e. bulk warehousing and light manufacturing), institutional (i.e. schools and cemeteries), offices, and research and development. Scenario 2 also contains the Opus Station and right-of-way for the Green Line LRT, park/open spaces, open water, and road right-of-way.

This scenario includes the roadway improvements and construction of the Opus Transit Station along the Green Line LRT just like Scenario 1. Some intersection improvements are described within the traffic mitigation section of this AUAR (Section 18.c.).

To take advantage of transit orientated designs afford by the construction of the Opus Station, Scenario 2 increases the office and high-density residential land uses' acreages and intensities. The additional office and high-density residential land uses increases generally result in reductions in the industrial land uses.

The medium density residential land is located east of Shady Oak Road and south of Bren Road, the same as in Scenario 1. The high density residential is planned to be scattered throughout the study area while there are an additional 12 parcels planned for redevelopment into high density residential in the south-central portion of the study area. The commercial uses are planned in the southwest corner of the study area nearest the interchange of Shady Oak Road and TH 62, the same as in Scenario 1. The industrial land uses are located in two general areas of the northwest corner and northeast corner, while one parcel southwest corner of the Bren Road East and Yellow Circle Drive remains industrial. The office uses are generally located in the center of the study area, as well as the eastern and southern edges of the study area near the frontages of TH 169 and TH 62. The research and development land uses are located north of Bren Road West and east of Feltl Road. Scenario 2 accommodates a future population of approximately 7,350 people (about 3,800 more people than Scenario 1) and about 22,200 jobs (about 5,700 more jobs than Scenario 1).

Areas of traditional suburban growth have emerged over the past 45 years within the study area and surrounding areas. The development patterns in these areas are consistent with development patterns found in southwestern Hennepin County within the I-494 and I-694 loop. **Table 9-1** displays the existing mix of uses within the study area. **Table 9-2** displays the uses of Scenario 1 which closely follows the implementation of the 2040 Comprehensive Plan and is described in more detail in Section 6.a. **Table 9-3** displays the uses of Scenario 2 which intensifies the high-density residential and offices uses as compared to Scenario 1 to maximize the investment of the LRT transit line and station within the study area and is described in more detail in Section 6.a.

### **Existing Parks, Trails and Recreational Areas within Opus**

#### **Existing Trails**

The existing trails within the Opus project boundary include six miles of shared-used paved trails throughout the campus. Most trails are separated from vehicle traffic with a series of road underpasses. The existing trail loops through open spaces and ponds are popular with residents and employees at the campus. Other existing local trails, including those along Shady Oak Road, connect into the Opus property from the surrounding cities of Hopkins, Edina and Eden Prairie. Refer to **Figure 9.3** for the Existing and Planned Trail Network Map.

#### **Existing Parks**

The only existing public park within the Opus project boundary includes the 8.6-acre Green Circle Park, owned and managed by the City of Minnetonka. The park includes a picnic shelter, tables, and paved trails around Annie's Pond with benches for seating. The trail connects to the extensive paved trail network within the Opus campus. The City of Minnetonka also owns a 48-acre open space with wetlands on the north portion of the Opus campus.

## **2) INFRASTRUCTURE PLANNED TO SERVE THE DEVELOPMENT**

If future development occurs as proposed under Scenarios 1 or 2, new or reconstructed utilities, roads and other infrastructure will be needed to serve the AUAR area. The Comprehensive Plan and this AUAR identify the infrastructure needed to support the varying levels of development identified in the Scenarios. Infrastructure needs are discussed in greater detail under the response to AUAR Items: 11.B.i. – Water Resources – Wastewaters, 11.B.ii. – Water Resources – Surface Water Runoff, 11.B.iii. – Water Resources – Water Appropriations and 21 – Traffic.

### 3) **ANTICIPATED DEVELOPMENT STAGING**

The City is required to update its Comprehensive Plan decennially. The 2050 Comprehensive Plan will determine if there will be additional development stages within the study area. The 2050 Comprehensive Plan is expected to be completed in 2029.

In anticipation of the construction of the LRT transit line and station within the study area, a number of high-density residential and mixed-use development have been proposed and/or constructed within the study area. Environmental reviews required for those development that met the mandatory EQB thresholds. All developments recently completed or under construction have been included in the existing conditions analysis.

## II. SUMMARY OF MITIGATION MEASURES

Pursuant to Minnesota Rules, mitigation measures have been developed as part of the AUAR. These measures would apply to any proposed development that may occur over time within the study area.

### 1) **Compatibility with Land Use Regulations Mitigation Plan**

- i. If the Opus study area develops as shown in Scenario 2, an amendment to the City of Minnetonka's Comprehensive Plan will need to be prepared and approved.

### 2) **Contamination/Hazardous Materials/Wastes Mitigation Plan**

- i. If contamination is encountered during project grading or development, grading activities will be suspended until material can be characterized and then disposed on in conformance with state requirements.
- ii. The municipal waste hauler company will make residential and commercial recycling programs available to the area. General municipal waste will be removed by these waste hauler companies.
- iii. Hazardous waste spills will be reported immediately to emergency response agencies via emergency dispatch service and addressed in conformance with state requirements.
- iv. For all gas stations with underground tanks, annual licensing from the MPCA will be needed.
- v. Any business or institutional uses that use or store petroleum or other hazardous products will be subject to local and state rules regulating such uses.

### 3) **Wastewater Mitigation Plan**

A secondary forcemain and generator should be installed at the Opus lift station to provide redundancy and backup power generation at a critical system facility.

### 4) **Stormwater Mitigation Plan**

- i. It is anticipated that the constructed and/or modified ponds will continue to be used for stormwater management. It is assumed that these BMPs will provide the required rate control on parcels that will redevelop with equal or reduced impervious coverage, however, it should be noted that volume control will still be required.

The sequencing for proposed volume control BMPs is as follows:

1. Infiltration, including above ground or underground, or stormwater reuse
2. Filtration, including biofiltration or enhanced sand filters
3. Restricted site sequencing:
  - i. Retention of 0.55 inches of runoff from all onsite impervious surfaces
  - ii. Retention of runoff onsite to the maximum extent practicable

- iii. Off-site retention and treatment elsewhere within Nine Mile Creek Watershed or the use of the NMCWD volume-banking program to achieve the required volume control and water quality requirements

## 5) Fish, Wildlife, Plant Communities, and Sensitive Ecological Resources

- i. Implement the Mayor's Monarch Pledge.
- ii. Enforce Section 845.030 including encouraging the use of meadow vegetation and pollinator lawns.
- iii. Wetlands will need to be delineated in conformance with the Wetland Conservation Act as part of the development process. The City of Minnetonka will review and verify the wetland delineation.
- iv. Wetland impact is anticipated to be minimized to the maximum extent practical and feasible throughout the review area. If wetland impacts are proposed, wetland mitigation will be required of the project proposer pursuant to current wetland regulations and City requirements.
- v. Nine Mile Creek Watershed District will require buffers around wetlands at a width dependent upon the wetland's management classification, per their rules.
- vi. Storm water management features should incorporate native plantings of grasses, pollinator species, trees, and shrubs.
- vii. The kitten-tail (*Besseyia bullii*), a State-listed endangered species, has been reported near the project site. Ideal habitat for this species consists of oak woodlands and dry prairie. Approximately 11 percent of the site includes woodlands or grasslands, and many of these areas will remain as open space under either scenario.

The project is located within a high-potential zone for the rusty-patched bumble bee (*Bombus affinis*). During development, stormwater management and landscape features should incorporate a variety of native pollinator species.

- viii. Tree removal within the study area that occurs as part of development will need to meet the requirements of the City's Tree Protection Ordinance.

## 6) Noise Mitigation Plan

Development adjacent to land uses that are sensitive (i.e., residential units or parks) to noise will have sufficient setbacks and landscaping within and adjacent to each specific project boundary to help minimize and mitigate the effects of the anticipated noise generated from the project.

## 7) Transportation Mitigation Plan

No mitigation is required for Scenario 1.

For Scenario 2, the following mitigation is required:

- i. Add a second right turn lane on southbound TH 169 exit ramp to Bren Road with a minimum storage of 300 feet. (Intersection 2)
- ii. Add right turn lane on southbound Smetana at Bren Road with a storage of 300 feet and convert the existing shared left and right turn lane to left turn only, thus providing two left turn only lanes. (Intersection 3) (Currently two lanes and would need to add a lane)

- iii. Add second left turn lane on Southbound Shady Oak Road at Bren Road with a minimum storage of 300 feet. Need protected left turn movements on east/west approaches to this intersection. (Intersection 6)
- iv. Add an additional left turn lane with a minimum storage of 500 feet on westbound Red Circle Drive North at the approach to Shady Oak Road, thus providing this approach with dual lefts and a right turn lane. (Intersection 7)
- v. Signalize the south intersection of Shady Oak Road and Red Circle Drive South. (Intersection 8)
- vi. At Shady Oak Road and Red Circle Drive South, allow right turns from the outside northbound through lane into Red Circle Drive. Extend the existing right turn lane all the way to the TH 62 westbound ramps intersection. (Intersection 8)
- vii. Reconfigure the Shady Oak Drive northbound approach at the TH 62 westbound ramps intersection to allow a third northbound through lane which drops into the right turn lane at Red Circle Drive. Shorten the inside left-turn lane so that only four lanes are needed under the TH 62 bridge. (Intersection 9)

With the above mitigation, an acceptable level of service can be maintained at the key intersections into the site under Scenario 2. The results of the analysis of the intersections with the above improvements for the AM and PM peak hours is shown in Tables **18-5 to 18-6**.

It may be some time before these improvements are needed and they will depend on the timing and location of development. There are three general areas that account for most of the increased trip generation between Scenario 1 and Scenario 2. One of the areas is located around the Opus LRT Station site in the middle of the study area. Another is located on the south end of Blue Circle Drive. The last area is located near Shady Oak Road along Red Circle Drive. The City should monitor traffic levels as development occurs within the Opus Study Area and should do additional traffic evaluation if development in these areas exceed the Scenario 1 development levels identified to determine when the mitigation needs to be implemented.

### III. OPUS STUDY AREA AUAR

- 1) **PROJECT TITLE**  
Opus Study Area
- 2) **PROPOSER**  
NA
- 3) **RGU**  
City of Minnetonka  
Rob Hanson, Economic Development Coordinator  
14600 Minnetonka Boulevard  
Minnetonka, MN 55345  
[rhanson@minnetonkamn.gov](mailto:rhanson@minnetonkamn.gov)  
952-939-8234
- 4) **REASON FOR EAW PREPARATION**  
EQB guidance indicates no response is necessary.
- 5) **PROJECT LOCATION**  
County: Hennepin  
City/Township: City of Minnetonka  
Section 36 T117N, R22W

**Figures 5-1 to 5-3** show the study area location.

- 6) **DESCRIPTION**
  - a. Project Summary

The Opus Study Area is approximately 580 acres located in the southeastern corner of the City of Minnetonka that is general bounded by TH 62 and the City of Eden Prairie to the south, TH 169 and the City of Edina to the east, Smetana Road and the City of Hopkins to the north, and Shady Oak Road (Hennepin County Road 61) and the western edge of Section 36 to the west (**Figure 5-1 to 5-3**).

The Opus AUAR includes the review of two development scenarios. Scenario 1 is generally consistent with growth planning within the City's 2040 Comprehensive Plan and Scenario 2 represents an increased density scenario that could be supported by the construction of the Opus Station of the Green Line Light Rail Transit (LRT). A description of each scenario's type and intensity of development follows:

#### **Scenario 1 (Figure 6-1)**

Scenario 1 contains developments of medium density residential (i.e. townhomes), high density residential (i.e. apartments and condominiums), commercial (i.e. restaurants, retail, daycare, etc.), two hotels, industrial (i.e. bulk warehousing and light manufacturing), institutional (i.e. schools and cemeteries), offices, and research and development. Scenario 1 also contains the Opus Station and right-of-way for the Green Line LRT, park/open spaces, open water, and road right-of-way. The land use intensity of Scenario 1 is consistent with the 2040 Comprehensive Plan.

This scenario includes the construction of the Opus Transit Station along the Green Line LRT which would provide a transit connection with Eden Prairie to the south and west and to the Minneapolis Downtown to the north and east. There is one planned new north-south running public roadways that would be constructed to the east of the LRT line and west of Green Oak Drive within the study area that connects Bren Road West to Bren Road East. Some

intersection improvements are described within the traffic mitigation section of this AUAR (Section 18.c.).

Medium density residential land is located east of Shady Oak Road and south of Bren Road while high density residential is scattered throughout the study area. The commercial uses are planned in the southwest corner of the study area nearest the interchange of Shady Oak Road and TH 62. The industrial land uses are planned in three general areas of the northwest corner, northeast corner, and along Bren Road East/Blue Circle Drive/Red Circle Drive. The office uses are generally located in the center of the study area, as well as the eastern and southern edges of the study area near the frontages of TH 169 and TH 62. The research and development land uses are located north of Bren Road West and east of Feltl Road. Scenario 1 accommodates a future population of approximately 3,550 people and about 16,500 jobs.

Table 6-1 summarizes Scenario 1.

**Table 6-1: Scenario 1**

LAND USE	GROSS ACREAGE	%	NET ACREAGE	UNITS	RESIDENT POPULATION	BUILDING SF	EMPLOYEES
MEDIUM DENSITY RESIDENTIAL (4-12 DU/AC)	12.6	2.2%	10.1	74	178	N/A	N/A
HIGH DENSITY RESIDENTIAL (Above 12 DU/AC)	77.0	13.3%	61.6	2,408	3,371	N/A	N/A
COMMERCIAL	7.1	1.2%	5.7	N/A	N/A	125,531	279
GREEN LINE LRT	7.8	1.3%	6.2	N/A	N/A	N/A	N/A
HOTEL	11.1	1.9%	8.9	511	N/A	278,806	159
INDUSTRIAL	93.6	16.1%	74.9	N/A	N/A	1,532,114	1,393
INSTITUTIONAL	49.0	8.5%	39.2	N/A	N/A	480,282	320
OFFICE	175.0	30.2%	140.0	N/A	N/A	3,937,374	13,125
RESEARCH & DEVELOPMENT	28.8	5.0%	23.0	N/A	N/A	455,012	1,300
OPEN SPACE	59.4	10.2%	59.4	N/A	N/A	N/A	N/A
OPEN WATER	16.9	2.9%	16.9	N/A	N/A	N/A	N/A
RIGHT-OF-WAY (COLLECTORS AND ARTERIALS)	42.0	7.2%	42.0	N/A	N/A	N/A	N/A
<b>TOTAL</b>	<b>580.3</b>	<b>100.0%</b>	<b>487.9</b>	<b>2,993</b>	<b>3,549</b>	<b>6,809,119</b>	<b>16,576</b>

**Scenario 2 (Figure 6-2)**

Scenario 2 contains developments of medium density residential (i.e. townhomes), high density residential (i.e. apartments and condominiums), commercial (i.e. restaurants, retail, daycare, etc.), two hotels, industrial (i.e. bulk warehousing and light manufacturing), institutional (i.e. schools and cemeteries), offices, and research and development. Scenario 2 also contains the Opus Station and right-of-way for the Green Line LRT, park/open spaces, open water, and road right-of-way.

This scenario includes the roadway improvements and construction of the Opus Transit Station along the Green Line LRT, just like Scenario 1. Some intersection improvements are described within the traffic mitigation section of this AUAR (Section 18.c.).

To take advantage of transit orientated designs afford by the construction of the Opus Station, Scenario 2 increases the office and high-density residential land uses' acreages and intensities. The additional office and high-density residential land uses increases generally result in reductions in the industrial land uses.

The medium density residential land is located east of Shady Oak Road and south of Bren Road, the same as in Scenario 1. The high density residential is planned to be scattered throughout the study area while there are an additional 12 parcels planned for redevelopment into high density residential in the south-central portion of the study area. The commercial uses are planned in the southwest corner of the study area nearest the interchange of Shady Oak Road and TH 62, the same as in Scenario 1. The industrial land uses are located in two general areas of the northwest corner and northeast corner, while one parcel southwest corner of the Bren Road East and Yellow Circle Drive remains industrial. The office uses are generally located in the center of the study area, as well as the eastern and southern edges of the study area near the frontages of TH 169 and TH 62. The research and development land uses are located north of Bren Road West and east of Feltl Road. Scenario 2 accommodates a future population of approximately 7,350 people (about 3,800 more people than Scenario 1) and about 22,200 jobs (about 5,700 more jobs than Scenario 1).

Table 6-2 summarizes Scenario 2.

**Table 6-2: Scenario 2**

LAND USE	GROSS ACREAGE	%	NET ACREAGE	UNITS	RESIDENT POPULATION	BUILDING SF	EMPLOYEES
MEDIUM DENSITY RESIDENTIAL (4-12 DU/AC)	12.6	2.2%	10.1	74	178	N/A	N/A
HIGH DENSITY RESIDENTIAL (Above 12 DU/AC)	116.7	20.1%	93.4	5,113	7,158	N/A	N/A
COMMERCIAL	12.2	2.1%	9.7	N/A	N/A	199,628	444
GREEN LINE LRT	7.8	1.3%	6.2	N/A	N/A	N/A	N/A
HOTEL	11.1	1.9%	8.9	416	N/A	228,386	131
INDUSTRIAL	59.4	10.2%	47.5	N/A	N/A	667,692	607
INSTITUTIONAL	39.8	6.9%	31.9	N/A	N/A	337,029	225
OFFICE	173.6	29.9%	138.9	N/A	N/A	5,955,905	19,853
RESEARCH & DEVELOPMENT	28.8	5.0%	23.0	N/A	N/A	327,506	936
OPEN SPACE	59.4	10.2%	59.4	N/A	N/A	N/A	N/A
OPEN WATER	16.9	2.9%	16.9	N/A	N/A	N/A	N/A
RIGHT-OF-WAY (COLLECTORS AND ARTERIALS)	42.0	7.2%	42.0	N/A	N/A	N/A	N/A
<b>TOTAL</b>	<b>580.3</b>	<b>100.0%</b>	<b>487.9</b>	<b>5,603</b>	<b>7,336</b>	<b>7,716,146</b>	<b>22,195</b>

b. Description of Proposed Project

If future development occurs as proposed under Scenarios 1 or 2, new or reconstructed utilities, roads, and other infrastructure will be needed to serve the AUAR area. The City's Comprehensive Plan and this AUAR identify the infrastructure needed to support the varying levels of development identified in the Scenarios. Infrastructure needs are discussed in greater detail under the response to AUAR Items: 11.b.i. – Water Resources – Wastewaters, 11.b.ii. – Water Resources – Surface Water Runoff, 11.b.iii. – Water Resources – Water Appropriations and 21 – Traffic.

c. Project Magnitude

The redevelopment of Opus Study Area is expected to occur over the next 20 years depending on market conditions and overall development demand. The timing of development will also be influenced by the timing of construction for required infrastructure improvements both locally and regionally. The frequency, operation, and maintenance of the transit and LRT station within the study area may also influence the timing of the full build-out of the Opus Park property.

**Table 6-3: AUAR Scenario Intensities**

LAND USE	Change from Existing to Scenario 1				Change from Scenario 1 to Scenario 2			
	UNITS	RESIDENTS	BUILDING SF	EMPLOYEES	UNITS	RESIDENTS	BUILDING SF	EMPLOYEES
HIGH DENSITY RESIDENTIAL (Above 12 DU/AC.)	732	1,025	0	0	3,437	4,812	0	0
COMMERCIAL	0	0	25,903	58	0	0	100,000	222
GREEN LINE LRT	0	0	0	0	0	0	0	0
HOTEL	95	0	50,420	29	0	0	0	0
INDUSTRIAL	0	0	509,165	463	0	0	-355,257	-323
INSTITUTIONAL	0	0	46,510	31	0	0	-96,743	-64
OFFICE	0	0	785,302	2618	0	0	2,803,833	9,346
RESEARCH & DEVELOPMENT	0	0	226,606	647	0	0	99,100	283
<b>TOTAL</b>	<b>827</b>	<b>1,025</b>	<b>1,643,906</b>	<b>3845</b>	<b>3,437</b>	<b>4,812</b>	<b>2,550,933</b>	<b>9,464</b>

d. Project Purpose

Both development scenarios will provide a greater balance of employment and residential uses within the study area creating a higher and better use. The hourly traffic distribution will be more balanced than with the existing development and therefore the planned infrastructure within the study area will be used more efficiently. Scenario 2 has a greater amount of high-density residential units, office, and research and development space than Scenario 1 to recognize the potential redevelopment activity that can be supported by the LRT transit station within the study area.

e. Future Stages of Development

The AUAR study area comprehends future potential land use. No additional future stages are currently planned but would be revisited through the City's Comprehensive Plan process in the future.

f. Subsequent Stages of the Project

In anticipation of the construction of the LRT transit line and station within the study area, a number of high-density residential and mixed-use development have been proposed and/or constructed within the study area. Environmental reviews required for those development that met the mandatory EQB thresholds. All developments recently completed or under construction have been included in the existing conditions analysis.

## 7) COVER TYPES

To assess cover types on the Opus Study Area, data was obtained from the Minnesota Land Cover Classification System (MLCCS). The data is based on an aerial photograph review (see Figure 7-1).

**Table 7-1: Land Cover**

Cover Type	Acreage	% Coverage
5-10% Impervious	14.6	2.5
26-50% Impervious	16.9	2.9
76-100% Impervious	417.8	71.9
Forest	56.6	9.7
Maintained Tall Grass	2.7	0.5
Short Grasses	8.9	1.5
Wetland Emergent Vegetation	42.8	7.4
Wetland Open Water	17.3	3.0
Wetland Shrubs	3.2	0.6
<b>TOTAL:</b>	<b>580.8</b>	<b>100</b>

- **Wetlands:** Based on the National Wetlands Inventory database, the existing site contains approximately 63 acres of wetland. Six DNR Public Waters are located within the site. Some of the wetlands within the Opus Study Area are located amongst highly developed areas, but still may provide some habitat for species accustomed to disturbance. Approximately 45 of the 63 acres of wetland are contained within the north-central portion of the site. **Figure 7-2** shows the National Wetlands Inventory wetlands within the study area.
- **Forest and Woodland Communities:** Based on the Hennepin County Minnesota Land Cover Classification System (MLCCS), approximately 56.6 acres of forest or woodland communities exist on the site. Many of these wooded areas are planted and serve as landscaping between buildings and surrounding open space around parks and wetlands. Lone Lake Park is approximately two miles from the Opus along Shady Oak Road and contains a mesic hardwood forest rare plant community.
- **Grassland/Shrubland:** Based on the Hennepin County MLCCS, approximately 11.6 acres of grassland and mixed shrubland exist within the site.
- **Agricultural Areas:** No agricultural areas exist within the site boundaries.
- **Surrounding Resources:** The land that borders the site to the north, east, and west is highly developed commercial and urban/residential land uses.

The resulting impacts on land cover types are almost identical on both concepts. Open space corridors that are integral to the future development pattern have been identified based on natural resource data. Accordingly, almost all of the existing wetlands, forest areas, and substantial areas of herbaceous cover lie within open space corridors are intended to be preserved.

## 8) PERMITS AND APPROVALS

It is anticipated similar permits and approvals will be needed for both scenarios. Development within the study area will be funded through developers' funds. Mitigation will include the need for development in the area to obtain the required permits and adhere to permitting stipulations.

**Table 8-1: List of Permits and Approvals**

<b><i>Federal</i></b>	<b><i>Permit/Approval</i></b>
US Army Corps of Engineers	Section 404 Permit
<b><i>State</i></b>	<b><i>Permit/Approval</i></b>
Pollution Control Agency	NPDES Storm Water Permit
Pollution Control Agency	Sanitary Sewer Permit
Pollution Control Agency	Section 401 Water Quality Certification Permit, if Section 404 Individual Permit is needed
Pollution Control Agency	Approval of remediation and cleanup plans, as applicable
Department of Natural Resources	Temporary dewatering for construction (Public Works Permit)
Department of Health	Well sealing / abandonment permit
Department of Health	Well construction
Department of Health	Monitoring well permit
Department of Health	Watermain plan review
Department of Health	Public Water Supply Certification
Department of Health	Asbestos abatement/removal
State Historic Preservation Office	Coordination, if federal permits are needed with development
MnDOT	State Aid approval
MnDOT	Work in right-of-way permit, if applicable
MnDOT	Curb-cutting permits
<b><i>Regional/ County/ Local</i></b>	<b><i>Permit/Approval</i></b>
City of Minnetonka	Comprehensive Plan amendment for Scenario 2
City of Minnetonka	Wetland Conservation Act approval
City of Minnetonka	Preliminary and final plat approvals
City of Minnetonka	Building permits
City of Minnetonka	Rezoning or text amendments for scenarios
City of Minnetonka	Floodplain permitting
Nine Mile Creek Watershed District	Floodplain Alteration
Nine Mile Creek Watershed District	Erosion and Sediment Control
Nine Mile Creek Watershed District	Stormwater Management
Nine Mile Creek Watershed District	Wetland Management
Nine Mile Creek Watershed District	Appropriation of Public Surface Waters
Metropolitan Council	Comprehensive Plan amendments for Scenario 2
Metropolitan Council	Review of new sanitary sewer plans

Hennepin County	Approval of county road improvements
Hennepin County	Access permits
Hennepin County	Conformance with County Ordinances, where applicable

**9) LAND USE**

a. Existing and Planned Land Uses and Zoning

The Opus Study Area is comprised of 202 parcels. The parcel sizes vary from about 0.04 acres to 49.07 acres in size with a mean size of 2.67 acres. Developed uses on the parcels include the townhomes, apartments, condominiums, restaurants, retail, daycares, hotels, bulk warehousing, light manufacturing, research and development, offices, schools, and a cemetery. **Figures 9.1 and 9.2** shows the existing land use of the parcels and the existing building footprints within the study area.

Areas of traditional suburban growth have emerged over the past forty-five years within the study area, with developments to the north in the City of Hopkins and the west in the City of Edina started developing about five years earlier while development to the south within the City of Eden Prairie and to the west within Minnetonka started about five years later. The development patterns in these areas are consistent with development patterns found in southwestern Hennepin County within the I-494 and I-694 loop.

**Table 9-1** displays the existing mix of uses within the study area. **Table 9-2** displays that uses of Scenario 1 which closely follows the implementation of the 2040 Comprehensive Plan and is described in more detail in Section 6.a. **Table 9-3** displays the uses of Scenario 2 which intensifies the high-density residential and offices uses to maximize the investment of the LRT transit line and station within the study area and is described in more detail in Section 6.a.

**Table 9-1: Existing Land Uses**

LAND USE	GROSS ACREAGE	%	UNITS	RESIDENT POPULATION	BUILDING SF	EMPLOYEES
MEDIUM DENSITY RESIDENTIAL (4-12 DU/AC.)	12.6	2.2%	74	178	N/A	N/A
HIGH DENSITY RESIDENTIAL (Above 12 DU/AC.)	73.8	12.7%	1,676	2,346	N/A	N/A
COMMERCIAL	7.1	1.2%	N/A	N/A	99,628	221
GREEN LINE LRT	7.8	1.3%	N/A	N/A	N/A	N/A
HOTEL	11.1	1.9%	416	N/A	228,386	131
INDUSTRIAL	93.6	16.1%	N/A	N/A	945,733	860
INSTITUTIONAL	49.0	8.5%	N/A	N/A	510,988	341
OFFICE	178.2	30.7%	N/A	N/A	3,152,072	10,507
RESEARCH & DEVELOPMENT	28.8	5.0%	N/A	N/A	228,406	653
OPEN SPACE	59.4	10.2%	N/A	N/A	N/A	N/A
OPEN WATER	16.9	2.9%	N/A	N/A	N/A	N/A
RIGHT-OF-WAY (COLLECTORS AND ARTERIALS)	42.0	7.2%	N/A	N/A	N/A	N/A
<b>TOTAL</b>	<b>580.3</b>	<b>100.0%</b>	<b>2,166</b>	<b>2,524</b>	<b>5,165,213</b>	<b>12,712</b>

**Table 9-2: Scenario 1 Land Uses**

LAND USE	GROSS ACREAGE	%	NET ACREAGE	UNITS	RESIDENT POPULATION	BUILDING SF	EMPLOYEES
MEDIUM DENSITY RESIDENTIAL (4-12 DU/AC.)	12.6	2.2%	10.1	74	178	N/A	N/A
HIGH DENSITY RESIDENTIAL (Above 12 DU/AC.)	77.0	13.3%	61.6	2,408	3,371	N/A	N/A
COMMERCIAL	7.1	1.2%	5.7	N/A	N/A	125,531	279
GREEN LINE LRT	7.8	1.3%	6.2	N/A	N/A	N/A	N/A
HOTEL	11.1	1.9%	8.9	511	N/A	278,806	159
INDUSTRIAL	93.6	16.1%	74.9	N/A	N/A	1,532,114	1,393
INSTITUTIONAL	49.0	8.5%	39.2	N/A	N/A	480,282	320
OFFICE	175.0	30.2%	140.0	N/A	N/A	3,937,374	13,125
RESEARCH & DEVELOPMENT	28.8	5.0%	23.0	N/A	N/A	455,012	1,300
OPEN SPACE	59.4	10.2%	59.4	N/A	N/A	N/A	N/A
OPEN WATER	16.9	2.9%	16.9	N/A	N/A	N/A	N/A
RIGHT-OF-WAY (COLLECTORS AND ARTERIALS)	42.0	7.2%	42.0	N/A	N/A	N/A	N/A
<b>TOTAL</b>	<b>580.3</b>	<b>100.0%</b>	<b>487.9</b>	<b>2,993</b>	<b>3,549</b>	<b>6,809,119</b>	<b>16,576</b>

**Table 9-3: Scenario 2 Land Uses**

LAND USE	GROSS ACREAGE	%	NET ACREAGE	UNITS	RESIDENT POPULATION	BUILDING SF	EMPLOYEES
MEDIUM DENSITY RESIDENTIAL (4-12 DU/AC.)	12.6	2.2%	10.1	74	178	N/A	N/A
HIGH DENSITY RESIDENTIAL (Above 12 DU/AC.)	116.7	20.1%	93.4	5,113	7,158	N/A	N/A
COMMERCIAL	12.2	2.1%	9.7	N/A	N/A	199,628	444
GREEN LINE LRT	7.8	1.3%	6.2	N/A	N/A	N/A	N/A
HOTEL	11.1	1.9%	8.9	416	N/A	228,386	131
INDUSTRIAL	59.4	10.2%	47.5	N/A	N/A	667,692	607
INSTITUTIONAL	39.8	6.9%	31.9	N/A	N/A	337,029	225
OFFICE	173.6	29.9%	138.9	N/A	N/A	5,955,905	19,853
RESEARCH & DEVELOPMENT	28.8	5.0%	23.0	N/A	N/A	327,506	936
OPEN SPACE	59.4	10.2%	59.4	N/A	N/A	N/A	N/A
OPEN WATER	16.9	2.9%	16.9	N/A	N/A	N/A	N/A
RIGHT-OF-WAY (COLLECTORS AND ARTERIALS)	42.0	7.2%	42.0	N/A	N/A	N/A	N/A
<b>TOTAL</b>	<b>580.3</b>	<b>100.0%</b>	<b>487.9</b>	<b>5,603</b>	<b>7,336</b>	<b>7,716,146</b>	<b>22,195</b>

## **Existing Parks, Trails, and Recreational Areas within Opus**

### **Existing Trails**

The existing trails within the Opus project boundary include six miles of shared-used paved trails throughout the campus. Most trails are separated from vehicle traffic with a series of road underpasses. The existing trail loops through open spaces and ponds are popular with residents and employees at the campus. Other existing local trails, including those along Shady Oak Road, connect into the Opus property from the surrounding cities of Hopkins, Edina, and Eden Prairie. Refer to **Figure 9.3** for the Existing and Planned Trail Network Map.

### **Existing Parks**

The only existing public park within the Opus project boundary includes the 8.6-acre Green Circle Park, owned and managed by the City of Minnetonka. The park includes a picnic shelter, tables, and paved trails around Annie's Pond with benches for seating. The trail connects to the extensive paved trail network within the Opus campus. The City of Minnetonka also owns a 48-acre open space with wetlands on the north portion of the Opus campus.

## b. Compatibility with Plans

### **Planned Parks and Trails within Opus**

The Opus Area Placemaking + Urban Design Implementation Guide (referred to as "Implementation Guide"), developed in 2019 for the City of Minnetonka, plans additional park, trail, and amenity spaces within the Opus campus property. Refer to **Figure 9.4** for the Trail Loop Map and **Figure 9.5** for the Planned Opus Park Space Map.

The Implementation Guide proposes a 5.6-acre Central Plaza park space, which could be constructed after completion of the light rail station. Central Plaza will be a signature new 5.6-acre community-level park/plaza space strategically located adjacent to the Southwest LRT's Opus Station. This area will be a hub of activity and serve as the front door to the Opus area for light rail users. The proposed park is designed to host large events including concerts and farmers markets. The design of the park includes an amphitheater with a flexible open lawn, a paved plaza, an interactive fountain, wayfinding signage and kiosk, seating areas, multi-purpose building, and a small fenced dog park separated from other uses.

The Implementation Guide plans for an additional 33 pedestrian and park nodes throughout the campus. The nodes range to include landscape elements (gardens, edibles), shade features, play areas, seating, drinking fountains, public art and wayfinding signage. The nodes are planned in specific locations which highlight entries, trail loop connections, scenic overlooks, natural resources or places for gathering within the campus. These nodes will need to be constructed and coordinated with private developers and businesses or at time of redevelopment.

### **Planned Trails Nearby**

Planned trail connections nearby the Opus campus include an on-street bicycle facility or shared use trail along Rowland Road (west), an eastward extension of the Nine Mile Regional Creek Trail through Edina (east) and a cycle track on the east side of Shady Oak Road (south). Refer to **Figure 9.3** for the Existing and Planned Trail Network Map. These trails may be constructed as planned or as redevelopment and roadway reconstruction occur.

### **Nearby Regional Trails**

Existing regional trails connect to the Opus property from surrounding cities of Hopkins, Edina, and Eden Prairie. Refer to **Figure 9.6** for the Regional Connections to Parks and Trails Map.

The Nine Mile Creek Regional Trail crosses TH 169 and enters the Opus campus property and heads north along Smetana Drive. The trail connects north towards the popular Cedar Lake Regional Trail in Hopkins. This regional trail heads east towards Minneapolis and the Grand Rounds trail. Portions of the Cedar Lake Regional Trail are currently closed due to construction of the Southwest Light Rail until late 2021/2022.

The paved trail running north (portion of the Nine Mile Creek Regional Trail) also connects to the Minnesota River Bluffs LRT Regional Trail in Hopkins. It is a 12-mile aggregate trail operated by Three Rivers Park District and connects to Chanhassen and Chaska.

A trail along Shady Oak Road connects the Opus campus property north to the Lake Minnetonka LRT Regional Trail. The 15-mile aggregate trail travels from Hopkins west to Victoria at Carver Park Reserve and offers scenic views of Lake Minnetonka.

### **Nearby Parks and Recreation Destinations within Minnetonka and Surrounding Communities**

There are several municipal and regional parks within one to two miles of the Opus boundary. Some of these parks can be accessed via trails from the Opus campus. Refer to **Figure 9.7** for the Nearby Parks and Trails Map and the Regional Connections to Parks and Trails Map.

Within the City of Minnetonka, Bryant Lake Regional Park is located approximately one mile from the Opus campus property. Also located in Minnetonka, Lone Lake Park is approximately two miles from the Opus Study Area along Shady Oak Road.

Surrounding communities also offer recreational spaces including Shady Oak Beach, located approximately 0.5 miles from the Opus Study Area along Shady Oak Road and accessible by trail. The beach is owned by the City of Hopkins but operated by the City of Minnetonka. Valley Park and the Westbrook Archery Range and are owned and managed by the City of Hopkins. Bredesen Park is located approximately 1.5 miles from the Opus Study Area and is owned and managed by the City of Edina.

### **2040 Comprehensive Plan**

The 2040 Comprehensive Plan was adopted by the City Council on January 7, 2019. Scenario 1 is in conformance with the 2040 Comprehensive Plan. If Scenario 2 is proposed as redevelopment in the future, an amendment to the Comprehensive Plan would be needed.

#### **c. Measures to Mitigate Incompatibility**

The proposed redevelopment land use is generally compatible with adjacent land uses. Additionally, Scenario 1 is in conformance with the Comprehensive Plan. Before any cumulative redevelopment occurs that would exceed that described in Scenario 1, the 2040 Comprehensive Plan as well as any official controls implementing the Comprehensive Plan, would need to be amended in accordance with this AUAR. Individual mitigation strategies necessary to develop at the intensities described in Scenario 2 are detailed in the Executive Summary and the individual AUAR sections.

## 10) GEOLOGY, SOILS, AND TOPOGRAPHY/LAND FORMS

### a. Geology

The study area is within New Ulm Formations and sandy till (**Figure 10-1**). For bedrock geology, the majority of the project is located in Platteville and Glenwood Formations, with a small part of the study area in St. Peter Sandstone. The project is surrounded by these same bedrock geologies as well (**Figure 10-2**). The Minnesota DNR Aggregate Resources Web Map shows that no gravel pits exist on the site. The site is not listed as a Primary or Secondary Source on the Minnesota Geologic Survey (MGS) 7-County Metro Sand and Gravel. The Minnesota Karst Lands map indicates the project within is within the Covered Karst region, which is an area underlain by carbonate bedrock but with more than 100 feet of sediment cover.

### b. Soils and Topography

The soils of the Opus Study Area are shown on **Figure 10-3** and include:

- Malardi-Hawick complex, 1 to 6 percent slopes (L2B)
- Malardi-Hawick complex, 6 to 12 percent slopes (L2C)
- Malardi-Hawick complex, 18 to 35 percent slopes (L2E)
- Biscay clay loam, 0 to 2 percent slopes (L6A)
- Canisteo clay loam, 0 to 2 percent slopes (L21A)
- Lester loam, 6 to 10 percent slopes, moderately eroded (L22C2)
- Lester loam, 10 to 16 percent slopes, moderately eroded (L22D2)
- Lester loam, 10 to 22 percent slopes (L22E)
- Lester loam, morainic, 25 to 35 percent slopes (L22F)
- Cordova loam, 0 to 2 percent slopes (L23A)
- Glencoe clay loam, 0 to 1 percent slopes (L24A)
- Le Sueur loam, 1 to 3 percent slopes (L25A)
- Hamel overwash-Hamel complex, 0 to 3 percent slopes (L36A)
- Angus loam, 2 to 6 percent slopes (L37B)
- Angus-Kilkenny complex, 2 to 6 percent slopes (L40B)
- Kingsley-Gotham complex, 2 to 6 percent slopes (L42B)
- Kingsley-Gotham complex, 6 to 12 percent slopes (L42C)
- Nessel loam, 1 to 3 percent slopes (L44A)
- Dundas-Cordova complex, 0 to 3 percent slopes (L45A)
- Klossner soils, depressional, 0 to 1 percent slopes (L49A)
- Muskego and Houghton soils, 0 to 1 percent slopes (L50A)
- Angus-Moon complex 2 to 5 percent slopes (L60B)
- Lester-Metea complex, 6 to 12 percent slopes, eroded (L61C2)
- Lester-Metea complex, 18 to 25 percent slopes (L61E)
- Lester-Malardi complex, 6 to 12 percent slopes, eroded (L70C2)
- Hamel-Glencoe complex, 0 to 2 percent slopes (L132A)
- Urban land-Udorthents wet substratum complex 0 to 2 percent slopes (U1A)
- Udorthents, wet substratum, 0 to 2 percent slopes (U2A)
- Urban land-Udorthents (cut and fill land) complex, 0 to 6 percent slopes (U6B)
- Water, miscellaneous (M-W)
- Water (W)

The soils are well-drained to somewhat poorly drained. The existing site topography is relatively flat with elevations ranging from 970 feet on the southwest side of the project to 874 on the northeast.

Redevelopment projects will require moving soils and balancing the movement of soils in the most cost beneficial practice. Soil will need to be evaluated for suitability for foundation construction and stormwater management, but suitable soils can normally be used in landscape berming or on other areas of the site not requiring specific soil qualities. Development within the study area will be designed to conform with applicable state and local standards, including National Pollution Discharge Elimination System (NPDES) Construction Stormwater General Permit requirements.

## 11) WATER RESOURCES

- a. Surface Water and Groundwater Features
  - i. Surface water

Several wetlands exist on site and are shown on **Figure 7-2**, five of which are DNR Public Water wetlands. The City's classification system of the wetlands is shown on **Figure 11-1**. No lakes, streams, channels, or ditches exist on the study area.

Several lakes, wetlands, and streams exist within one mile of the project site, as shown below:

- Arrowhead Lake (50945)
- Bryant Lake (51973)
- Bredeson Lake (65314)
- Lone Lake (50986)
- Minnetoga Lake (51333)
- Mirror Lake (50552)
- Shady Oak Lake (51027, 50759)
- Several Unnamed Lakes
- Nine Mile Creek (739)

Two waterbodies, Nine Mile Creek and Bryant Lake are listed as impaired waters within the one-mile buffer. Nine Mile Creek is listed as impaired for Fishes Bioassessments. Bryant Lake is listed for Aquatic Consumption and Aquatic Life. These impairments are construction related parameters and require additional Best Management Practices if a project has a discharge point within one mile. The additional BMPs include:

- Immediate stabilization of exposed soil areas and complete stabilization within seven calendar days after construction activity in that portion of the project either temporarily or permanently ceases.
- Permittees must also provide a temporary sediment basin for common drainage areas that serves an area with five or more acres disturbed at one time.
- A mandatory Stormwater Pollution Prevention Plan (SWPPP) review is required if a project will disturb more than 50 acres and has a discharge point within one mile of, and flows to, the impaired water. The SWPPP must be submitted at least 30 days prior to the construction start date.

- ii. Groundwater

The wetlands and open water located within the Opus Study Area indicate that shallow groundwater exists but this shallow groundwater is not used as a source of drinking water.

The depth of groundwater used for potable water sources within the Opus Study Area is 250 to 350 feet below the surface in the St. Peter and Prairie Du Chien formations. According to the Minnesota Department of Health – Minnesota Well Index, there are two

sealed wells and seven active domestic, commercial, or irrigation wells located in the Opus Study Area. Those wells are shown in **Table 11-1**.

**Table 11-1: Wells Located Within the Opus AUAR Boundary**

	Well ID	Elevation	Aquifer		Depth (FT)	Use	Status
1	205167	950	QWTA	Quat. Water Table Aquifer	94	Domestic	Active
2	644851	962	QBAA	Quat. Buried Artes. Aquifer	174	Domestic	Active
3	205169	967	OPDC	Prairie Du Chien Group	346	Commercial	Sealed
4	114493	927	OSTP	St. Peter	301	Domestic	Active
5	112224	909	OSPC	St. Peter - Prairie Du Chien	325	Other	Active
6	205168	935	OSTP	St. Peter	270	Domestic	Active
7	112223	919	OSPC	St. Peter - Prairie Du Chien	325	Other	Active
8	441112	925	OSTP	St. Peter	260	Domestic	Active
9	762569	902	OSTP	St. Peter	260	Irrigation	Sealed

The northwest portion of the Opus Study Area, approximately 1/3 of the total area, is located within the Drinking Water Supply Management Area (DWSMA) and Wellhead Protection Area (WHPA). This area includes wells 205167, 205169 and 644851.

The entire Opus Study Area is served by the Minnetonka municipal water system, which is supplied by 18 wells located at eight water treatment plants (WTP) across the system. WTP #13 is the closest WTP in proximity to the Opus Study Area and provides a majority of the treated water supplied to the AUAR area. Wells 13 (205165) and 13A (132263) supply raw water to WTP #13 from the Prairie du Chien and Jordan aquifers. Wells 13 and 13A are both within the DWSMA and WHPA.

The entire study area is within the Edina Drinking Water Supply Management Area (DWSMA). Areas of Low, Moderate, and High vulnerability exist within the Opus site (**Figure 11-2**).

- b. Project Effects on Water Resources and Measures to Minimize or Mitigate the Effects
  - i. Wastewater

**11. b. i. a) Publicly Owned Wastewater Treatment System**

The entire Opus Study Area is served by the Minnetonka municipal sanitary sewer collection system. The system conveys flow via gravity sewer lines and the Opus lift station to the Metropolitan Council interceptor system and eventually to the Blue Lake Wastewater Treatment Plant (Metropolitan Council: **Figure 11-3**). Blue Lake provides mechanical, biological, and chemical treatment to the wastewater before discharging it into the Minnesota River. The plant currently treats an average of 27 million gallons of wastewater per day and has a capacity of 32 million gallons per day.

Analysis was conducted to determine the existing wastewater flows generated from the Opus Study Area. Existing land use, water use records and sanitary sewer flow monitoring data were utilized to determine the existing wastewater flows by land use (**Table 11.2**). The analysis assumed the following conditions:

- Medium Density Residential: 6 dwellings per acre, 2.4 people per dwelling
- High Density Residential
  - a. Existing: 24 dwellings per acre, 1.4 people per dwelling

- b. Scenario 1: 32 dwellings per acre, 1.4 people per dwelling
- c. Scenario 2: 44 dwellings per acre, 1.4 people per dwelling
- Commercial: 1 employee per 450 square feet
- Hotel: 1 employee per 1,750 square feet
- Industrial: 1 employee per 1,100 square feet
- Institutional: 1 employee per 1,500 square feet
- Office: 1 employee per 300 square feet
- Research and Development: 1 employee per 350 square feet

**Table 11-2: Existing Wastewater Flows**

LAND USE	Usage per Unit (gpcd)	Average Day Flow (ADF) (gpd)	Peak Hourly Factor	Peak Hourly Flow (PHF) (gph)
MEDIUM DENSITY RESIDENTIAL (4-12 DU/AC.)	50	9,095	4.0	1,516
HIGH DENSITY RESIDENTIAL (Above 12 DU/AC.)	50	123,983	3.9	20,147
COMMERCIAL	15	3,321	4.0	553
GREEN LINE LRT				
HOTEL EMPLOYEES	15	1,958	4.0	326
HOTEL ROOMS	50	20,800	4.0	3,467
INDUSTRIAL	120	103,171	4.0	17,195
INSTITUTIONAL	15	5,110	4.0	852
OFFICE	10	105,069	4.0	17,512
RESEARCH & DEVELOPMENT	15	9,789	4.0	1,631
OPEN SPACE				
OPEN WATER				
RIGHT-OF-WAY (COLLECTORS AND ARTERIALS)				
<b>Total Existing Wastewater Flow (2019)</b>		<b>382,296</b>	<b>3.6</b>	<b>57,344</b>

Based on the wastewater data, the Opus Study Area currently generates an Average Daily Flow (ADF) of 382,300 gallons per day (gpd) and a Peak Hourly Flow (PHF) of 57,350 gallons per hour (gph).

The proposed development for Scenario 1 and Scenario 2 were incorporated into the analysis to identify the additional sanitary sewer flows anticipated from the two individual development scenarios (**Tables 11-3 and 11-4** respectively).

**Table 11-3: Scenario 1 Wastewater Flows**

LAND USE	Usage per Unit (gpcd)	Average Day Flow (ADF) (gpd)	Peak Hourly Factor	Peak Hourly Flow (PHF) (gph)
MEDIUM DENSITY RESIDENTIAL (4-12 DU/AC.)	50	9,095	4.0	1,516
HIGH DENSITY RESIDENTIAL (Above 12 DU/AC.)	50	172,492	3.9	28,030
COMMERCIAL	15	4,184	4.0	697
GREEN LINE LRT				
HOTEL EMPLOYEES	15	2,390	4.0	398
HOTEL ROOMS	50	25,550	4.0	4,258
INDUSTRIAL	120	167,140	3.9	27,160
INSTITUTIONAL	15	4,803	4.0	800
OFFICE	10	131,246	3.9	21,327
RESEARCH & DEVELOPMENT	15	19,501	4.0	3,250
OPEN SPACE				
OPEN WATER				
RIGHT-OF-WAY (COLLECTORS AND ARTERIALS)				
Total Comp Plan Scenario Wastewater Flow		536,400	3.4	75,990
<b>Comp Plan Scenario Additional Wastewater Flow</b>		<b>154,105</b>		<b>18,646</b>

Scenario 1 increases the ADF by 154,100 gpd and the PHF by 18,650 gph. The projected additional ADF equates to approximately 3% of the remaining treatment capacity. No land uses are identified that would generate wastewater requiring pretreatment. The proposed development scenario is consistent with the City's planned sanitary sewer usage as identified in the 2040 Comp Plan. The existing sanitary sewer infrastructure has adequate capacity to accommodate the additional flows. A secondary forcemain and generator should be installed at the Opus lift station to provide redundancy and backup power generation at a critical system facility.

**Table 11-4: Scenario 2 Wastewater Flows**

<b>LAND USE</b>	<b>Usage per Unit (gpcd)</b>	<b>Average Day Flow (ADF) (gpd)</b>	<b>Peak Hourly Factor</b>	<b>Peak Hourly Flow (PHF) (gph)</b>
MEDIUM DENSITY RESIDENTIAL (4-12 DU/AC.)	50	9,095	4.0	1,516
HIGH DENSITY RESIDENTIAL (Above 12 DU/AC.)	50	359,582	3.6	53,937
COMMERCIAL	15	6,654	4.0	1,109
GREEN LINE LRT				
HOTEL EMPLOYEES	15	1,958	4.0	326
HOTEL ROOMS	50	20,800	4.0	3,467
INDUSTRIAL	120	72,839	4.0	12,140
INSTITUTIONAL	15	3,370	4.0	562
OFFICE	10	198,530	3.8	31,434
RESEARCH & DEVELOPMENT	15	14,036	4.0	2,339
OPEN SPACE				
OPEN WATER				
RIGHT-OF-WAY (COLLECTORS AND ARTERIALS)				
Total Vision Scenario Wastewater Flow		686,864	3.3	94,444
<b>Vision Scenario Additional Wastewater Flow</b>		<b>304,569</b>		<b>37,100</b>

Scenario 2 increases the ADF by 304,600 gpd and the PHF by 37,100 gph. The projected additional ADF equates to approximately 6% of the remaining treatment capacity. No land uses are identified that would generate wastewater requiring pretreatment. The proposed development scenario is consistent with the City's planned sanitary sewer usage as identified in the 2040 Comprehensive Plan. The existing sanitary sewer infrastructure has adequate capacity to accommodate the additional flows. A secondary forcemain and generator should be installed at the Opus lift station to provide redundancy and backup power generation at a critical system facility.

**11. b. i. b) Wastewater Subsurface Sewer Treatment Systems**

Subsurface sewer treatment systems (SSTS) will not be allowed.

**11. b. i. c) Wastewater Discharge to Surface Waters**

Wastewater will not be discharged to surface water.

**11. b. i. d) Wastewater Mitigation Plan**

A secondary forcemain and generator should be installed at the Opus lift station to provide redundancy and backup power generation at a critical system facility.

ii. Stormwater

**Stormwater Regulations**

To comply with local, state, and federal stormwater policies, the Opus Study Area needs to meet the requirements of Nine Mile Creek Watershed District (NMCWD) and the City that are in place at the time of redevelopment. The following analysis considers the current stormwater requirements (those in place at the time of this report). Considering this, the Opus Study Area needs to meet NMCWD requirements, as they are more restrictive than those of the City. **Figure 11-4** shows the Nine Mile Creek subwatersheds and **Figure 11-5** shows the FEMA 100-year and 500-year floodplains within the study area.

Volume Control: Retain 1.1 inches of runoff from all onsite impervious surfaces.

- If 50% or more of the impervious surface of a site is disturbed or the impervious surface of a site is increased by more than 50% as part of a redevelopment project, then the regulated impervious surface is all onsite impervious area. The following analysis assumes this condition.

Retention via infiltration may not be possible on every site due to constraints such as high groundwater, shallow bedrock, soils with low infiltration capacity, or contamination. In these cases, stormwater reuse or filtration of 1.1 inches of runoff from all onsite impervious surfaces will be acceptable to meet the volume control requirement. The majority of soils in the Opus Study Area are Hydrologic Soil Group (HSG) C and C/D (**Figure 11-6**). Therefore, it is unlikely that infiltration will be suitable in much of the study area. As each parcel develops, site specific analysis is required to determine if stormwater retention is feasible. If a site is determined to be restricted, and the standard to retain 1.1 inches of runoff cannot be met, developers will need to follow NMCWD's restricted site sequencing, summarized below. Additionally, the DWSMA in the northeast portion of the study area has high vulnerability. Infiltration practices in this area require a higher level of engineering review under the NPDES Construction Stormwater General Permit, to prevent adverse impacts to groundwater. If filtration is used, the water quality standards described below will also be required.

Rate Control: Limit proposed discharge rates for the 2-, 10-, and 100-year 24-hour storm events to those of existing conditions at all discharge points.

Water Quality: Provide at least 60% annual removal of total phosphorus (TP) and at least 90% annual removal of total suspended solids (TSS) from site runoff.

- This analysis assumes that if volume control via infiltration is met for the site, the water quality requirements are also satisfied. Note that as each site develops, modeling will be required to show that these standards are met.

Erosion Control: Meet the Minnesota Pollution Control Agency (MPCA) National Pollution Discharge Elimination System (NPDES) and NMCWD requirements. Measures such as silt fence, biorolls, erosion control blanket, and floating silt curtain are expected to be required for redevelopment.

**Redevelopment Scenarios**

Two redevelopment scenarios were considered. For each scenario, the parcels were categorized based on whether or not they will be redeveloped. The parcels that will redevelop were further categorized based on their proposed change in maximum impervious coverage (see **Figures 11-7** and **11-8**). The maximum impervious coverages,

as shown in **Table 11-5**, are based on the City’s zoning code and existing impervious coverage. For high density residential parcels, the maximum impervious coverage was based on similar projects previously constructed in the City. Medium density residential and open space are not included because these land uses are not proposed to be redeveloped in either scenario. Opus Station and the Green Line LRT (parcels designated with MetroTransit land use) are also assumed to maintain equal maximum impervious coverages from existing to proposed conditions.

**Table 11-5: Land Use and Impervious Coverage**

Land Use	Maximum Impervious Coverage*
Institutional – Other (St. Margaret’s Cemetery)	10%
High Density Residential	55%
Institutional – Educational (Spanish Language Academy, Eagle Ridge Academy)	60%
Institutional – Religious (River Valley Church)	70%
Commercial, Hotel, Industrial, Institutional (West Education Center, Lionsgate Academy), Office, Research & Development	85%

\*From zoning code and/or typical impervious coverage for these land uses

There is no regional ponding in the Opus Study Area. Compliance with stormwater regulation will need to be met through onsite, private Best Management Practices (BMPs). However, if multiple properties desire to provide a joint treatment system as redevelopment occurs, consideration can be given to creating a privately owned, regional BMP.

**Stormwater Analysis**

The requirements to meet the current stormwater regulations are shown in **Table 11-8**. Note that any redevelopment will be required to meet the stormwater regulations in place at the time of redevelopment. In Scenario 1, all the parcels that will redevelop have reduced or equal maximum impervious coverage based on the planned land uses and the City’s zoning code as described in **Table 11-5**. In Scenario 2, all parcels but three have reduced or equal maximum impervious coverage. The three parcels with increased maximum impervious coverages (10801 Red Circle Drive, 5959 Shady Oak Drive, and the parcel adjacent to the east) do not have existing BMPs.

Water Quantity: There are 87 parcels in Scenario 1 that will have an equal or reduced maximum allowable impervious coverage. Volume control will be required on all of these parcels as they redevelop.

There are 47 parcels in Scenario 2 that will have an equal or reduced maximum allowable impervious coverage. Volume control will be required on all of these parcels as they redevelop. Additionally, there are three parcels in Scenario 2 that will have an increased maximum allowable impervious coverage. Volume control and rate control will be required on these parcels as they redevelop.

**Table 11-6** summarizes the volume control required for each redevelopment scenario for the Opus site.

**Table 11-6: Volume Control Summary**

	Redeveloping Parcels	Total Impervious Area (ac)	Volume Control Required (cf)	Unit Volume Control Required (cf/ac)
Existing	N/A	124	N/A	N/A
Scenario 1	87	276	1,103,400	3,993
Scenario 2	50	112	448,400	

Water Quality: The water quality analysis was completed using NRCS runoff curve number methodology to calculate the runoff for each parcel. The resulting pollutant loading was calculated using Event Mean Concentration Values from the MPCA Stormwater Manual, based on the planned land uses for the Opus site.

The proposed pollutant load shows the effect of current water quality regulations (60% and 90% reductions in TP and TSS respectively) on the parcels that will redevelop. For sites where volume control is feasible, pollutant loads could be reduced even further than the values given, due to a decrease in total runoff.

Table 11-7 summarizes the annual pollutant loads for each redevelopment scenario for the Opus site.

**Table 11-7: Pollutant Load Summary**

	Scenario 1 - Redeveloping Parcels only			Scenario 2 - Redeveloping Parcels only		
	Existing	Proposed	Reduction	Existing	Proposed	Reduction
TP (lb/year)	487	195	292	228	90.8	137.2
TSS (tons/year)	88.1	8.9	79.2	40.9	4.1	36.8

**Table 11-8: Stormwater Requirements**

Case	Current Stormwater Requirements
<b>Parcels that are Redeveloping<sup>1</sup></b>	
If reduced or equal maximum allowable impervious percent:	
all parcels <sup>2</sup>	Retain 1.1 inches from all onsite impervious; Document that rate control is met for 2-, 10-, and 100-year events
If increased maximum allowable impervious percent:	
and have an existing BMP	Expand existing BMP and/or construct new BMP to retain 1.1 inches from all onsite impervious; Meet rate control for 2-, 10-, and 100-year events
and do not have an existing BMP	Construct a BMP to retain 1.1 inches from all onsite impervious; Meet rate control for 2-, 10-, and 100-year events
<b>Parcels that are not Redeveloping</b>	No action needed

<sup>1</sup>Assumptions: 50% or more of the impervious onsite will be disturbed or the impervious surface will be increased by 50% (triggering NMCWD rules); meeting abstraction requirements satisfies water quality requirements.

<sup>2</sup>Assumption: Discharge rates will remain equal or decrease from existing to proposed conditions.

### **Stormwater Mitigation**

The existing Best Management Practices (BMP) in the Opus Study Area are shown on **Figures 11-6** and **11-7**. There are four City-owned, protected wetlands, all of which are on parcels that will not redevelop in either scenario. There are 19 constructed or modified ponds that are regulated as wetlands and one constructed stormwater pond. The City's classification system of wetlands is shown in **Figure 11-1**. The wetland classifications are based on accepted Minnesota Routine Assessment Method results. It is anticipated that the constructed and/or modified ponds will continue to be used for stormwater management. It is assumed that these BMPs will provide the required rate control on parcels that will redevelop with equal or reduced impervious coverage, however, it should be noted that compliance with volume control and water quality standards will still be required.

The sequencing for proposed volume control BMPs is as follows:

1. Infiltration, including surface or underground, or stormwater reuse
2. Filtration, including biofiltration or enhanced sand filters
3. Restricted site sequencing:
  - i. Retention of 0.55 inches of runoff from all onsite impervious surfaces
  - ii. Retention of runoff onsite to the maximum extent practicable
  - iii. Off-site retention and treatment elsewhere within Nine Mile Creek Watershed or the use of the NMCWD volume-banking program to achieve the required volume control and water quality requirements

As previously stated, if sequencing options 2 or 3 are employed to meet volume control, at least 60% annual removal of TP and at least 90% annual removal of TSS from site runoff will need to be demonstrated.

Through direct emailing, social media, coordination with the local chamber of commerce, and through "Thrive Minnetonka" the cities business newsletter, the city encourages businesses and property managers to learn about and participate in smart salting training. The larger properties are required to sign a salt management plan as part of our development requirements.

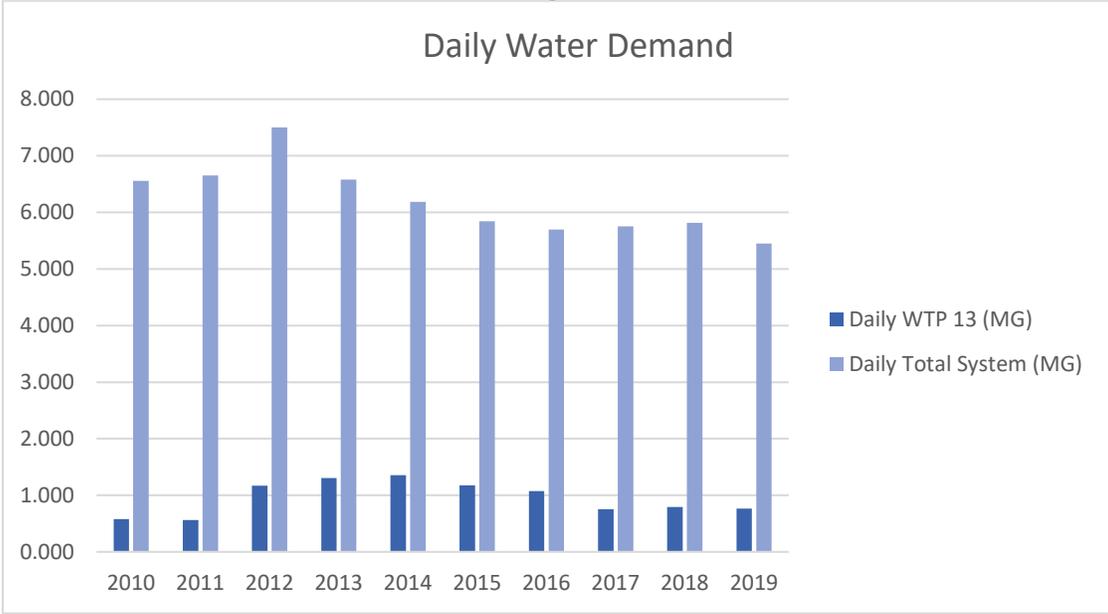
### iii. Water Appropriation

Construction dewatering will likely be required for development of sites within the Opus Study Area. Construction activities associated with dewatering will be required to follow all applicable permitting requirements, including Nine Mile Creek Watershed District Rule 9.0, and should only be necessary during excavation activities (utility installation, building footing installation, etc.).

The entire Opus Study Area is served by the Minnetonka municipal water distribution system. Water supply is provided by 18 wells located at eight water treatment plants (WTP) across the system. WTP #13 is the closest WTP in proximity to the Opus Study Area and provides a majority of the treated water supplied to the AUAR area. Wells 13 and 13A supply raw water to WTP #13 from the Prairie du Chien and Jordan aquifers. All of the wells and WTPs supply water to the entire distribution system so actual annual production for individual facilities depend on geographic demand and maintenance/improvements that require shutting down operations of individual system facilities for periods of time. The Minnetonka system is permitted (1979-6207) for an annual appropriation of 3,500 MG and had total demand of 1,989 MG in 2019. The water system and WTP #13 have daily treatment capacities of 12.8 MGD and 4.3 MGD respectively. The average daily demand in 2019 for the water system was 5.45 MGD and WTP #13 was 0.767 MGD which represents 42.6% and 17.8% of their respective

treatment capacities. Daily demand for WTP 13 and the entire water system has generally declined over the last decade (**Chart 11.1**).

**Chart 11-1: Daily Water Demand**



Analysis was conducted to determine the existing water demand generated from the Opus Study area. Existing land use and water use records were utilized to determine the existing water demand by land use (**Table 11.9**). The analysis assumed the following conditions:

- Medium Density Residential: 6 dwellings per acre, 2.4 people per dwelling
- High Density Residential
  - a. Existing: 24 dwellings per acre, 1.4 people per dwelling
  - b. Scenario 1: 32 dwellings per acre, 1.4 people per dwelling
  - c. Scenario 2: 44 dwellings per acre, 1.4 people per dwelling
- Commercial: 1 employee per 450 square feet
- Hotel: 1 employee per 1,750 square feet
- Industrial: 1 employee per 1,100 square feet
- Institutional: 1 employee per 1,500 square feet
- Office: 1 employee per 300 square feet
- Research and Development: 1 employee per 350 square feet

**Table 11-9: Existing Water Demand**

LAND USE	Usage per Unit (gpcd)	Average Day Demand (ADD) (gpd)	Peak Daily Factor	Peak Day Demand (PDD) (gpd)
MEDIUM DENSITY RESIDENTIAL (4-12 DU/AC.)	80	14,552	2.5	36,381
HIGH DENSITY RESIDENTIAL (Above 12 DU/AC.)	80	198,373	2.5	495,932
COMMERCIAL	15	3,321	2.5	8,302
GREEN LINE LRT				
HOTEL EMPLOYEES	15	1,958	2.5	4,894
HOTEL ROOMS	50	20,800	2.5	52,000
INDUSTRIAL	120	103,171	2.5	257,927
INSTITUTIONAL	15	5,110	2.5	12,775
OFFICE	15	157,604	2.5	394,009
RESEARCH & DEVELOPMENT	15	9,789	2.5	24,472
OPEN SPACE				
OPEN WATER				
RIGHT-OF-WAY (COLLECTORS AND ARTERIALS)				
<b>Total Existing Water Demand (2019)</b>		<b>514,677</b>		<b>1,286,693</b>

Based on the water demand data, the Opus Study Area currently generates an Average Daily Demand (ADD) of 514,700 gallons per day (gpd) and a Peak Daily Demand (PDD) of 1,287,000 gallons per day (gpd).

The proposed development for Scenario 1 and Scenario 2 were incorporated into the analysis to identify the additional water demand anticipated from the two individual development scenarios (**Tables 11-10 and 11-11** respectively).

**Table 11-10: Scenario 1 Water Demand**

LAND USE	Usage per Unit (gpcd)	Average Day Demand (ADD) (gpd)	Peak Daily Factor	Peak Day Demand (PDD) (gpd)
MEDIUM DENSITY RESIDENTIAL (4-12 DU/AC.)	80	14,552	2.5	36,381
HIGH DENSITY RESIDENTIAL (Above 12 DU/AC.)	80	275,987	2.5	689,969
COMMERCIAL	15	4,184	2.5	10,461
GREEN LINE LRT				
HOTEL EMPLOYEES	15	2,390	2.5	5,974
HOTEL ROOMS	50	25,550	2.5	63,875
INDUSTRIAL	120	167,140	2.5	417,849
INSTITUTIONAL	15	4,803	2.5	12,007
OFFICE	15	196,869	2.5	492,172
RESEARCH & DEVELOPMENT	15	19,501	2.5	48,751
OPEN SPACE				
OPEN WATER				
RIGHT-OF-WAY (COLLECTORS AND ARTERIALS)				
<b>Total Scenario 1 Water Demand</b>		<b>710,976</b>		<b>1,777,440</b>
<b>Scenario 1 Additional Water Demand</b>		<b>196,299</b>		<b>490,747</b>

Scenario 1 increases the ADD by 196,300 gpd and the PDD by 490,800 gpd. The projected additional ADD equates to approximately 5.3% of the remaining WTP #13 treatment capacity and 2.7% of the remaining system treatment capacity. The existing water distribution infrastructure has adequate capacity to accommodate the additional demand projected from Scenario 1.

**Table 11-11: Scenario 2 Water Demand**

LAND USE	Usage per Unit (gpcd)	Average Day Demand (ADD) (gpd)	Peak Daily Factor	Peak Day Demand (PDD) (gpd)
MEDIUM DENSITY RESIDENTIAL (4-12 DU/AC.)	80	14,552	2.5	36,381
HIGH DENSITY RESIDENTIAL (Above 12 DU/AC.)	80	575,331	2.5	1,438,326
COMMERCIAL	15	6,654	2.5	16,636
GREEN LINE LRT				
HOTEL EMPLOYEES	15	1,958	2.5	4,894
HOTEL ROOMS	50	20,800	2.5	52,000
INDUSTRIAL	120	72,839	2.5	182,098
INSTITUTIONAL	15	3,370	2.5	8,426
OFFICE	15	297,795	2.5	744,488
RESEARCH & DEVELOPMENT	15	14,036	2.5	35,090
OPEN SPACE				
OPEN WATER				
RIGHT-OF-WAY (COLLECTORS AND ARTERIALS)				
<b>Total Vision Scenario Water Demand</b>		<b>1,007,336</b>		<b>2,518,339</b>
<b>Vision Scenario Additional Water Demand</b>		<b>492,658</b>		<b>1,231,646</b>

Scenario 2 increases the ADD by 492,700 gpd and the PHD by 1,231,700 gpd. The projected additional ADD equates to approximately 13.2% of the remaining WTP #13 treatment capacity and 6.7% of the remaining system treatment capacity. The existing water distribution infrastructure has adequate capacity to accommodate the additional demand projected from the Scenario 2.

- iv. Surface Waters
  - a) Wetlands

A wetland delineation has not been completed for the entire project site. There are approximately 63 acres of wetland on site (**Figure 7-2**). Wetlands occur throughout the site, though a largest proportion of the wetlands are within the northcentral portion. Wetland impacts may occur as individual developments progress. Wetland impacts must be minimized to the greatest extent possible and reviewed through the local and federal wetland permitting processes. If wetland impact is proposed that cannot be avoided, mitigation per local and federal rules will be required.

- b) Other Surface Waters

Six of the wetlands described above are DNR Public Waters. If impacts are proposed to these wetlands, approval will be required through the DNR.

## 12) CONTAMINATION/HAZARDOUS MATERIALS/WASTES

### a. Pre-Project Site Conditions

The following online databases were reviewed on April 9, 2020 as part of this desktop environmental review:

- Minnesota Pollution Control Agency (MPCA) "What's in My Neighborhood?" website
- Minnesota Department of Agriculture (MDA) "What's in My Neighborhood?" website

### Study area Sites

Eighty-one sites were identified at the Study area (see **Figure 12-1**). The sites are associated with 113 total database listings. Nine Study area listings indicate a hazardous material spill or release (Brownfields and/or Leak Site listings) and are associated with six sites. Brownfields are potentially contaminated sites where the MPCA is assisting with environmental investigations and/or redevelopment activities. Non-petroleum brownfields are referred to as Voluntary Investigation and Cleanup (VIC) sites. Leak sites are locations where a release of petroleum products has occurred from a tank system. Site closure of Brownfields and Leak Site listings does not mean the site is free of contamination. Confirmed or potential contamination is a factor in determining if a site is restricted for stormwater volume retention practices. The restricted site sequencing, as stated in section 11.b.ii. is potentially applicable to the sites associated with potential contamination.

The following Study area sites are associated with potential contamination:

#### Site 12 – UnitedHealth Group, 9900 Bren Road East, Minnetonka, MN 55343

- Leak Site LS0008165: The identified leak was discovered in January 1995, consisted of fuel oil #1 and #2, did not impact groundwater, and was issued site closure by the MPCA in October 1995.
- Petroleum Brownfields PB4563: The site was enrolled in the Petroleum Brownfields Program from April 2014 to June 2014. The site is listed as inactive.

#### Site 14 – Minneapolis Mart, 10301 Bren Road West, Minnetonka, MN 55343

- Leak Site LS0005979: The identified leak was discovered in November 1992, consisted of fuel oil #1 and #2, did not impact groundwater, and was issued site closure by the MPCA in June 1993.

#### Site 57 – Johnson and Johnson, 11140 Bren Road West, Minnetonka, MN 55343

- Brownfields VP3600: The site was enrolled in the Voluntary Investigation and Cleanup (VIC) Program from September 1993 to January 1997. The site is listed as inactive.

#### Site 58 – Former Virtual Radiologic, 5995 Opus Parkway, Minnetonka, MN 55343

- Leak Site LS0017682: The identified leak was discovered in July 2009, consisted of fuel oil #1 and #2, did not impact groundwater, and was issued site closure by the MPCA in September 2009. The release was from an aboveground storage tank (AST).

#### Site 85 – Honeywell Minnetonka, 5400 Opportunity Court, Minnetonka, MN 55343

- Brownfields VP2150: The site was enrolled in the VIC Program from March 1992 to September 1996. The site is listed as inactive.
- Brownfields VP2151: The site was enrolled in the VIC Program a second time from July 1995 to March 1998. The site is listed as inactive.
- Brownfields VP2152: The site was enrolled in the VIC Program a third time from February 1999 to April 2001. The site is listed as inactive.

**Site 88 – Bren Tech Building, 11140 Bren Road West, Minnetonka, MN 55343**

- Leak Site LS0000823: The identified leak was discovered in November 1988 and was issued site closure in March 1993. The release was from an underground storage tank (UST). The type of product released is unknown.

An additional one-hundred-four database listings were identified at the Study area that do not indicate potential contamination. The listings are associated with 75 sites and include:

- Sixty-five hazardous waste generator listings. Inclusion on the hazardous waste generator database indicates the site generates hazardous waste requiring a permit\*;
- Twenty-two stormwater permit listings (15 industrial and 7 construction);
- Twelve listings were for sites with ASTs and/or USTs but do not necessarily indicate a petroleum spill or release;
- Two wastewater permit listings;
- Two air quality permit listings; and
- One toxics reduction / pollution prevention listing.

\*Resource Conservation and Recovery Act (RCRA) Remediation listings were cross listed with two hazardous waste generator listings. A RCRA Remediation site is a place where a business with a hazardous waste license may have released hazardous waste to the environment. These sites are investigated by the MPCA to decide if cleanup is warranted. If it is determined that little or no exposure potential exists and no further remedial actions are necessary, the site is closed and listed as inactive. RCRA Remediation listings do not directly indicate the presence of contamination.

**Adjacent Sites**

Nineteen sites were identified adjacent to the Study area (see **Figure 12-1**). The sites are associated with 25 total listings. The following adjacent sites are associated with potential contamination:

**Site 59 – ViroMed Laboratories, 6101 Blue Circle Drive, Minnetonka, MN 55343**

- Leak Site LS0018477: The identified leak was discovered in August 2011, consisted of diesel, did not impact groundwater, and was issued site closure by the MPCA in November 2011. The release was from a damaged AST.

**Site 83 – Children’s Business Campus, 5901 Lincoln Drive, Edina, MN 55435**

- Brownfields BF0000072: The site was enrolled in the VIC Program from February 2016 to June 2017. The site is listed as inactive.

**Site 98 – 9 Mile Creek Hopkins, No Address**

- Brownfields VP26770: The site was enrolled in the VIC Program from January 2010 to September 2014. The site is listed as inactive
- Brownfields VP26771: The site was enrolled in the VIC Program a second time from December 2010 August 2014. The site is listed as inactive

An additional twenty-one database listings were identified at adjacent sites that do not indicate potential contamination. The listings are associated with 16 sites and include:

- Eleven hazardous waste generator listings. Inclusion on the hazardous waste generator database indicates the site generates hazardous waste requiring a permit\*;
- Nine construction stormwater permit listings; and
- One tank (UST) listing, which does not necessarily indicate a petroleum spill or release.

\*RCRA Remediation and Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) listings were cross listed with one hazardous waste generator listing. Like RCRA Remediation listings, CERCLIS sites are investigated to determine if federal cleanup actions are necessary. If no action is warranted, the site is closed and listed as inactive.

### **Surrounding Area Sites**

Three MPCA sites (Sites 7, 25, 32) were identified in the surrounding area (beyond adjacent) within 1,000 feet of the Study area. The surrounding area sites are associated with three listings and do not indicate the presence of contamination.

One MPCA site (Site 103) was identified within 1,000 feet south of the Study area (beyond adjacent). Site 103 is listed as TruGreen Chemlawn along TH 62. The product type released is unknown and the site received closure in July 2007.

#### **b. Project Related Generation/Storage of Solid Wastes**

Development within the study area will generate solid waste and construction debris normal to construction. Solid waste and construction debris will be disposed of in conformance with state standards. This activity will be completed in conformance with state requirements and materials will be either recycled or hauled to an appropriate demolition landfill site.

#### **c. Project Related Use/Storage of Hazardous Materials**

Small amounts of hazardous materials typical of a construction site (e.g., fuel oil) will be stored in approved containers. As required by the NPDES Construction Stormwater Permit, the fuel containers will be required to have secondary containment by either being bermed or stored in a truck or other facility. Fuel trucks and any other hazardous material are required to be locked when not in use to avoid vandalism.

#### **d. Project Related Generation/Storage of Hazardous Wastes**

Construction within any of the subject parcels will not involve the generation of significant amounts of hazardous wastes.

Once construction is completed, it is anticipated that the waste generated will be of similar nature to household wastes and will be disposed of similarly. There are no gas stations proposed that would include storing of hazardous materials.

#### **e. Contamination/Hazardous Materials/Wastes Mitigation Plan**

- If contamination is encountered during project grading or development, grading activities will be suspended until material can be characterized and then disposed on in conformance with state requirements.
- The municipal waste hauler company will make residential and commercial recycling programs available to the area. General municipal waste will be removed by these waste hauler companies.
- Hazardous waste spills will be reported immediately to emergency response agencies via emergency dispatch service and addressed in conformance with state requirements.
- For all gas stations with underground tanks, annual licensing from the MPCA will be needed.
- Any business or institutional uses that use or store petroleum or other hazardous products will be subject to local and state rules regulating such uses.

### 13) FISH, WILDLIFE, PLANT COMMUNITIES, AND SENSITIVE ECOLOGICAL RESOURCES (RARE FEATURES)

#### a. Fish and Wildlife Resources

Current land cover is over 77% impervious, consisting of mostly buildings and pavement with the remaining land cover a mix of forest, wetland emergent vegetation, wetland open-water, short grasses, wetland shrubs, and maintained tall grass. With the exception of maintained tall grass, the remaining ~22% land cover may provide limited habitat for waterfowl. A portion of Nine Mile Creek runs through the northeast corner of the study area, providing fish habitat. There are no designated trout streams, Wildlife Management Areas, Waterfowl Production Areas, Wildlife Refuges, Reinvest in Minnesota (RIM) easements, wild rice lakes, or Outstanding Resource Value Waters (ORVWs) within any of the parcels. The Minnesota Land Cover Classification System (MLCCS) land cover data is shown in **Figure 7-1**. There are no Minnesota County Biological Survey (MCBS) or Areas of Ecological Significance within the Opus site. Lone Lake Park is approximately two miles from the Opus along Shady Oak Road and contains a mesic hardwood forest rare plant community.

#### b. Rare Features

The DNR reviewed the study area and provided recommendations regarding the project (ERBD 20200274) correspondence with the DNR is included in **Appendix B**. Their review indicated that the rusty-patched bumble bee has been documented near the site. This species is described further below.

The US Fish and Wildlife Service was also consulted regarding federally threatened and endangered species via their online Section 7 Consultation process. Based on this consultation, two federally listed species occur within Hennepin County. These species are summarized below.

- Northern long-eared bat (*Myotis septentrionalis*), a federally threatened species, is listed within Hennepin County. The Minnesota township map that documents known locations of bat roost trees and hibernacula was reviewed and the Opus site was not included.
- Rusty-patched bumble bee, noted previously as a state-watchlist species, is a federally endangered species. The Opus site is located within a high-potential zone for the bumble bee. Suitable habitat for the bee includes high quality foraging resources, nesting sites, overwintering sites, and protection from pesticides, introduced diseases, and other disturbances.

#### c. Effects on Fish, Wildlife, Plant Communities, Rare Features, and Ecosystems

The study area existing land use is mostly highly developed with some park/recreational/preserve areas, open water areas, and undeveloped parcels. The planned development will result in the development of a corridor of undeveloped land running north to south between Feltl Road and Conservatory Road and an undeveloped parcel between Blue Circle Dr and TH 169 in the south eastern portion of the study area. These sites do not provide significant habitat to wildlife. Wetland impacts that may occur as a result of development will be minimized per requirements of the Wetland Conservation Act and US Corps of Engineers and vetted through the regulatory permitting process. Mitigation for wetland impacts would occur at a 2:1 ratio.

#### **Invasive Species**

The site may contain some invasive species, although no site-specific information is currently available.

The US Department of Agriculture's National Invasive Species Information Center provides information regarding Best Management Practices to prevent or mitigate invasive species establishment or movement. Guidance for implementation at all parcels can be referenced at <https://www.invasivespeciesinfo.gov/toolkit/preventionbmp.shtml>. Appropriate actions such as cleaning equipment, chipping/destroying invasive species, and limiting and securing soil disturbances will help prevent the spread of the invasive/noxious species. If necessary, herbicide application to pockets of weed growth could be implemented during and after construction, especially if soil particles are staged or left for future phases.

- d. Measures to Avoid, Minimize, or Mitigate Adverse Effects (to fish, wildlife, plant communities, and sensitive ecological resources.)

The plan does not include significant park or open space development. It is expected that development will occur on areas that are currently mostly impervious surface; as such, these areas are not of significant plant or wildlife resources, or of any sensitive ecological resources. Minor impacts that may occur will be minimized per requirements of the Wetland Conservation Act and US Corps of Engineers and vetted through the regulatory permitting process. Mitigation for wetland impacts would occur at a 2:1 ratio.

### Protecting Pollinators

Pollinators are essential to our environment. The ecological service they provide is necessary for the reproduction of over 85% of the world's flowering plants, including more than two-thirds of the world's crop species. However, pollinator populations, including Monarch butterflies, have fallen significantly over the last few decades, primarily due to habitat loss, pesticide use, and climate change.

In urban areas, even small patches of habitat can provide vital habitat for monarchs and other pollinators. That is why the city of Minnetonka joined the Mayors' Monarch Pledge, a national program that helps cities educate and empower residents to protect monarchs and other beneficial insects, which play key roles in agriculture and the natural environment.

Consider these steps to make the urban landscape more pollinator-friendly:

- **Plant milkweed species native to Minnesota.** Milkweed is a great plant for pollinators. It's also the only plant that monarch caterpillars can eat. Many nurseries carry a variety of milkweeds, and some specialize in these and other native plants.
- **Plant native wildflowers** so your garden is continuously in bloom between late spring and early autumn, when monarchs and other pollinators are breeding and migrating.
- **Plant native trees and shrubs** such as black cherry and gray dogwood. Monarchs (and many other pollinators) visit these trees for nectar or shelter in their branches.
- **Manage invasive species.** Invasive plants, such as garlic mustard and buckthorn, spread rapidly and crowd out other plants. Where possible, remove invasives and replace with native species.
- **Convert some turf.** Some property owners are replacing turf with meadow vegetation, which is similar to the prairie that grew in this region before settlement. Meadow vegetation takes a few years to become established, but the deep-rooted plants capture a lot of water and provide excellent habitat for pollinators and birds.
- **Reduce or eliminate the use of chemicals.** Pesticides can inadvertently kill or harm beneficial insects as well as pests. Try ecological pest control instead. This approach focuses on maintaining a healthy, diverse landscape that is less vulnerable to pests. Apply chemical pesticides only when other strategies – such as horticultural oils or growth regulators – have failed. Target problem areas rather than broadcasting chemicals widely.

On June 22, 2020, the City Council approved a Proclamation declaring July 2020 as Monarch and Pollinator Awareness Month which stated the important elements to protecting pollinators.

On July 20, 2020, the City Council amended Minnetonka City Code Section 845.030 relating to lawn maintenance to:

1. promote alternative lawn practices that benefit pollinators
2. reduce barriers to residents adopting these practices
3. articulate maintenance standards for alternative lawns to protect public health, safety, and welfare
4. advance the city's commitment to goals outlined in the Mayors' Monarch Pledge.

Increasing pollinator habitat has the additional benefits of:

- capturing lawn maintenance runoff
- reducing erosion
- improving air quality
- limiting the need for chemical inputs
- enhancing the community's overall climate resilience.

e. Fish, Wildlife, and Ecologically Sensitive Resources Mitigation Plan

The following mitigation measures will be employed for Scenarios 1 and 2:

- Implement the Mayor's Monarch Pledge.
- Enforce Section 845.030 including encouraging the use of meadow vegetation and pollinator lawns.
- Coordination with the USFWS will be necessary as redevelopment progresses to determine the potential for impact to the bee.
- Wetlands will need to be delineated in conformance with the Wetland Conservation Act as part of the redevelopment process. The City of Minnetonka will review and verify the wetland delineation.
- Wetland impact is anticipated to be minimized to the maximum extent practical and feasible throughout the review area. If wetland impacts are proposed, wetland mitigation will be required of the project proposer pursuant to current wetland regulations and City requirements.
- Nine Mile Creek Watershed District will require buffers around wetlands at a width dependent upon the wetland's management classification, per their rules.
- If tree removal must occur as part of development, it should be completed between August – May to avoid impacts to northern long-eared bats.
- Storm water management and landscape features should incorporate native plantings of grasses, pollinator species, trees, and shrubs.
- Tree removal within the study area that occurs as part of development will need to meet the requirements of the City's Tree Protection Ordinance.

#### 14) HISTORICAL PROPERTIES

The State Historic Preservation Office was contacted regarding historic resources in the area. The review concluded that four historic/architectural sites, Bridges 27545 and 27546, a farmstead, and a cemetery are located on or near the study area (**Appendix B**). The bridges are located eastbound and westbound on Shady Oak Road over TH 62. The farmstead is located on Feltl Road just south of Smetana Road. Saint Margaret's Cemetery is located on Bred Road E, just east of Shady Oak Road. No impacts to these resources are anticipated as a result of development in the study area in either Scenario 1 or 2.

## 15) VISUAL

The Opus Study Area is currently a developed area. Redevelopment within the study area will be similar in nature to existing development in the area. Therefore, no visual impacts are anticipated. No vapor plumes or intense lighting will result from development of the subject parcels.

## 16) AIR

### a. Stationary Source Emissions

No stationary source emissions exist that would require a Minnesota Pollution Control Agency (MPCA) air emissions permit or are proposed as part of the proposed site development. The Opus Study Area would not have the potential to emit new source review and hazardous air pollutants as defined by the MPCA.

### b. Vehicle Emissions

The EPA has identified a group of 93 compounds emitted from mobile sources that are listed in their Integrated Risk Information System. In addition, the EPA identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers. These are acrolein, benzene, 1,3-butadiene, diesel particulate matter, plus diesel exhaust organic gases (diesel PM), formaldehyde, naphthalene, and polycyclic organic matter. While Federal Highway Administration (FHWA) considers these the priority mobile source air toxics, the list is subject to change and may be adjusted in consideration of future EPA rules. EPA rule requires controls that will dramatically decrease Mobile Source Air Toxins (MSAT) emissions through cleaner fuels and cleaner engines.

For this AUAR, the amount of MSAT emitted would be proportional to the average daily traffic (ADT). The ADT estimated for the proposed site development is higher than that for the no build condition, because the project involves redevelopment that produces additional trips. This increase in ADT means MSAT under the build scenarios would probably be higher than the no build condition in the study area. There could also be localized differences in MSAT from indirect effects of the project such as associated access traffic, emissions of evaporative MSAT (e.g., benzene) from parked cars, and emissions of diesel particulate matter from delivery trucks. Travel to other destinations would be reduced with subsequent decreases in emissions at those locations.

Improvements in vehicle technology and in motor fuel regulations continue to result in reductions in vehicle emission rates. The EPA MOVES 2010b emissions model estimates that emission rates will continue to decline from existing rates through year 2040. Consequently, year 2040 vehicle-related CO concentrations in the study area are likely to be lower than existing concentrations even considering the increase in development-related and background traffic.

The U.S. Environmental Protection Agency has designated all of Hennepin, Ramsey, Anoka, and portions of Carver, Scott, Dakota, Washington, and Wright Counties as a maintenance area for carbon monoxide. The Opus Study Area is in Hennepin County which is in the carbon monoxide maintenance area.

The EPA has approved a screening method to determine which intersections need hot-spot analysis. The hot-spot screening method uses a traffic volume threshold of 82,300 entering vehicles per day. None of the intersections within the Opus Study Area meet this threshold of vehicles per day. Based on the proposed volumes, the proposed development scenarios do not exceed thresholds that would require a quantitative MSAT analysis; therefore, the project is not expected to adversely affect air quality.

Minnetonka continuously reviews the city’s asset management and city infrastructure, including fleet operations. The capital improvements program has designated funding to further review and plan for sustainable initiatives for the development, planning and implementation of green and sustainable improvements related to major equipment, including the addition of electronic charging stations beginning in 2021.

In summary, it is expected there will be slightly higher MSAT emissions in the study area with the project relative to the no build condition due to increased ADT. There also could be increases in MSAT levels in a few localized areas where ADT increases. However, the EPA's vehicle and fuel regulations will bring about significantly lower MSAT levels for the area in the future when compared to today.

c. Dust and Odors

During construction, particulate emissions will temporarily increase due to generation of fugitive dust. The nearest and most sensitive receptors to the construction activity are the residential properties that immediately surround the property. Construction dust control is required to be in conformance with City of Minnetonka’s ordinances and the NPDES Construction Stormwater permit. The construction and operation of the proposed site development is not anticipated to involve processes that would generate odors.

**17) NOISE**

As stated in the AUAR guidelines, construction noise need not be addressed unless there is some unusual reason to do so. No unusual circumstances have been identified that would necessitate a detailed noise analysis. The following is a summary of the existing and anticipated noise conditions.

The two development scenario’s discussed in the Opus Study Area includes: Scenario 1 containing development of medium density residential, high density residential, commercial, two hotels, industrial, institutional, offices, and research and development, and: Scenario 2 containing the same land uses as Scenario 1 with a greater intensity.

Noise levels on and adjacent to the site will vary considerably during construction depending on the pieces of construction equipment being operated simultaneously, the percent of time in operation, and the distance from the equipment to the receptors. Construction equipment will be fitted with mufflers that would be maintained throughout the construction process. **Table 17-1** below summarizes the peak noise levels of common types of roadway construction equipment.

**Table 17-1: Typical Roadway Construction Equipment Noise Levels at 50 Feet**

Equipment Type	Manufacturers Sampled	Total Number of Models in Sample	Peak Noise Level	
			Range	Average
Backhoe	5	6	74-92	83
Front Loader	5	30	75-96	85
Dozer	8	41	65-95	85
Grader	3	15	72-92	84
Scraper	2	27	76-98	87
Pile Driver	N/A	N/A	95-105	101

Source: United States Environmental Protection Agency and Federal Highway Administration

The developments within the Opus Study Area will be constructed in accordance with the city’s established noise ordinance as outlined in the City Code. It is anticipated that noise levels will temporarily increase locally during each project construction but would be expected to return to intensities consistent with existing levels and sources following project completion.

The State of Minnesota's noise rules are found in Minnesota Rules Chapter 7030 (Noise Pollution Control). Under Minnesota Rules 7030.0030 (Noise Control Requirement), local governments are required to take reasonable measures to prevent the approval of land use activities that will violate the state noise standards immediately upon the establishment of the land use.

Minnesota Rules 7030.0030 states:

*No person may violate the standards established in part 7030.0040, unless exempted by Minnesota Statutes, section 116.07, subdivision 2a. Any municipality having authority to regulate land use shall take all reasonable measures within its jurisdiction to prevent the establishment of land use activities listed in noise area classification (NAC) 1, 2, or 3 in any location where the standards established in part 7030.0040 will be violated immediately upon establishment of the land use.*

The nearest potential sensitive noise receptors adjacent to the Opus Study Area include: medium and high-density residential north of Smetana Road; single family residential and medium residential east of TH 169, medium density residential west of the AUAR area between Pompano Drive and Shady Oak Road (CSAH 61), a City park located on Green Circle Drive within the AUAR area, and the Nine Mile Creek and Minnesota River Bluffs regional trails north of the AUAR area.

In general, a sound increase of 3-dBA is barely noticeable by the human ear, a 5-dBA increase is clearly noticeable, and a 10-dBA increase is heard as twice as loud. For example, if the sound energy is doubled (i.e., the amount of traffic doubles), there is a 3-dBA increase in noise, which is just barely noticeable to most people. On the other hand, if traffic increases by a factor of 10, the resulting sound level will increase by about 10-dBA and be heard as twice as loud.

The noise sources in the Opus Study Area consist mainly of traffic on the area freeways and roadways. Traffic volumes on the adjacent roadways in the Opus Study Area, at full development, are projected to be below the amount that would generate a sound increases that could be noticeable. The change in traffic noise levels is not anticipated to be readily perceptible, especially since both scenarios are related to redevelopment as opposed to new development. The Opus Study Area will be developed such that any land use activities that are sensitive (i.e., residential units or parks) to noise will have sufficient setbacks and landscaping within and adjacent to each specific project boundary to help minimize and mitigate the effects of the anticipated noise generated from the project. These details will be determined as each development proceeds.

#### Noise Mitigation Plan

- Development adjacent to land uses that are sensitive (i.e., residential units or parks) to noise will have sufficient setbacks and landscaping within and adjacent to each specific project boundary to help minimize and mitigate the effects of the anticipated noise generated from the project.

**18) TRANSPORTATION**

a. Describe Traffic

**Existing Traffic Conditions**

The Opus Study Area is bounded by TH 169 on the east, TH 62 on the south, Shady Oak Road (Hennepin County Road 61) on the west and Smetana Road on the north, shown on **Figure 18-1**. TH 169 and TH 62 are principal arterial freeways. Shady Oak Road is a four-lane divided arterial and Smetana Road is a two-lane collector street. The access to the site from TH 169 is via the Bren Road Interchange and Shady Oak Road provides access to TH 62. Bren Road is a primary access route through the study area along with the access to Shady Oak Road. The site has access to Shady Oak Road via Smetana Road, and Red Circle Drive. The existing AADT's are shown on Figure 18-1 along with the key intersections serving the site. AM and PM peak hour turning movements were collected in February of 2020 prior to any restrictions associated with the COVID 19 pandemic. These turning movements are shown on Figures **18-2 to 18-5**.

The study area is relatively developed and currently generates around 75,000 trips per day with approximately 4,900 am peak hour trips and 5,200 pm peak hour trips. The current trip generation estimate is shown in **Table 18-1**. A high percentage of the trips are inbound in the morning and outbound in the evening due to the office warehouse and industrial uses on the site. The peak hour estimate was verified by comparing the estimate with the turning movements at the major site access points. The peak hour estimates are slightly higher than the counts. A traffic operations analysis was completed for the key intersections and the results are shown in **Table 18-2 and Table 18-3**. All of the intersections currently operated at level of service "C" or better in the am and pm peak hours, although some movements at the intersections have lower levels of service. Turning movements with a level of service of "D" are highlighted in yellow and level of service of "E" are highlighted in orange.

**Table 18-1: Existing 2020 Trip Generation**

Land Use Code	Units	Expected Units (independent variable)	Daily Trips	AM Peak Hour Total Trips	AM In	AM Out	Reduction Rate %	AM Peak Hour Total Trips After Reduction	AM In Trips After Reduction	AM Out Trips After Reduction	PM Peak Hour Total Trips	PM In	PM Out	Reduction Rate %	PM Peak Hour Total Trips After Reduction	PM In Trips After Reduction	PM Out Trips After Reduction
IND	1000 sq. ft	1,024	2,210	433	332	101	10	389	300	89	485	130	355	10	419	117	321
HDR	Dwelling Units	1,676	12,469	747	171	576	10	672	154	518	855	540	315	10	770	486	284
HTL	Rooms	416	3,594	192	107	85	25	151	85	66	246	126	120	25	194	99	95
INST	1000 sq. ft	433	6,633	1,061	771	290	10	956	695	261	532	274	258	30	479	247	232
O	1000 sq. ft	2,669	27,349	3,033	2,610	423	15	2,578	2,218	360	2,987	479	2,508	15	2,539	407	2,132
RD	1000 sq. ft	228	2,567	96	72	24	10	87	65	22	112	17	95	10	101	15	86
C	1000 sq. ft	100	20,413	143	90	53	30	100	63	37	1,109	655	454	30	777	459	318
Total			75,235	5,705	4,153	1,552		4,933	3,580	1,353	6,326	2,221	4,105		5,279	1,830	3,468

**Table 18-2: Measures of Effectiveness for Existing 2020 AM Peak Hour**

Intersection		Appr	Total Delay by Movement			LOS by Movement			LOS by Approach (Sec/Veh)		LOS by Intersection (Sec/Veh)		Average & Maximum Traffic Queueing (feet)									
Control	Location		L	T	R	L	T	R	Delay	LOS	Delay	LOS	Left-Turn			Through			Right-Turn			
													Ave Queue	Max Queue	Storage	Ave Queue	Max Queue	Storage	Ave Queue	Max Queue	Storage	
Signalized	1: TH 169 NB Ramp & Bren Rd	NB	30	0	12	C	A	B	27	C	25	C	NB	203	340	320	243	357		46	207	300
		WB	0	20	7	A	C	A	16	B			WB				96	196				
		EB	34	19	0	C	B	A	27	C			EB	74	126		86	163				
Signalized	2: TH 169 SB Ramp & Bren Rd	WB	8	4	0	A	A	A	4	A	16	B	WB	29	65	140	65	141				
		SB	32	0	33	C	A	C	33	C			SB	67	142	500	226	349		207	345	500
		EB	0	25	6	A	C	A	14	B			EB				65	120		52	94	
Signalized	3: Bren Rd & Smetana Dr	WB	0	7	4	A	A	A	7	A	14	B	WB				152	295		70	165	140
		SB	59	0	58	E	A	E	59	E			SB	219	374							
		EB	52	4	0	D	A	A	7	A			EB	20	60	120	28	70				
Signalized	4: Shady Oak Rd & Dominick Dr/Smetana Dr	NB	11	8	5	B	A	A	8	A	7	A	NB	1	16	300	31	96		2	17	300
		WB	17	21	4	B	C	A	9	A			WB	34	91	180	1	12		27	65	230
		SB	7	6	2	A	A	A	6	A			SB	8	31	300	63	132		1	12	300
		EB	16	18	4	B	B	A	9	A			EB	7	36	150	11	37				
Signalized	5: Shady Oak Rd & Bren Rd	NB	16	21	10	B	C	B	14	B	22	C	NB	22	68	225	59	115		88	199	225
		WB	53	26	5	D	C	A	39	D			WB	188	338		27	131		37	63	30
		SB	22	17	5	C	B	A	18	B			SB	74	167	475	79	161		8	78	150
		EB	29	31	16	C	C	B	24	C			EB	26	111	150	83	178				
Signalized	6: Shady Oak Rd & Red Circle Dr N	NB	0	2	0	A	A	A	2	A	6	A	NB				32	95				
		WB	51	0	5	D	A	A	38	D			WB	71	161					23	55	
		SB	0	5	0	A	A	A	5	A			SB				47	118				
Thru-St	7: Shady Oak Rd & Red Circle Dr S	NB	0	2	4	A	A	A	3	A			NB					8				
		SB	6	2	0	A	A	A	2	A			SB	26	68	230						
Signalized	8: Shady Oak Rd & TH 62 WB Ramp	NB	46	12	0	D	B	A	15	B	20	C	NB	48	94	240	152	318				
		WB	40	0	30	D	A	C	36	D			WB	148	250	420	170	282		135	270	420
		SB	0	13	2	A	B	A	12	B			SB				89	186		17	46	
Signalized	9: Shady Oak Rd & TH 62 EB Ramp/62nd St	NB	0	32	9	A	C	A	30	C	29	C	NB				191	332		22	99	300
		WB	51	0	34	D	A	C	38	D			WB	30	64	110				61	145	110
		SB	36	7	0	D	A	A	18	B			SB	147	229	250	69	119				
		EB	40	52	18	D	D	B	37	D			EB	208	364	560	190	408		93	261	500

**Table 18-3: Measures of Effectiveness for Existing 2020 PM Peak Hour**

Control	Intersection Location	Appr	Average & Maximum Traffic Queueing (feet)									Appr	Average & Maximum Traffic Queueing (feet)									
			Total Delay by Movement			LOS by Movement			LOS by Approach (Sec/Veh)		LOS by Intersection (Sec/Veh)		Left-Turn			Through			Right-Turn			
			L	T	R	L	T	R	Delay	LOS	Delay		LOS	Ave Queue	Max Queue	Storage	Ave Queue	Max Queue	Storage	Ave Queue	Max Queue	Storage
Signalized	1: TH 169 NB Ramp & Bren Rd	NB	33	33	7	C	C	A	26	C	15	B	NB	47	133	320	100	188		33	64	300
		WB	0	24	15	A	C	B	20	C			WB				85	195				
		EB	13	2	0	B	A	A	9	A			EB	146	208		18	83				
Signalized	2: TH 169 SB Ramp & Bren Rd	WB	35	2	0	D	A	A	12	B	9	A	WB	60	124	140						
		SB	35	0	5	D	A	A	15	B			SB	64	137	500	28	59		32	73	500
		EB	0	9	5	A	A	A	7	A			EB				95	175		65	144	
Signalized	3: Bren Rd & Smetana Dr	WB	0	3	2	A	A	A	2	A	7	A	WB				21	51		27	63	140
		SB	31	0	25	C	A	C	31	C			SB	104	205							
		EB	8	5	0	A	A	A	5	A			EB	34	113	120	102	197				
Signalized	4: Shady Oak Rd & Dominick Dr/Smetana Rd	NB	7	6	6	A	A	A	6	A	6	A	NB	11	51	300	30	104		2	20	300
		WB	55	0	11	E	A	B	24	C			WB	23	70	180				24	61	230
		SB	14	2	1	B	A	A	4	A			SB	37	104	300	13	57		1	16	300
		EB	63	0	4	E	A	A	31	C			EB	8	26	150	6	23				
Signalized	5: Shady Oak Rd & Bren Rd	NB	10	9	6	B	A	A	9	A	16	B	NB	26	66	225	79	190		15	55	225
		WB	47	36	16	D	D	B	35	D			WB	161	298		54	161		47	59	30
		SB	19	11	4	B	B	A	11	B			SB	12	39	475	45	104		5	32	150
		EB	41	39	11	D	D	B	31	C			EB	53	141	150	40	143				
Signalized	6: Shady Oak Rd & Red Circle Dr N	NB	0	9	0	A	A	A	9	A	14	B	NB				133	258				
		WB	49	0	15	D	A	B	37	D			WB	208	366					63	157	
		SB	0	5	0	A	A	A	5	A			SB				39	103				
Thru-Sm	7: Shady Oak Rd & Red Circle Dr S	NB	0	2	1	A	A	A	2	A			NB									
		SB	11	1	0	B	A	A	2	A			SB	32	84	230						
Signalized	8: Shady Oak Rd & TH 62 WB Ramp	NB	30	5	0	C	A	A	13	B	16	B	NB	146	230	240	71	161				
		WB	49	0	19	D	A	B	24	C			WB	16	61	420	48	114		70	145	420
		SB	0	21	10	A	C	B	18	B			SB				109	203		67	159	
Signalized	9: Shady Oak Rd & TH 62 EB Ramp/62nd St	NB	0	25	4	A	C	A	24	C	23	C	NB				171	290		12	44	300
		WB	49	0	27	D	A	C	28	C			WB	18	100	110				178	415	110
		SB	41	4	0	D	A	A	9	A			SB	25	77	250	15	62				
		EB	51	37	6	D	D	A	30	C			EB	57	109	560	13	46		33	86	500

The Southwest LRT line is currently being constructed and will bisect the site in a north/south direction with a station located between Bren Road West and Bren Road East (as shown in **Figure 18-6**). The City expects significant development in the area of the LRT station. As part of the LRT construction, the City of Minnetonka is proposing to reverse the direction of travel on Red Circle Drive east of the Red Circle Drive cross-over east of Shady Oak Road. This will eliminate the weave between inbound traffic and outbound traffic and will improve flow where Red Circle crosses the LRT line. The City of Minnetonka will also reverse the direction of travel on Green Oak Drive to provide better circulation around the future development near the Opus LRT Station.

### Future Traffic Conditions with Development

Traffic forecasts were developed for the two development scenarios considered in this AUAR for the year 2040. The Trip Generation estimate for the proposed development scenarios are shown in **Tables 18-4 and 18-5**. Based on data from the LRT studies for this corridor it was estimated that 5% of the site generated trips would use the LRT. Other reductions of peak hour trip generation were estimated consistent with the estimates for the existing conditions. It was estimated that the Scenario 1 would generate approximately 6,200 am peak hour trips and 6,800 pm peak hour trips at the site access intersections. This represents about 1,300 more am peak hour trips and about 1,600 more pm peak hour trips than are currently generated in the study area. The site will still have a heavy inbound percentage of the am peak hour and in the outbound percentage of the pm peak hour. In Scenario 2, the site is estimated to generate approximately 8,200 am peak hour trips and 9,500 pm peak hour trips at the site access points. This is an increase of 3,300 am trips and 4,300 pm peak hour trips.

**Table 18-4: Scenario 1 2040 Trip Generation**

Land Use Code	Units	Expected Units (independent variable)	Daily Trips	AM Peak Hour Total Trips	AM In	AM Out	Reduction Rate %	AM Peak Hour Total Trips After Reduction	AM In Trips After Reduction	AM Out Trips After Reduction	PM Peak Hour Total Trips	PM In	PM Out	Reduction Rate %	PM Peak Hour Total Trips After Reduction	PM In Trips After Reduction	PM Out Trips After Reduction
IND	1000 sq. ft	1,532	3,011	513	394	119	15	439	335	104	546	146	400	15	465	126	339
HDR	Dwelling Units	2,408	17,919	1,080	247	833	15	945	216	729	1,251	789	462	15	1,096	691	405
HTL	Rooms	511	4,491	238	132	106	30	174	97	77	306	158	148	30	226	117	109
INST	1000 sq. ft	480	7,359	1,129	823	306	15	961	700	261	596	305	291	45	506	259	247
O	1000 sq. ft	3,930	39,941	4,336	3,729	607	20	3,467	2,983	484	4,347	698	3,649	20	3,477	557	2,920
RD	1000 sq. ft	455	5,123	191	143	48	15	163	122	41	223	33	190	15	190	28	162
C	1000 sq. ft	125	25,516	179	112	67	35	116	73	43	1,386	819	567	35	900	532	368
Total			103,360	7,666	5,580	2,086		6,265	4,526	1,739	8,655	2,948	5,707		6,860	2,310	4,550

**Table 18-5: Scenario 2 2040 Trip Generation**

Land Use Code	Units	Expected Units (independent variable)	Daily Trips	AM Peak Hour Total Trips	AM In	AM Out	Reduction Rate %	AM Peak Hour Total Trips After Reduction	AM In Trips After Reduction	AM Out Trips After Reduction	PM Peak Hour Total Trips	PM In	PM Out	Reduction Rate %	PM Peak Hour Total Trips After Reduction	PM In Trips After Reduction	PM Out Trips After Reduction
IND	1000 sq. ft	1,269	2,507	430	332	98	15	369	284	85	459	124	335	15	392	107	285
HDR	Dwelling Units	3,931	29,153	1,772	407	1,365	15	1,506	346	1,160	2,071	1,306	765	15	1,760	1,109	651
HTL	Rooms	416	3,594	192	107	85	30	141	79	62	246	126	120	30	182	93	89
INST	1000 sq. ft	337	5,527	972	706	266	10	827	600	227	440	229	211	30	374	195	179
O	1000 sq. ft	5,763	57,954	6,316	5,431	885	20	5,053	4,344	709	6,382	1,020	5,362	20	5,105	815	4,290
RD	1000 sq. ft	328	3,693	138	103	35	15	118	88	30	161	24	137	15	136	20	116
C	1000 sq. ft	200	51,930	350	229	121	35	227	149	78	2,522	1,432	1,090	35	1,639	931	708
Total			154,358	10,170	7,315	2,855		8,241	5,890	2,351	12,281	4,261	8,020		9,588	3,270	6,318

The AADT forecasts for the two development scenarios are shown on **Figure 18-1**. The peak hour turning movement forecasts for the two development scenarios are shown on **Figures 18-2 to 18-5**. The 2040 forecasts in both development scenarios assume growth in background traffic related to development in Eden Prairie and Edina. The site development traffic forecasts follow the typical trip generation, trip distribution and traffic assignment process. The estimated approach direction trip distribution is shown on **Figure 18-7**. This analysis was completed using TransModeler software.

b. Effects on Traffic Congestion

An analysis was completed for the key intersections based on the forecast traffic volumes for each development scenario and the existing geometry. The results of that analysis for Scenario 1 are presented in **Tables 18-6 and 18-7** for Scenario 2 are presented in **Tables 18-8 thru 18-11**. Turning movements with a level of service of "D" are highlighted in yellow, level of service of "E" are highlighted in orange, and level of service "F" are highlighted in red.

**Table 18-6: Measures of Effectiveness for Scenario 1 2040 AM Peak Hour**

Intersection		Appr	Total Delay by Movement			LOS by Movement			LOS by Approach (Sec/Veh)		LOS by Intersection (Sec/Veh)		Average & Maximum Traffic Queueing (feet)									
Control	Location		L	T	R	L	T	R	Delay	LOS	Delay	LOS	Left-Turn			Through			Right-Turn			
													Ave Queue	Max Queue	Storage	Ave Queue	Max Queue	Storage	Ave Queue	Max Queue	Storage	
Signalized	1: TH 169 NB Ramp & Bren Rd	NB	34	0	20	C	A	C	32	C	29	C	NB	216	329	320	257	399		53	203	300
		WB	0	37	16	A	D	B	30	C			WB				151	269				
		EB	27	13	0	C	B	A	21	C			EB	100	177		88	179				
Signalized	2: TH 169 SB Ramp & Bren Rd	WB	21	19	0	C	B	A	19	B	21	C	WB	47	89	140	147	247				
		SB	20	0	26	C	A	C	25	C			SB	55	139	500	232	344		213	331	500
		EB	0	35	6	A	D	A	19	B			EB				100	197		54	100	
Signalized	3: Bren Rd & Smetana Dr	NB	0	0	0	A	A	A	0	A	13	B	NB									
		WB	0	9	6	A	A	A	9	A			WB				195	308		111	165	140
		SB	49	0	50	D	A	D	49	D			SB	192	361							
		EB	49	4	0	D	A	A	6	A			EB	20	63	120	41	109				
Signalized	4: Shady Oak Rd & Dominick Dr/Smetana Rd	NB	12	8	5	B	A	A	8	A	7	A	NB	4	25	300	36	108		7	36	300
		WB	17	11	5	B	B	A	10	B			WB	27	78	180	1	13		28	58	230
		SB	9	6	1	A	A	A	6	A			SB	11	35	300	67	138			6	300
		EB	22	9	6	C	A	A	10	B			EB	8	30	150	16	54				
Signalized	5: Shady Oak Rd & Bren Rd	NB	15	17	12	B	B	B	14	B	21	C	NB	22	70	225	62	141		100	227	225
		WB	46	25	6	D	C	A	30	C			WB	136	268		27	100		41	62	30
		SB	33	16	5	C	B	A	21	C			SB	142	289	475	75	172		7	74	150
		EB	31	32	18	C	C	B	25	C			EB	29	114	150	98	236				
Signalized	6: Shady Oak Rd & Red Circle Dr N	NB	0	4	0	A	A	A	4	A	10	B	NB				62	165				
		WB	42	0	6	D	A	A	36	D			WB	167	310					22	62	
		SB	0	6	0	A	A	A	6	A			SB				53	138				
Thru-Sk	7: Shady Oak Rd & Red Circle Dr S	NB	0	3	5	A	A	A	4	A			NB				2	54		1	35	200
		SB	7	2	0	A	A	A	2	A			SB	27	72	230		10				
Signalized	8: Shady Oak Rd & TH 62 WB Ramp	NB	50	36	0	D	D	A	37	D	30	C	NB	55	176	240	510	697				
		WB	38	0	33	D	A	C	36	D			WB	173	308	420	202	327		158	295	420
		SB	0	19	3	A	B	A	17	B			SB				123	263		30	92	
Signalized	9: Shady Oak Rd & TH 62 EB Ramp/62nd St	NB	0	65	34	A	E	C	63	E	36	D	NB				369	703		88	325	300
		WB	47	0	37	D	A	D	39	D			WB	31	69	110				67	166	110
		SB	43	6	0	D	A	A	20	C			SB	175	263	250	51	119				
		EB	37	50	23	D	D	C	36	D			EB	197	307	560	193	352		113	231	500

**Table 18-7: Measures of Effectiveness for Scenario 1 2040 PM Peak Hour**

Control	Intersection Location	Appr	Total Delay by Movement		LOS by Movement			LOS by Approach (Sec/Veh)		LOS by Intersection (Sec/Veh)		Average & Maximum Traffic Queueing (feet)										
												Left-Turn			Through			Right-Turn				
												Ave Queue	Max Queue	Storage	Ave Queue	Max Queue	Storage	Ave Queue	Max Queue	Storage		
Signalized	1: TH 169 NB Ramp & Bren Rd	NB	39	52	10	D	D	B	31	C	16	B	NB	59	160	320	114	210		43	108	300
		WB	0	23	19	A	C	B	21	C			WB				94	162				
		EB	13	2	0	B	A	A	10	B			EB	119	357		10	120				
Signalized	2: TH 169 SB Ramp & Bren Rd	NB	0	0	0	A	A	A	0	A	10	B	NB									
		WB	45	4	0	D	A	A	17	B			WB	67	112	140	26	74				
		SB	34	0	7	C	A	A	13	B			SB	78	158	500	46	88		45	95	500
		EB	0	10	7	A	B	A	8	A			EB				116	258		81	156	
Signalized	3: Bren Rd & Smetana Dr	WB	0	4	3	A	A	A	4	A	9	A	WB				36	79		30	50	140
		SB	32	0	24	C	A	C	30	C			SB	128	255							
		EB	11	7	0	B	A	A	7	A			EB	31	143	120	148	271				
Signalized	4: Shady Oak Rd & Dominick Dr/Smetana Dr	NB	6	6	6	A	A	A	6	A	6	A	NB	11	41	300	32	111		3	19	300
		WB	56	0	14	E	A	B	30	C			WB	25	67	180				18	51	230
		SB	19	2	1	B	A	A	4	A			SB	31	73	300	18	62		1	17	300
		EB	65	0	4	E	A	A	29	C			EB	9	36	150	6	30				
Signalized	5: Shady Oak Rd & Bren Rd	NB	12	11	8	B	B	A	11	B	18	B	NB	27	70	225	53	180		16	82	225
		WB	46	36	24	D	D	C	34	C			WB	120	258		127	277		53	62	30
		SB	29	9	3	C	A	A	13	B			SB	37	101	475	37	112		3	18	150
		EB	45	35	14	D	D	B	33	C			EB	63	154	150	49	157				
Signalized	6: Shady Oak Rd & Red Circle Dr N	NB	0	27	0	A	C	A	27	C	29	C	NB				260	393				
		WB	48	0	21	D	A	C	42	D			WB	469	651				198	634		
		SB	0	13	0	A	B	A	13	B			SB				73	151				
Signalized	7: Shady Oak Rd & Red Circle Dr S	NB	0	3	2	A	A	A	3	A			NB				4	68				
		SB	17	2	0	C	A	A	3	A			SB	32	83	230						
		EB											EB									
Signalized	8: Shady Oak Rd & TH 62 WB Ramp	NB	32	7	0	C	A	A	15	B	16	B	NB	167	253	240	116	238				
		WB	51	0	23	D	A	C	30	C			WB	31	114	420	69	134		77	179	420
		SB	0	13	10	A	B	B	12	B			SB				98	176		86	204	
Signalized	9: Shady Oak Rd & TH 62 EB Ramp/62nd St	NB	0	36	7	A	D	A	35	D	29	C	NB				249	425		20	227	300
		WB	57	0	27	E	A	C	28	C			WB	21	154	110				218	493	110
		SB	68	4	0	E	A	A	12	B			SB	38	75	250	17	50				
		EB	59	30	8	E	C	A	37	D			EB	82	151	560	16	51		33	100	500

**Table 18-8: Measures of Effectiveness for Scenario 2 2040 AM Peak Hour – No Mitigation**

Intersection		Appr	Total Delay by Movement			LOS by Movement			LOS by Approach (Sec/Veh)		LOS by Intersection (Sec/Veh)		Appr	Average & Maximum Traffic Queueing (feet)								
Control	Location		L	T	R	L	T	R	Delay	LOS	Delay	LOS		Left-Turn			Through			Right-Turn		
														Ave Queue	Max Queue	Storage	Ave Queue	Max Queue	Storage	Ave Queue	Max Queue	Storage
Signalized	1: TH 169 NB Ramp & Bren Rd	NB	56	0	40	E	A	D	54	D	44	D	NB	254	344	320	283	454		70	320	300
		WB	0	45	24	A	D	C	39	D			WB				181	324				
		EB	25	9	0	C	A	A	20	C			EB	137	211		50	150				
Signalized	2: TH 169 SB Ramp & Bren Rd	WB	21	23	0	C	C	A	23	C	32	C	WB	47	82	140	194	311				
		SB	32	0	52	C	A	D	50	D			SB	52	127	500	354	469		355	486	500
		EB	0	36	7	A	D	A	21	C			EB				139	255		64	110	
Signalized	3: Bren Rd & Smetana Dr	WB	0	8	6	A	A	A	8	A	36	D	WB				199	358		107	165	140
		SB	286	0	397	F	A	F	303	F			SB	758	870							
		EB	50	3	0	D	A	A	4	A			EB	19	61	120	41	98				
Signalized	4: Shady Oak Rd & Dominick Dr/Smetana Rd	NB	14	8	5	B	A	A	8	A	8	A	NB	5	25	300	39	108		7	34	300
		WB	19	20	5	B	C	A	10	B			WB	29	81	180	1	18		30	71	230
		SB	9	7	2	A	A	A	7	A			SB	9	42	300	86	166		1	16	300
		EB	16	6	6	B	A	A	8	A			EB	8	34	150	16	49				
Signalized	5: Shady Oak Rd & Bren Rd	NB	15	19	48	B	B	D	37	D	53	D	NB	20	65	225	226	596		205	250	225
		WB	74	28	6	E	C	A	43	D			WB	172	342		41	134		44	63	30
		SB	156	24	8	F	C	A	77	E			SB	436	500	475	532	1112		5	47	150
		EB	32	34	22	C	C	C	28	C			EB	33	131	150	120	252				
Signalized	6: Shady Oak Rd & Red Circle Dr N	NB	0	13	0	A	B	A	13	B	17	B	NB				165	303				
		WB	38	0	8	D	A	A	33	C			WB	280	494					38	80	
		SB	0	10	0	A	B	A	10	B			SB				86	204				
Thru-Sk	7: Shady Oak Rd & Red Circle Dr S	NB	0	3	5	A	A	A	4	A			NB					6				
		SB	9	2	0	A	A	A	3	A			SB	42	108	230						
Signalized	8: Shady Oak Rd & TH 62 WB Ramp	NB	47	44	0	D	D	A	44	D	33	C	NB	55	346	240	635	704				
		WB	42	0	46	D	A	D	44	D			WB	181	307	420	221	368		253	399	420
		SB	0	13	3	A	B	A	11	B			SB				111	224		34	87	
Signalized	9: Shady Oak Rd & TH 62 EB Ramp/62nd St	NB	0	411	580	A	F	F	419	F	155	F	NB				1701	1955		159	325	300
		WB	48	0	36	D	A	D	39	D			WB	30	71	110				72	158	110
		SB	52	8	0	D	A	A	24	C			SB	190	358	250	94	151				
		EB	166	122	92	F	F	F	136	F			EB	534	585	560	1389	2513		236	525	500

**Table 18-9: Measures of Effectiveness for Scenario 2 2040 PM Peak Hour – No Mitigation**

Intersection		Appr	Total Delay by Movement			LOS by Movement			LOS by Approach (Sec/Veh)		LOS by Intersection (Sec/Veh)		Average & Maximum Traffic Queueing (feet)									
Control	Location		L	T	R	L	T	R	Delay	LOS	Delay	LOS	Left-Turn			Through			Right-Turn			
													Ave Queue	Max Queue	Storage	Ave Queue	Max Queue	Storage	Ave Queue	Max Queue	Storage	
Signalized	1: TH 169 NB Ramp & Bren Rd	NB	62	70	13	E	E	B	51	D	23	C	NB	142	244	320	185	274		46	141	300
		WB	0	26	21	A	C	C	24	C			WB				105	217				
		EB	17	2	0	B	A	A	13	B			EB	144	289		15	90				
Signalized	2: TH 169 SB Ramp & Bren Rd	WB	46	4	0	D	A	A	14	B	16	B	WB	69	124	140	36	80				
		SB	32	0	10	C	A	B	13	B			SB	73	154	500	71	131		61	136	500
		EB	0	22	11	A	C	B	17	B			EB				291	356		128	215	
Signalized	3: Bren Rd & Smetana Dr	WB	0	5	3	A	A	A	4	A	15	B	WB				56	113		35	75	140
		SB	44	0	41	D	A	D	43	D			SB	176	305							
		EB	27	16	0	C	B	A	16	B			EB	71	145	120	268	318				
Signalized	4: Shady Oak Rd & Dominick Dr/Smetana Rd	NB	7	5	5	A	A	A	5	A	5	A	NB	12	40	300	31	102		4	20	300
		WB	60	0	10	E	A	B	38	D			WB	19	53	180				11	42	230
		SB	16	2	1	B	A	A	4	A			SB	31	87	300	16	76		1	16	300
		EB	42	0	4	D	A	A	20	C			EB	9	42	150	8	27				
Signalized	5: Shady Oak Rd & Bren Rd	NB	11	10	9	B	B	A	10	B	17	B	NB	24	68	225	41	100		14	49	225
		WB	47	44	28	D	D	C	36	D			WB	112	215		169	365		54	60	30
		SB	29	8	3	C	A	A	13	B			SB	49	134	475	42	102		4	25	150
		EB	51	37	15	D	D	B	35	D			EB	56	150	150	49	147				
Signalized	6: Shady Oak Rd & Red Circle Dr N	NB	0	90	0	A	F	A	90	F	60	E	NB				399	417				
		WB	58	0	24	E	A	C	51	D			WB	634	665					626	663	
		SB	0	23	0	A	C	A	23	C			SB				125	213				
Thru-Sl	7: Shady Oak Rd & Red Circle Dr S	NB	0	43	9	A	E	A	31	D			NB				294	331		218	225	200
		SB	17	3	0	C	A	A	4	A			SB	31	78	230	1	28				
Signalized	8: Shady Oak Rd & TH 62 WB Ramp	NB	37	89	0	D	F	A	75	E	47	D	NB	389	721	240	664	758				
		WB	46	0	41	D	A	D	42	D			WB	20	87	420	64	170		184	323	420
		SB	0	23	12	A	C	B	19	B			SB				167	270		123	244	
Signalized	9: Shady Oak Rd & TH 62 EB Ramp/62nd St	NB	0	318	314	A	F	F	318	F	222	F	NB				1479	1949		105	325	300
		WB	62	0	128	E	A	F	127	F			WB	521	1412	110				864	1560	110
		SB	80	4	0	F	A	A	11	B			SB	36	80	250	20	59				
		EB	631	322	273	F	F	F	514	F			EB	429	585	560	1005	2298		57	523	500

**Table 18-10: Measures of Effectiveness for Scenario 2 2040 AM Peak Hour with Mitigation**

Intersection		Appr	Total Delay by Movement			LOS by Movement			LOS by Approach (Sec/Veh)		LOS by Intersection (Sec/Veh)		Appr	Average & Maximum Traffic Queueing (feet)								
Control	Location		L	T	R	L	T	R	Delay	LOS	Delay	LOS		Left-Turn			Through			Right-Turn		
														Ave Queue	Max Queue	Storage	Ave Queue	Max Queue	Storage	Ave Queue	Max Queue	Storage
Signalized	1: TH 169 NB Ramp & Bren Rd	NB	42	0	26	D	A	C	40	D	35	D	NB	245	329	320	280	360		42	93	300
		WB	0	42	19	A	D	B	35	D			WB				163	288				
		EB	26	9	0	C	A	A	20	C			EB	144	232		54	153				
Signalized	2: TH 169 SB Ramp & Bren Rd	WB	22	23	0	C	C	A	23	C	37	D	WB	47	84	140	192	283				
		SB	36	0	66	D	A	E	64	E			SB	58	201	500	427	661		425	555	500
		EB	0	37	8	A	D	A	22	C			EB				132	216		67	145	
Signalized	3: Bren Rd & Smetana Dr	WB	0	10	6	A	B	A	10	B	12	B	WB				233	376		125	240	140
		SB	42	0	25	D	A	C	39	D			SB	156	289					33	108	300
		EB	53	5	0	D	A	A	6	A			EB	20	64	120	51	123				
Signalized	4: Shady Oak Rd & Dominick Dr/Smetana Rd	NB	13	7	4	B	A	A	7	A	7	A	NB	3	22	300	34	103		5	28	300
		WB	19	8	5	B	A	A	10	B			WB	29	77	180	1	17		30	71	230
		SB	9	7	2	A	A	A	7	A			SB	9	37	300	84	169		1	9	300
		EB	19	5	7	B	A	A	10	B			EB	10	40	150	16	56				
Signalized	5: Shady Oak Rd & Bren Rd	NB	16	17	26	B	B	C	23	C	25	C	NB	20	66	225	69	363		200	324	225
		WB	71	27	6	E	C	A	41	D			WB	166	336		24	73		35	96	30
		SB	23	17	6	C	B	A	19	B			SB	79	158	475	85	206		5	24	150
		EB	33	35	21	C	D	C	28	C			EB	28	87	150	118	234				
Signalized	6: Shady Oak Rd & Red Circle Dr N	NB	0	9	0	A	A	A	9	A	15	B	NB				111	311				
		WB	37	0	12	D	A	B	33	C			WB	185	280					40	93	
		SB	0	10	0	A	B	A	10	B			SB				97	222				
Signalized	7: Shady Oak Rd & Red Circle Dr S	NB	0	7	4	A	A	A	5	A	5	A	NB				91	248		45	186	
		SB	54	2	0	D	A	A	6	A			SB	98	194	230	3	67				
Signalized	8: Shady Oak Rd & TH 62 WB Ramp	NB	56	8	0	E	A	A	11	B	19	B	NB	52	110	25	125	182				
		WB	52	0	33	D	A	C	43	D			WB	219	380	420	256	387		182	297	420
		SB	0	9	2	A	A	A	8	A			SB				64	185		28	91	
Signalized	9: Shady Oak Rd & TH 62 EB Ramp/62nd St	NB	0	53	14	A	D	B	51	D	36	D	NB				321	542		59	400	300
		WB	45	0	25	D	A	C	30	C			WB	30	79	110				55	134	110
		SB	52	9	0	D	A	A	24	C			SB	183	292	250	131	183				
		EB	43	51	26	D	D	C	40	D			EB	231	354	560	192	350		126	304	500

**Table 18-11: Measures of Effectiveness for Scenario 2 2040 PM Peak Hour with Mitigation**

Intersection		Appr	Total Delay by Movement			LOS by Movement			LOS by Approach (Sec/Veh)		LOS by Intersection (Sec/Veh)		Average & Maximum Traffic Queueing (feet)									
Control	Location		L	T	R	L	T	R	Delay	LOS	Delay	LOS	Left-Turn			Through			Right-Turn			
													Ave Queue	Max Queue	Storage	Ave Queue	Max Queue	Storage	Ave Queue	Max Queue	Storage	
Signalized	1: TH 169 NB Ramp & Bren Rd	NB	67	0	12	E	A	B	54	D	28	C	NB	160	280	320	202	351		39	90	300
		WB	0	26	21	A	C	C	24	C			WB				92	207				
		EB	26	2	0	C	A	A	20	C			EB	254	475		38	478				
Signalized	2: TH 169 SB Ramp & Bren Rd	WB	46	3	0	D	A	A	13	B	12	B	WB	67	113	140	17	75				
		SB	37	0	10	D	A	B	14	B			SB	74	154	500	77	138		46	126	500
		EB	0	15	8	A	B	A	12	B			EB				161	334		100	184	
Signalized	3: Bren Rd & Smetana Dr	WB	0	4	3	A	A	A	4	A	8	A	WB				55	117		36	79	140
		SB	31	0	5	C	A	A	24	C			SB	91	210					29	64	300
		EB	13	8	0	B	A	A	8	A			EB	30	53	120	203	295				
Signalized	4: Shady Oak Rd & Dominick Dr/Smetana Dr	NB	8	6	5	A	A	A	6	A	6	A	NB	12	46	300	36	86		5	64	300
		WB	39	0	18	D	A	B	30	C			WB	19	50	180				13	47	230
		SB	21	2	1	C	A	A	4	A			SB	28	70	300	19	67		1	16	300
		EB	45	0	4	D	A	A	21	C			EB	7	48	150	6	24				
Signalized	5: Shady Oak Rd & Bren Rd	NB	18	15	10	B	B	B	15	B	20	C	NB	42	89	225	110	202		37	98	225
		WB	53	38	23	D	D	C	34	C			WB	122	242		107	256		99	130	30
		SB	25	10	5	C	B	A	13	B			SB	31	66	475	38	99		4	33	150
		EB	49	32	16	D	C	B	34	C			EB	70	158	150	59	170				
Signalized	6: Shady Oak Rd & Red Circle Dr N	NB	0	33	0	A	C	A	33	C	35	D	NB				286	404				
		WB	48	0	24	D	A	C	43	D			WB	594	600					588	636	
		SB	0	17	0	A	B	A	17	B			SB				129	221				
Signalized	7: Shady Oak Rd & Red Circle Dr S	NB	0	5	2	A	A	A	4	A	6	A	NB				62	127		38	91	
		SB	30	6	0	C	A	A	7	A			SB	63	117	230	21	255				
Signalized	8: Shady Oak Rd & TH 62 WB Ramp	NB	35	5	0	D	A	A	13	B	17	B	NB	188	219	240	100	201				
		WB	42	0	28	D	A	C	30	C			WB	16	52	420	64	125		175	338	420
		SB	0	19	16	A	B	B	18	B			SB				206	297		158	261	
Signalized	9: Shady Oak Rd & TH 62 EB Ramp/62nd St	NB	0	39	8	A	D	A	38	D	30	C	NB				287	505		25	400	300
		WB	57	0	31	E	A	C	32	C			WB	47	260	110				215	381	110
		SB	77	1	0	E	A	A	8	A			SB	33	91		17	48				
		EB	55	33	9	E	C	A	41	D			EB	109	181	560	19	48		33	88	500

In Scenario 1, all of the key intersections are expected to still operate at an acceptable level of service in the am and pm peak hours. The Shady Oak Road and TH 62 EB ramp intersection is expected to fall from a level of service “C” to level of service “D” in this scenario. In the pm peak hour, all of the intersections are expected to operate at level of service “C” or better.

In Scenario 2, the following intersections are expected to have unacceptable levels of service in either the AM or PM peak hours.

- SB TH 169 Ramp intersection with Bren Road (AM peak hour)
- Smetana Lane and Bren Road (AM peak hour)
- Red Circle Drive N and Shady Oak Road (PM peak hour)
- Red Circle Drive S and Shady Oak Road (AM peak hour)
- TH 62 EB Ramp and Shady Oak Road (AM peak hour)

c. Identify measures that will be taken to minimize or mitigate project related transportation effects.

No mitigation is required for Scenario 1.

For Scenario 2, the following mitigation is required:

1. Add a second right turn lane on southbound TH 169 exit ramp to Bren Road with a minimum storage of 300 feet. (Intersection 2)
2. Add right turn lane on southbound Smetana at Bren Road with a storage of 300 feet and convert the existing shared left and right turn lane to left turn only, thus providing two left turn only lanes. (Intersection 3) (Currently two lanes and would need to add a lane)
3. Add second left turn lane on Southbound Shady Oak Road at Bren Road with a minimum storage of 300 feet. Need protected left turn movements on east/west approaches to this intersection. (Intersection 6)
4. Add an additional left turn lane with a minimum storage of 500 feet on westbound Red Circle Drive North at the approach to Shady Oak Road, thus providing this approach with dual lefts and a right turn lane. (Intersection 7)
5. Signalize the south intersection of Shady Oak Road and Red Circle Drive South. (Intersection 8)
6. At Shady Oak Road and Red Circle Drive South, allow right turns from the outside northbound through lane into Red Circle Drive. Extend the existing right turn lane all the way to the TH 62 westbound ramps intersection. (Intersection 8)
7. Reconfigure the Shady Oak Drive northbound approach at the TH 62 westbound ramps intersection to allow a third northbound through lane which drops into the right turn lane at Red Circle Drive. Shorten the inside left-turn lane so that only four lanes are needed under the TH 62 bridge. (Intersection 9)

With the above mitigation, an acceptable level of service can be maintained at the key intersections into the site under Scenario 2. The results of the analysis of the intersections with the above improvements for the AM and PM peak hours is shown in Tables **18-5 to 18-6**.

It may be some time before these improvements are needed and they will depend on the timing and location of development. There are three general areas that account for most of the increased trip generation between Scenario 1 and Scenario 2. One of the areas is located around the Opus LRT Station site in the middle of the study area. Another is located on the south end of Blue Circle Drive. The last area is located near Shady Oak Road along Red Circle Drive. The City should monitor traffic levels as development occurs within the Opus Study Area and should do additional traffic evaluation if development in these areas exceed the Scenario 1 development levels identified to determine when the mitigation needs to be implemented.

#### **19) CUMULATIVE POTENTIAL EFFECTS**

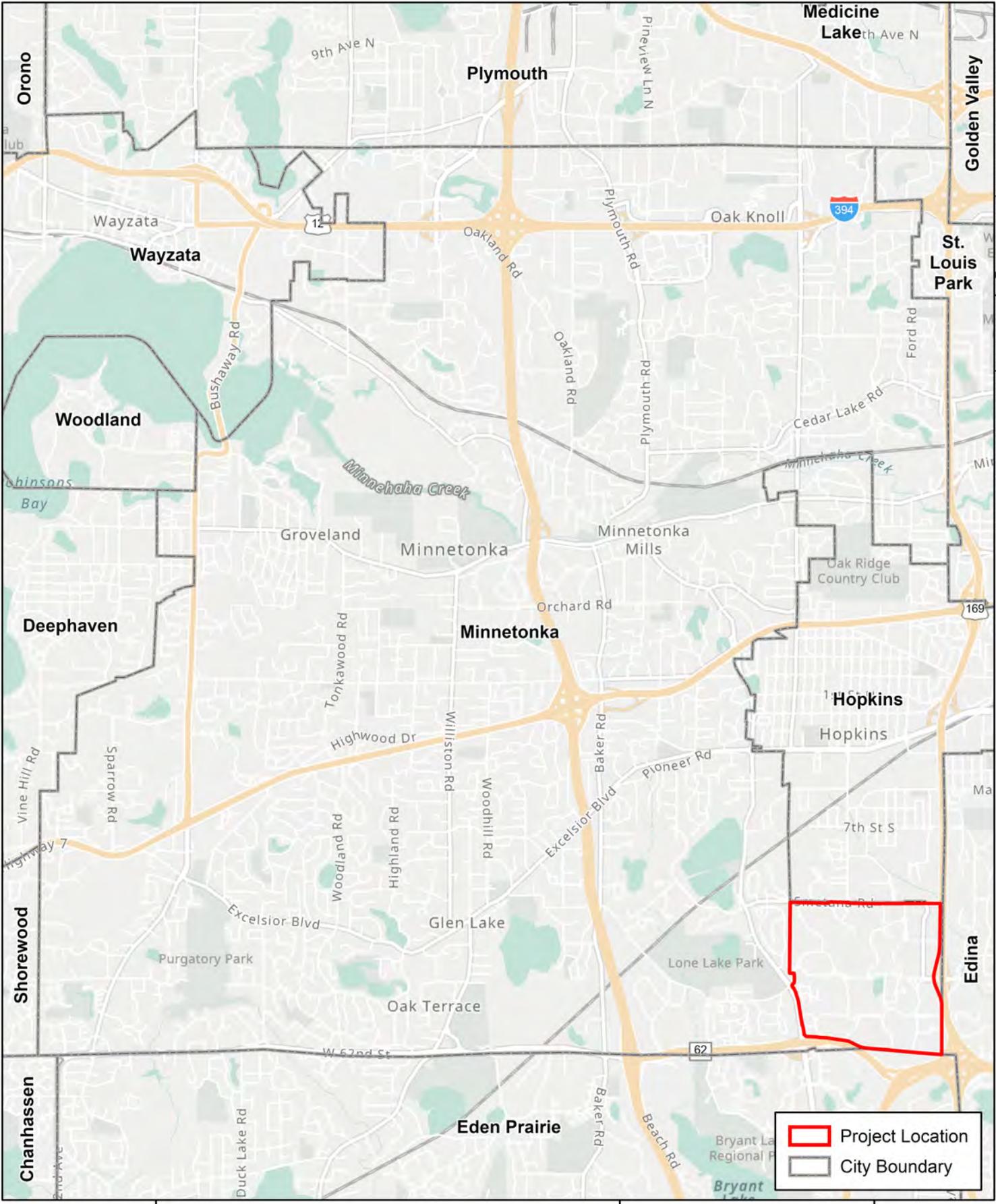
The AUAR itself analyzed cumulative impacts of development in this area and identified impact to infrastructure. Guidance for the AUAR states that because an AUAR by its nature is intended to deal with cumulative potential effects from future development within the AUAR, the AUAR should focus on influence of the development by past, present, or reasonably foreseeable future projects outside of the study area. There are no cumulative impacts other than those addressed throughout the AUAR.

#### **20) OTHER POTENTIAL ENVIRONMENTAL EFFECTS**

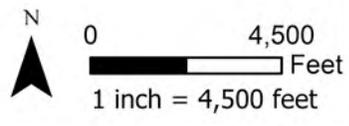
If the project may cause any additional environmental effects not addressed by items 1 to 19, describe the effects here, discuss the how the environment will be affected, and identify measures that will be taken to minimize and mitigate these effects.

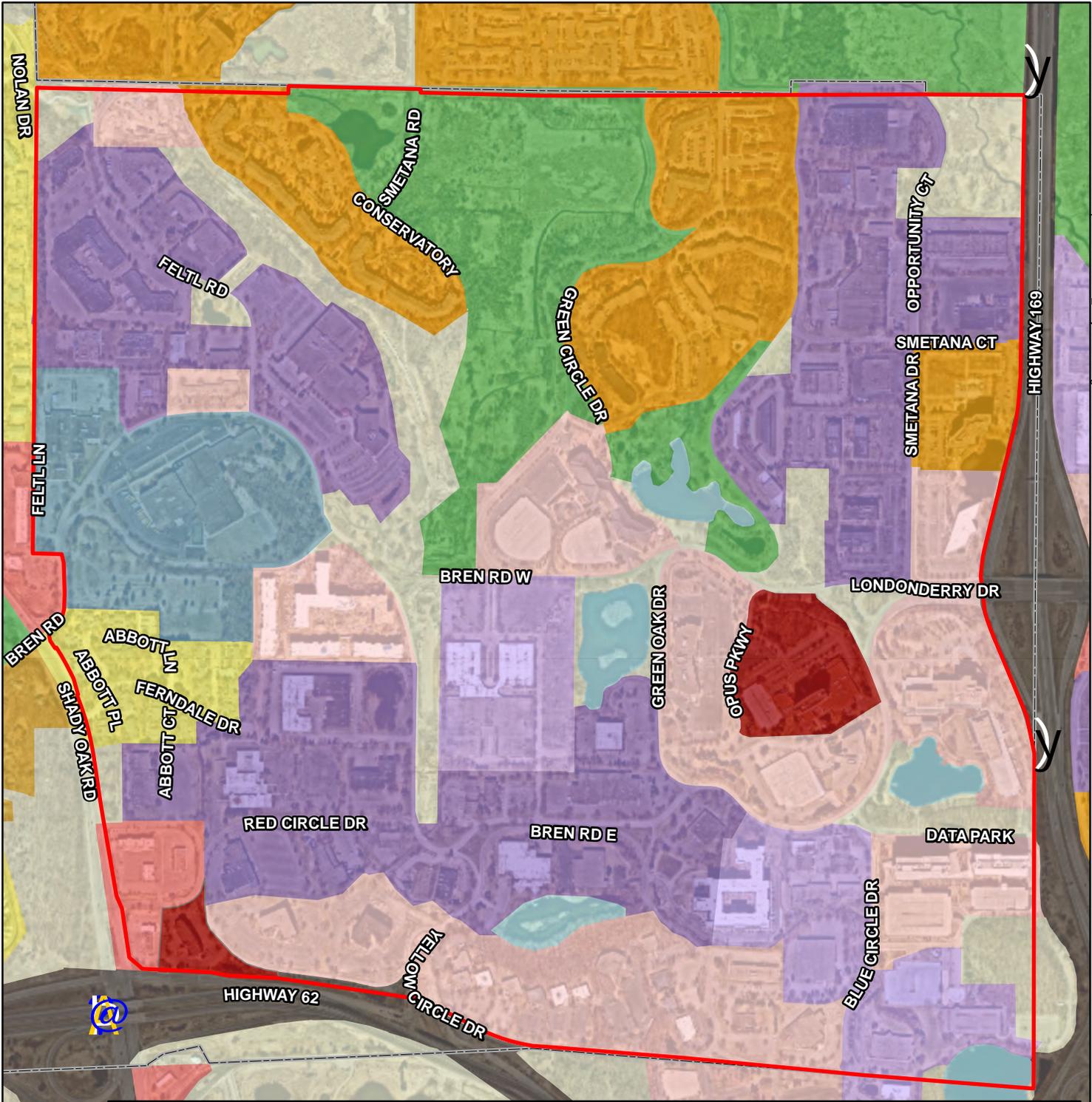
No additional environmental effects have been identified.

**APPENDIX A**  
Figures



**Figure 5-1 - General Location Map**  
Opus AUAR  
Minnetonka, MN



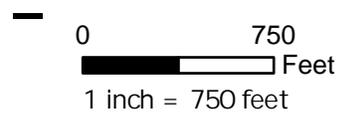


	Project Location		Multifamily		Park, Recreational, or Preserve
	City Boundary		Office		Major Highway
Existing Land Use					
	Single Family Attached		Retail and Other Commercial		Undeveloped
	Single Family Detached		Mixed Use Industrial		Hotel
			Industrial and Utility		Open Water
			Institutional		



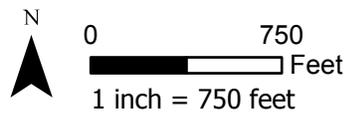
**Figure 5.2 - Existing Land Use Map**

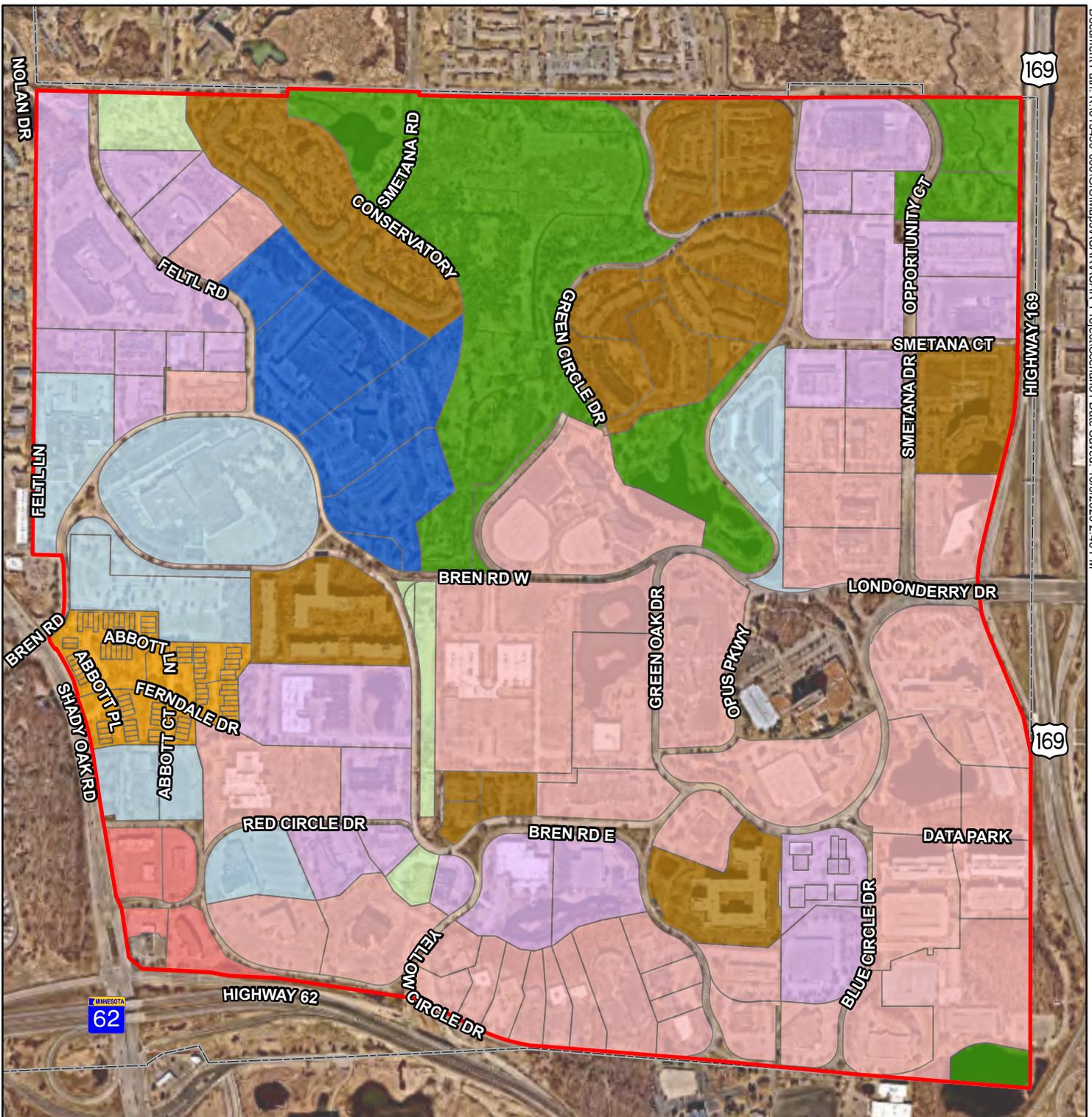
Opus AUAR  
Minnetonka, MN



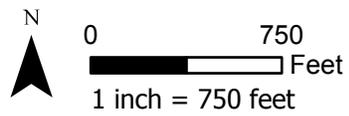


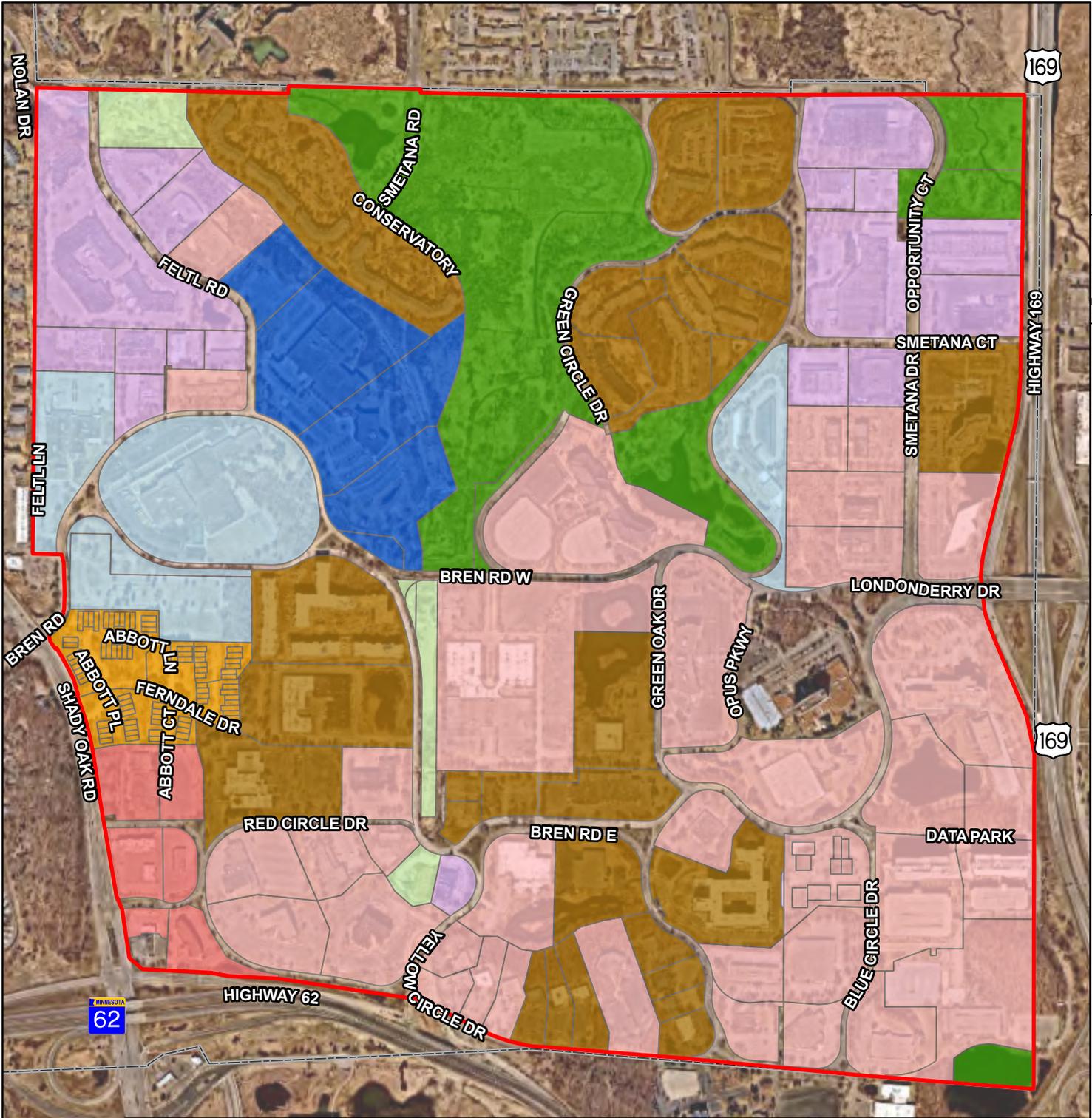
**Figure 5-3 - Aerial Map**  
Opus AUAR  
Minnetonka, MN





**Figure 6.1 - Scenario 1**  
Opus AUAR  
Minnetonka, MN

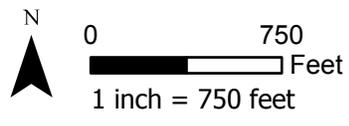


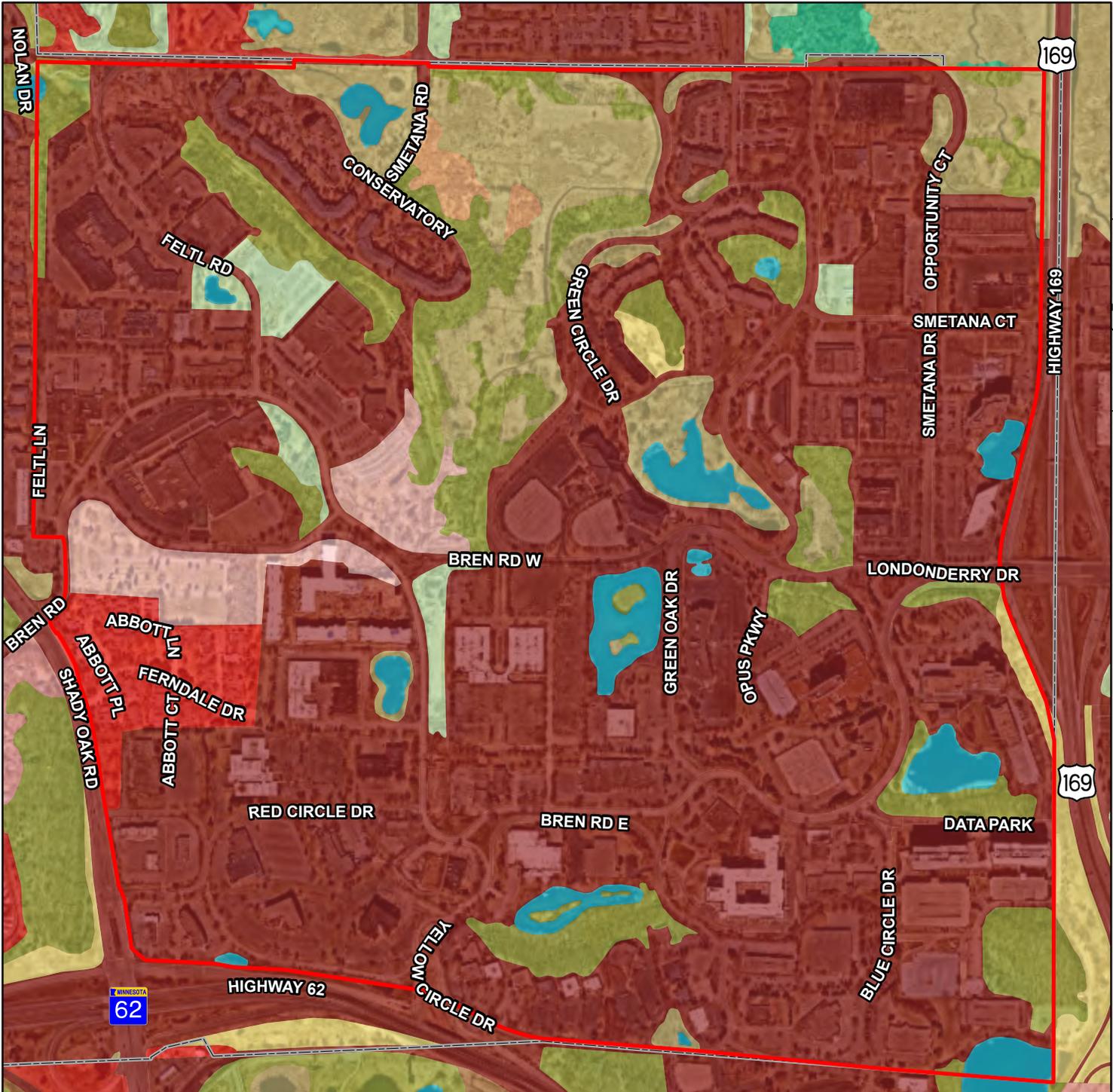


Project Location	High Density Residential	Institutional
City Boundary	Commercial	Open Space
Scenario 2 Land Use Medium Density Residential	Office	Research & Development
	Mix Use	Metro Transit/Green Line LRT
	Industrial	



**Figure 6.2 - Scenario 2**  
Opus AUAR  
Minnetonka, MN



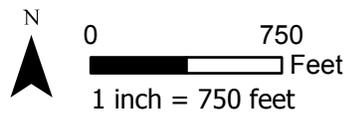


Project Location	51-75% Impervious	Wetland Forest
City Boundary	76-100% Impervious	Wetland Shrubs
Minnesota Land Cover Classification		
5-10% Impervious	Short Grasses	Tall Grasses
11-25% Impervious	Maintained Tall Grass	Wetland Emergent Veg.
26-50% Impervious	Tree Plantation	Dry Tall Grasses
	Forest	Wetland Open Water



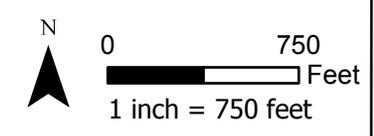
**Figure 7.1 - MLCCS Map**

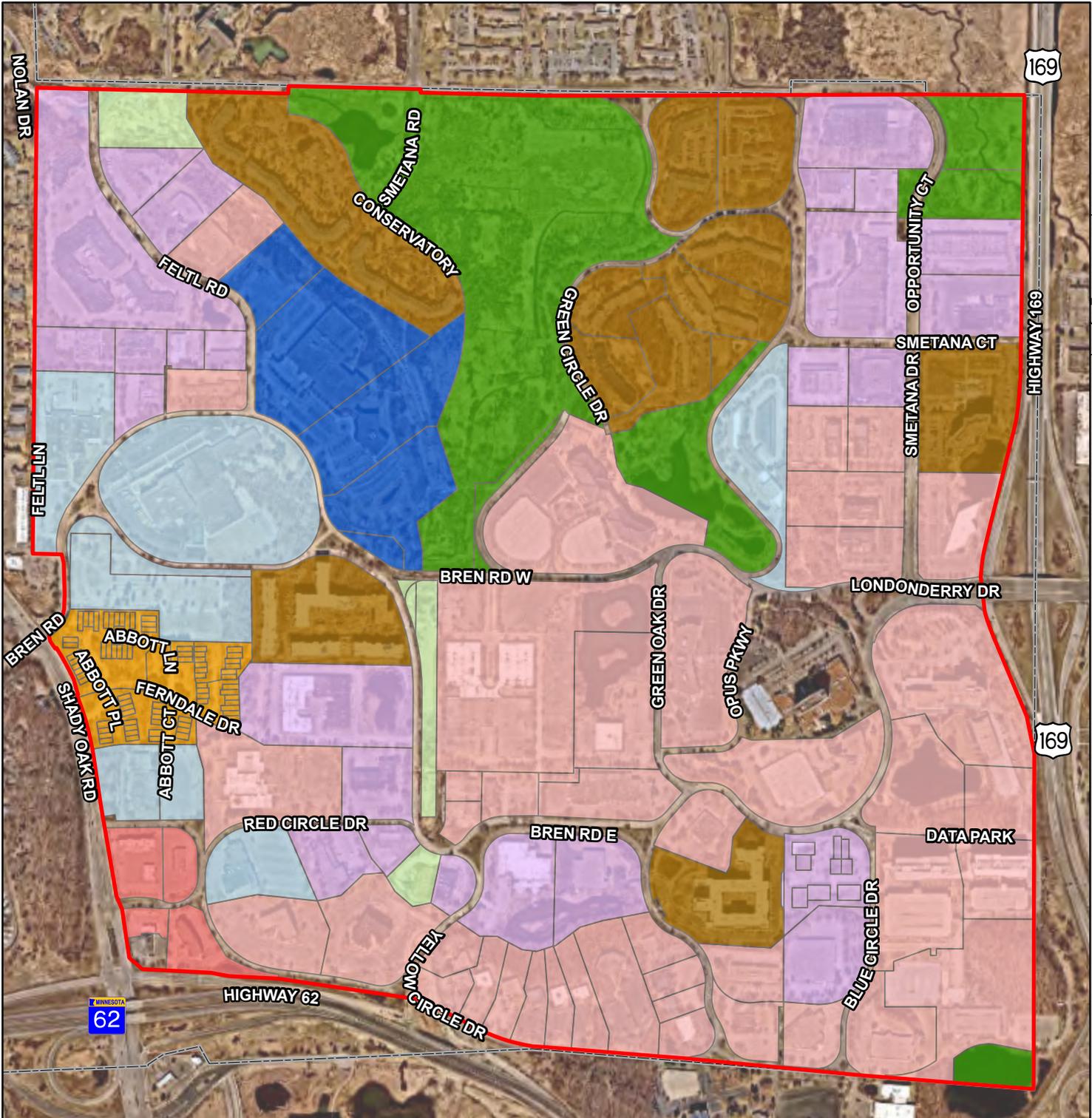
Opus AUAR  
Minnetonka, MN





**Figure 7.2 - National Wetland Inventory & Public Waters Map**  
Opus AUAR  
Minnetonka, MN

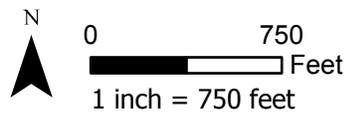




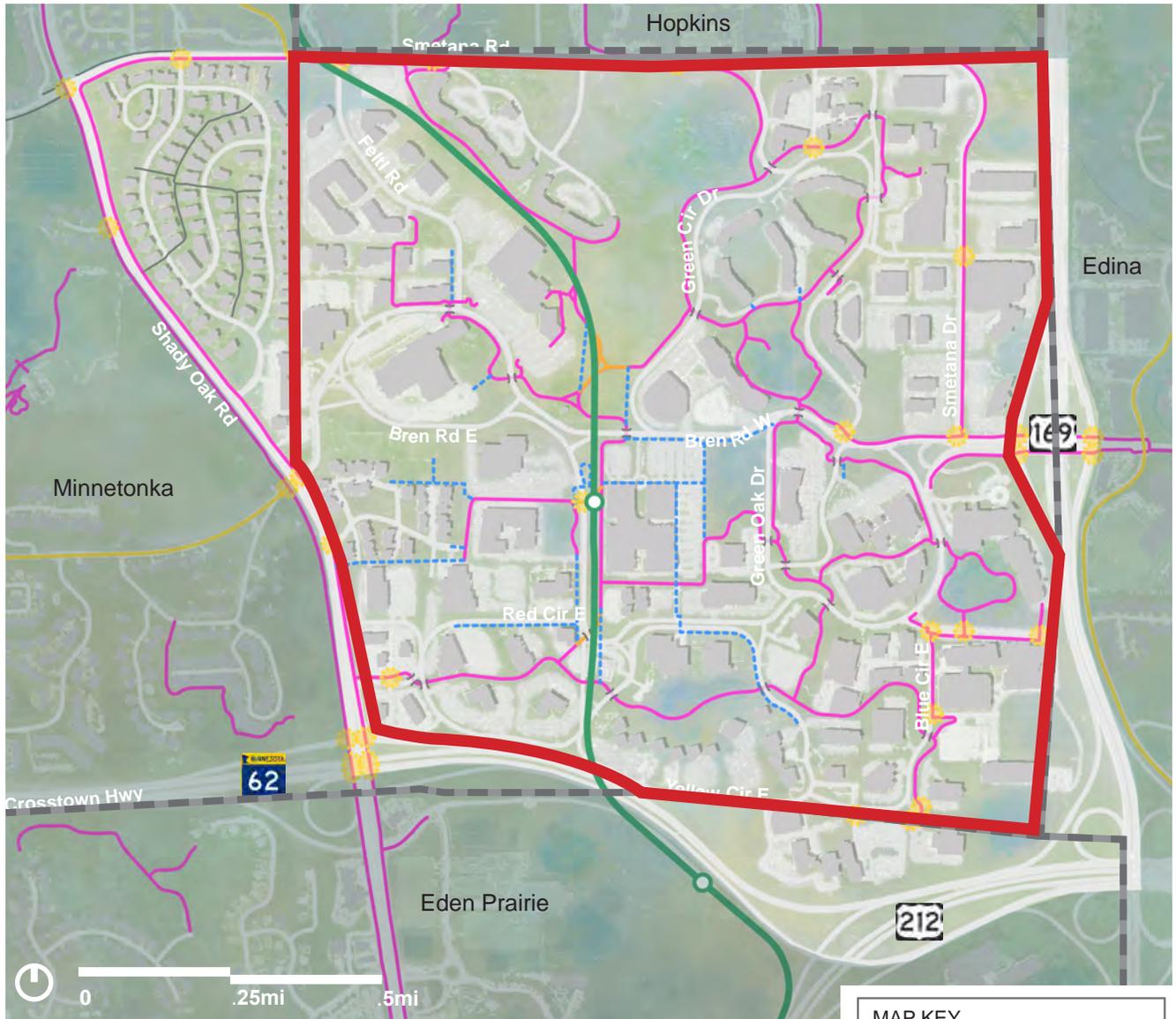
	Project Location		High Density Residential		Institutional
	City Boundary		Commercial		Open Space
	Opus Parcel Land Use		Office		Research & Development
	Medium Density Residential		Mix Use		Metro Transit/Green Line LRT
			Industrial		



**Figure 9.1 - Opus Parcel Land Use**  
Opus AUAR  
Minnetonka, MN







MAP KEY	
	Project Boundary
	City Boundary
	Existing Trail
	Existing Sidewalk
	Planned Trail Connection
	Planned Trail Removal
	Bike-Friendly Street
	Southwest LRT Alignment
	Southwest LRT Station
	Bridge
	At-Grade Crossing

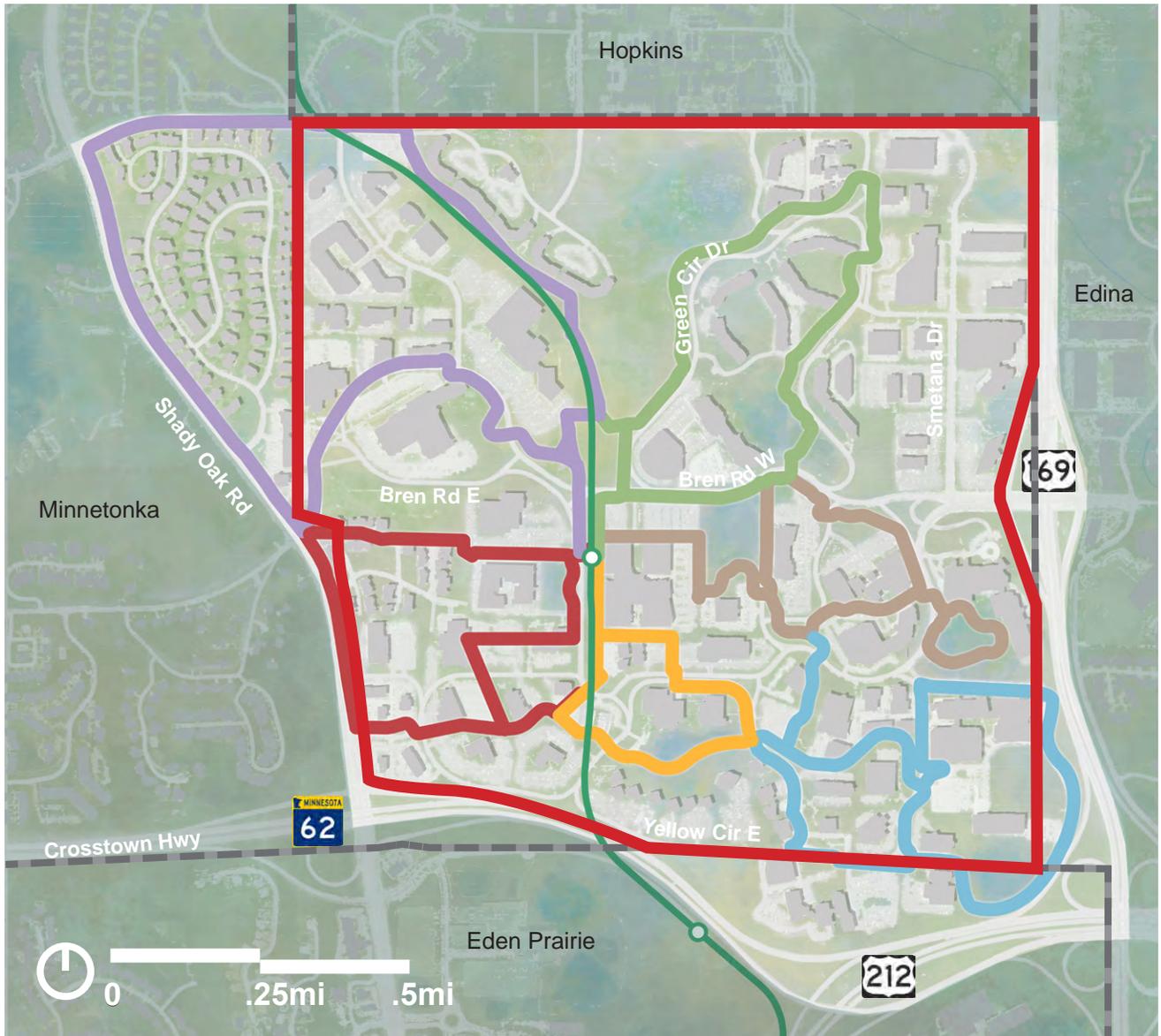
Source: Opus Area Placemaking + Urban Design Implementation Guide, Asakura Robinson / WSB, 2019



**Figure 9.3 - Existing and Planned Trail Network**

Opus AUAR  
Minnetonka, MN





Source: Opus Area Placemaking + Urban Design Implementation Guide, Asakura Robinson / WSB, 2019

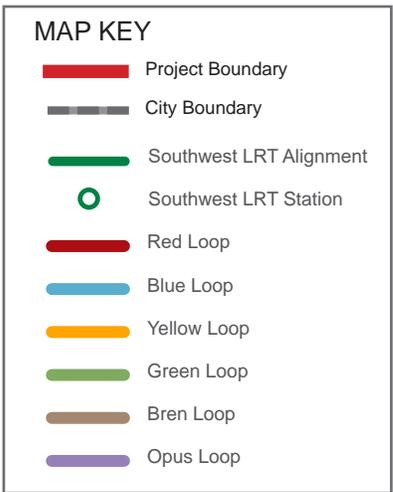
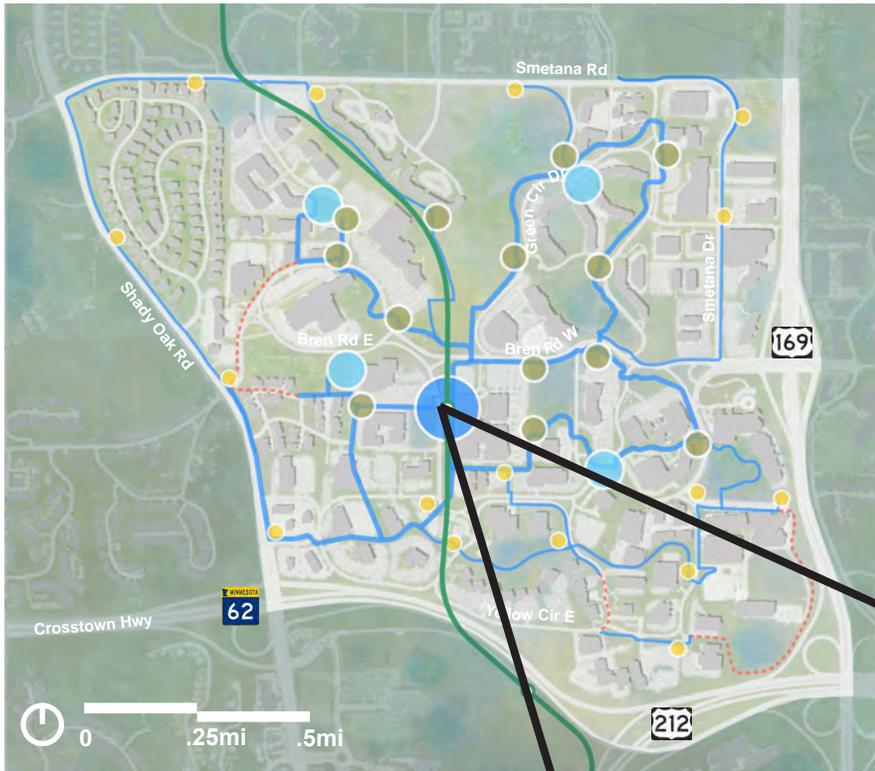


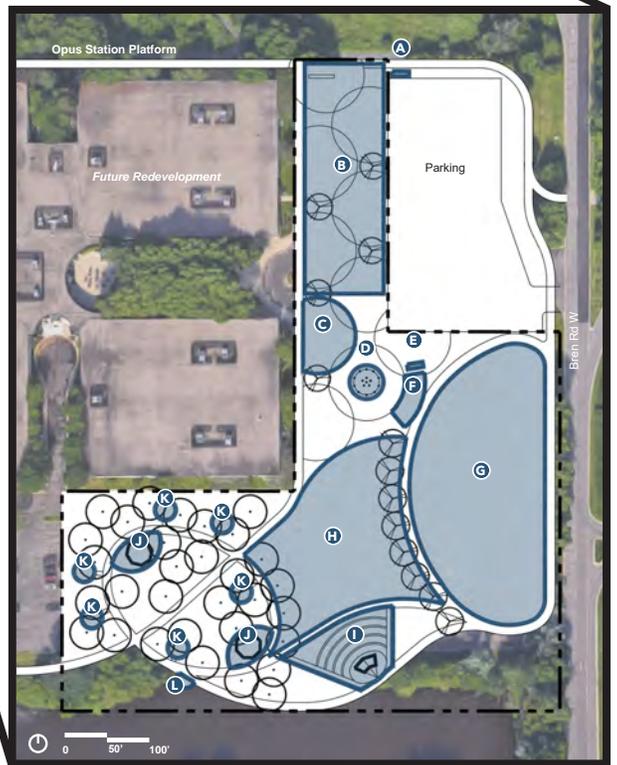
Figure 9.4 - Planned Branded Trail Loop Map

Opus AUAR  
Minnetonka, MN





- Major Loop
- Minor Loop
- - - Proposed Connection
- Southwest LRT Alignment
- Southwest LRT Station
- Opus Node
- Primary Node
- Secondary Node
- Tertiary Node



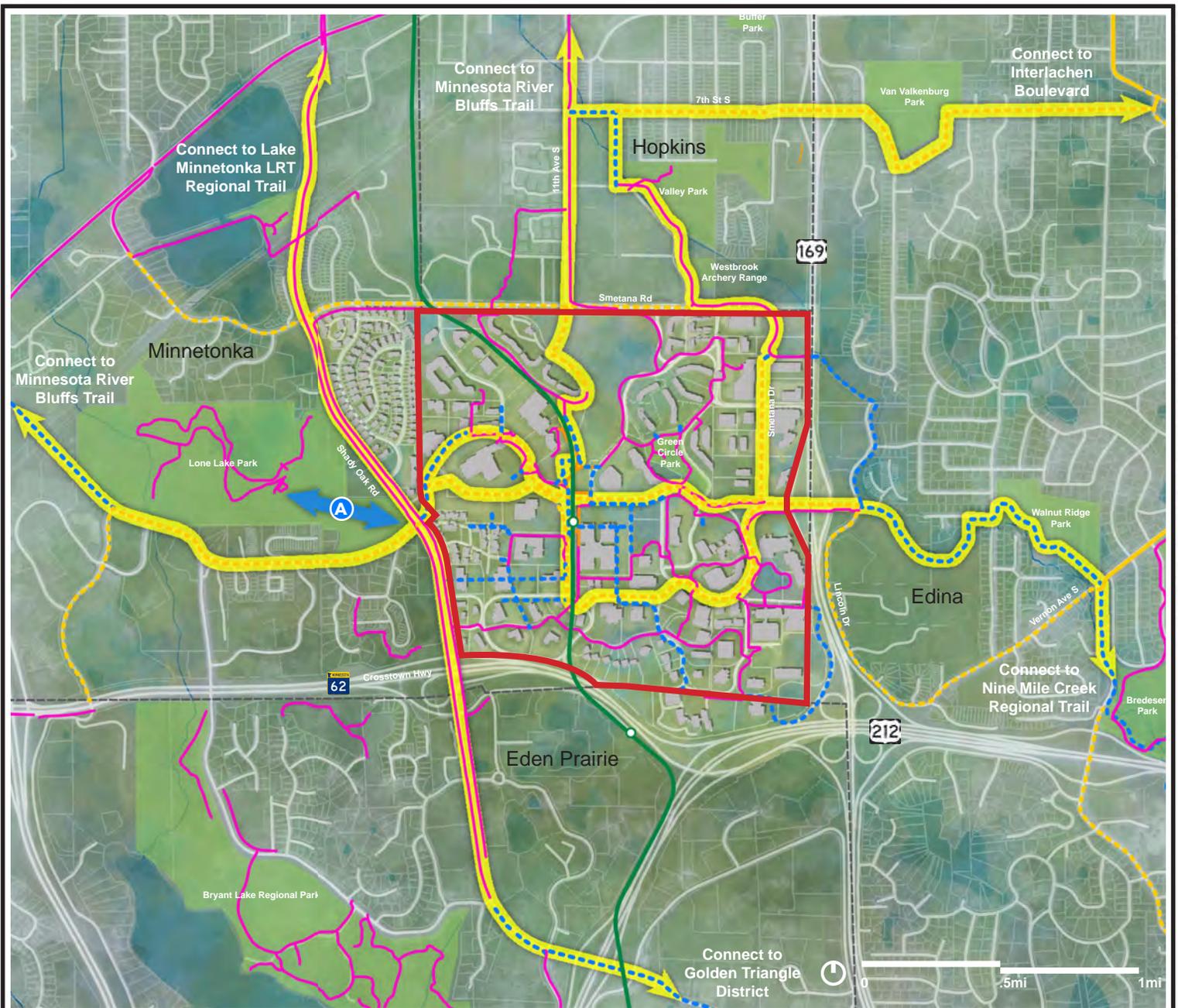
Source: Opus Area Placemaking + Urban Design Implementation Guide, Asakura Robinson / WSB, 2019



**Figure 9.5 - Planned Opus Park Space Map**

Opus AUAR  
Minnetonka, MN





Source: Opus Area Placemaking + Urban Design Implementation Guide, Asakura Robinson / WSB, 2019

**MAP KEY**

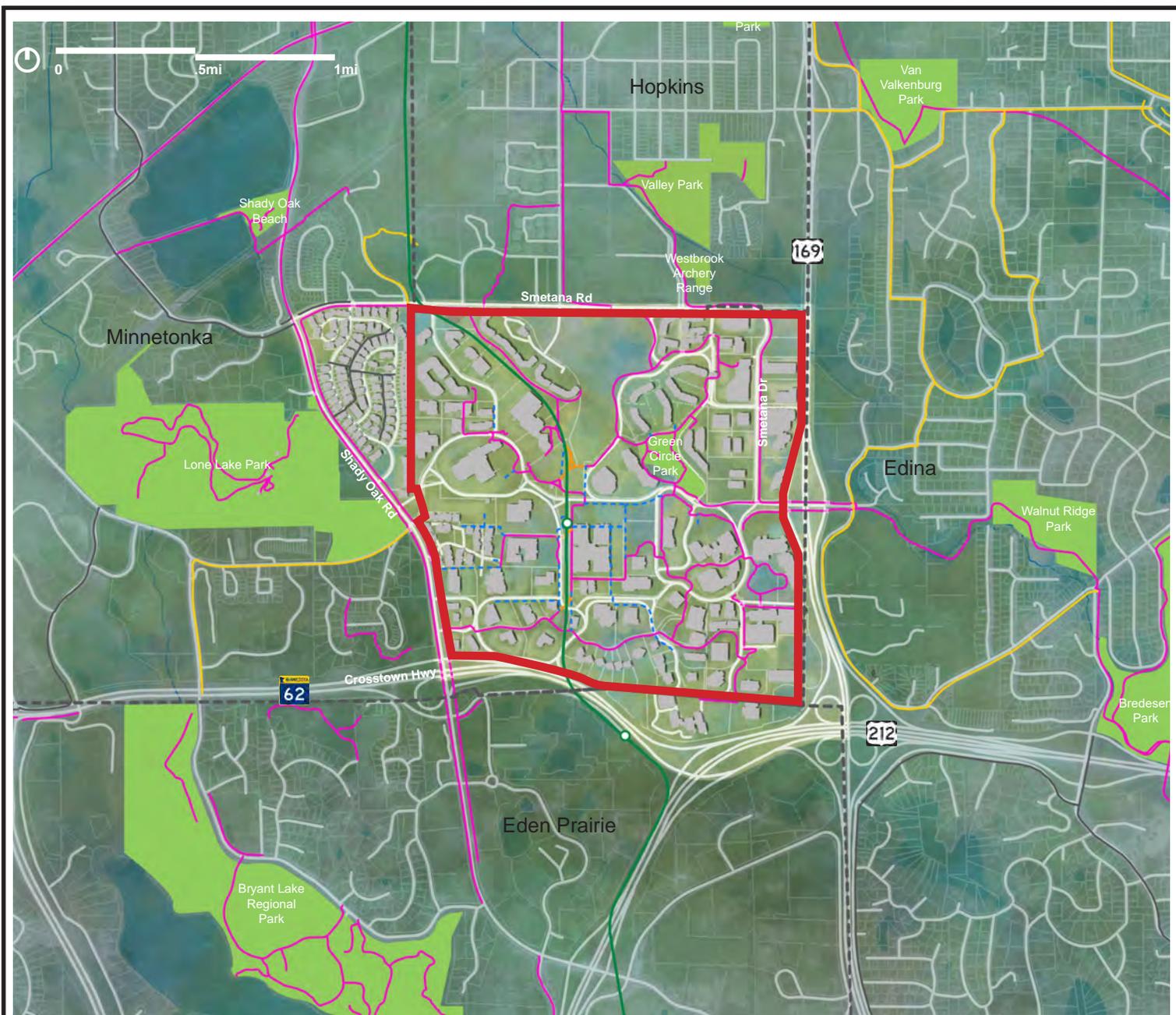
- Project Boundary
- Southwest LRT Alignment
- Southwest LRT Station
- Existing Trail
- Removed Trail
- Existing On-Street
- - - Proposed Off-Street
- - - Proposed On-Street
- Main Corridors
- Parks
- Ⓐ Provide pedestrian and bicycle connection to Lone Lake Park from Opus District
- - - City Boundary



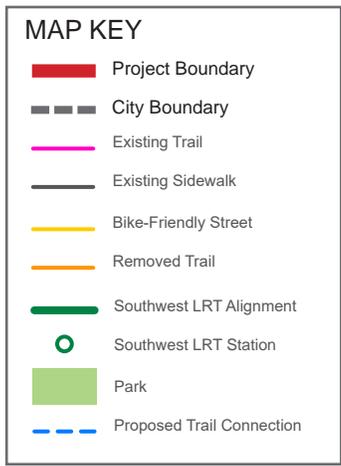
**Figure 9.6 - Regional Connections to Parks & Trails**

Opus AUAR  
Minnetonka, MN





Source: Opus Area Placemaking + Urban Design Implementation Guide, Asakura Robinson / WSB, 2019



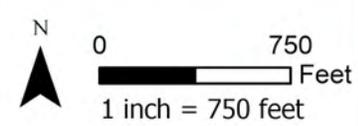
**Figure 9.7 - Nearby Parks and Trails Map**

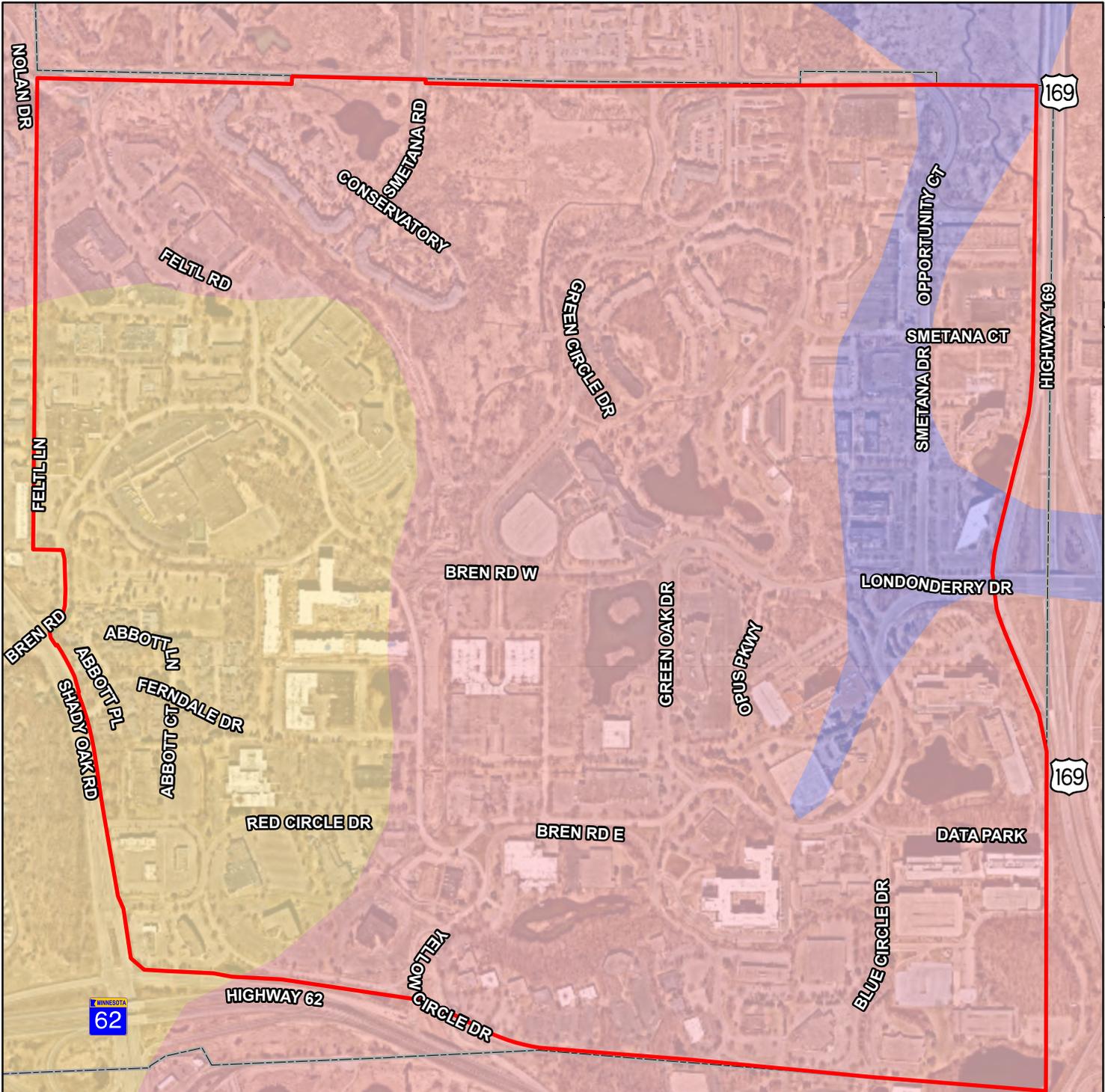
Opus AUAR  
Minnetonka, MN





**Figure 10.1 - Surficial Geology**  
Opus AUAR  
Minnetonka, MN



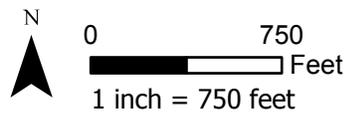


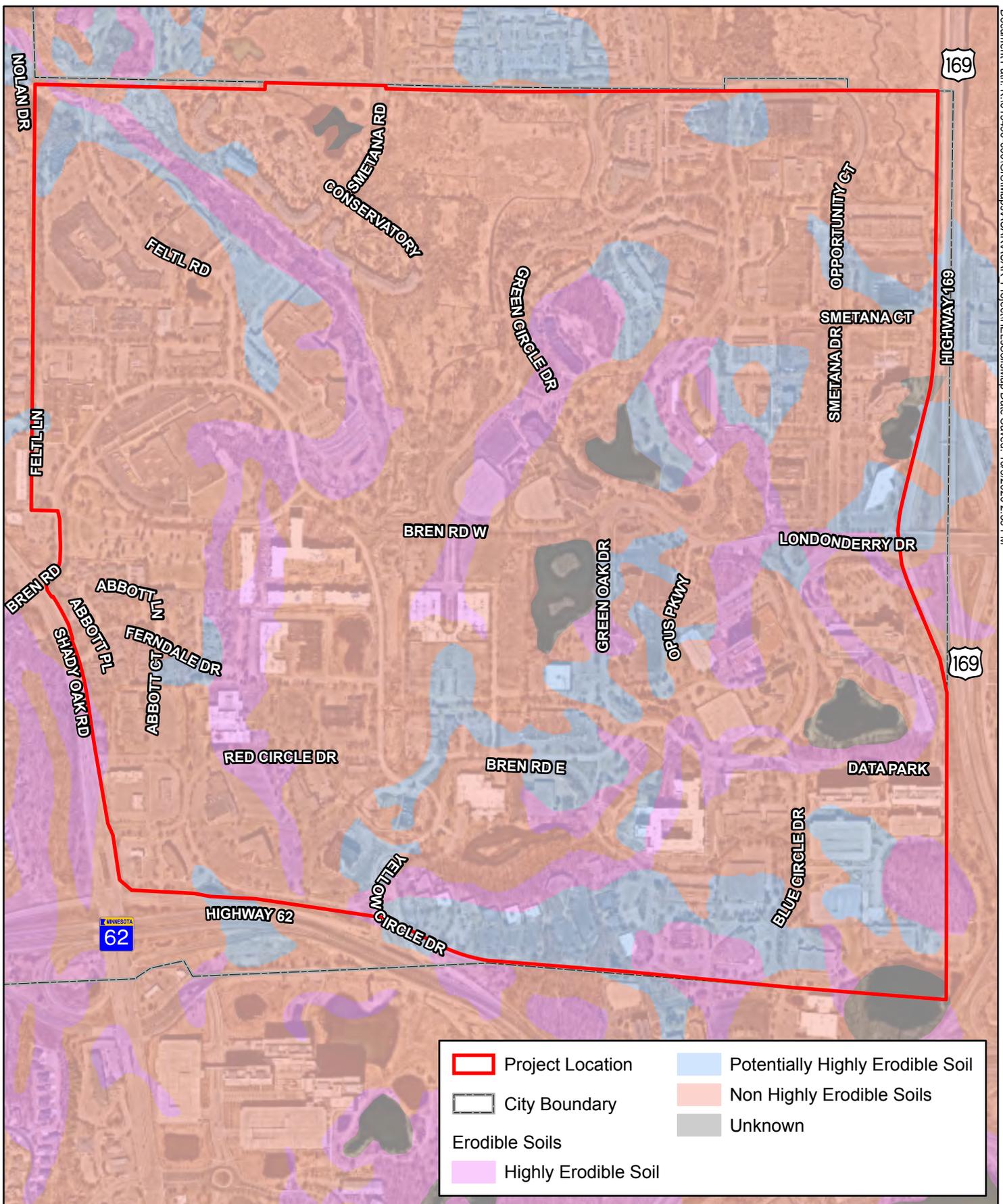
	Project Location
	City Boundary
Bedrock Geology	
	Platteville Formation and Glenwood Formation
	Prairie du Chien Group
	St. Peter Sandstone



**Figure 10.2 - Bedrock Geology**

Opus AUAR  
Minnetonka, MN



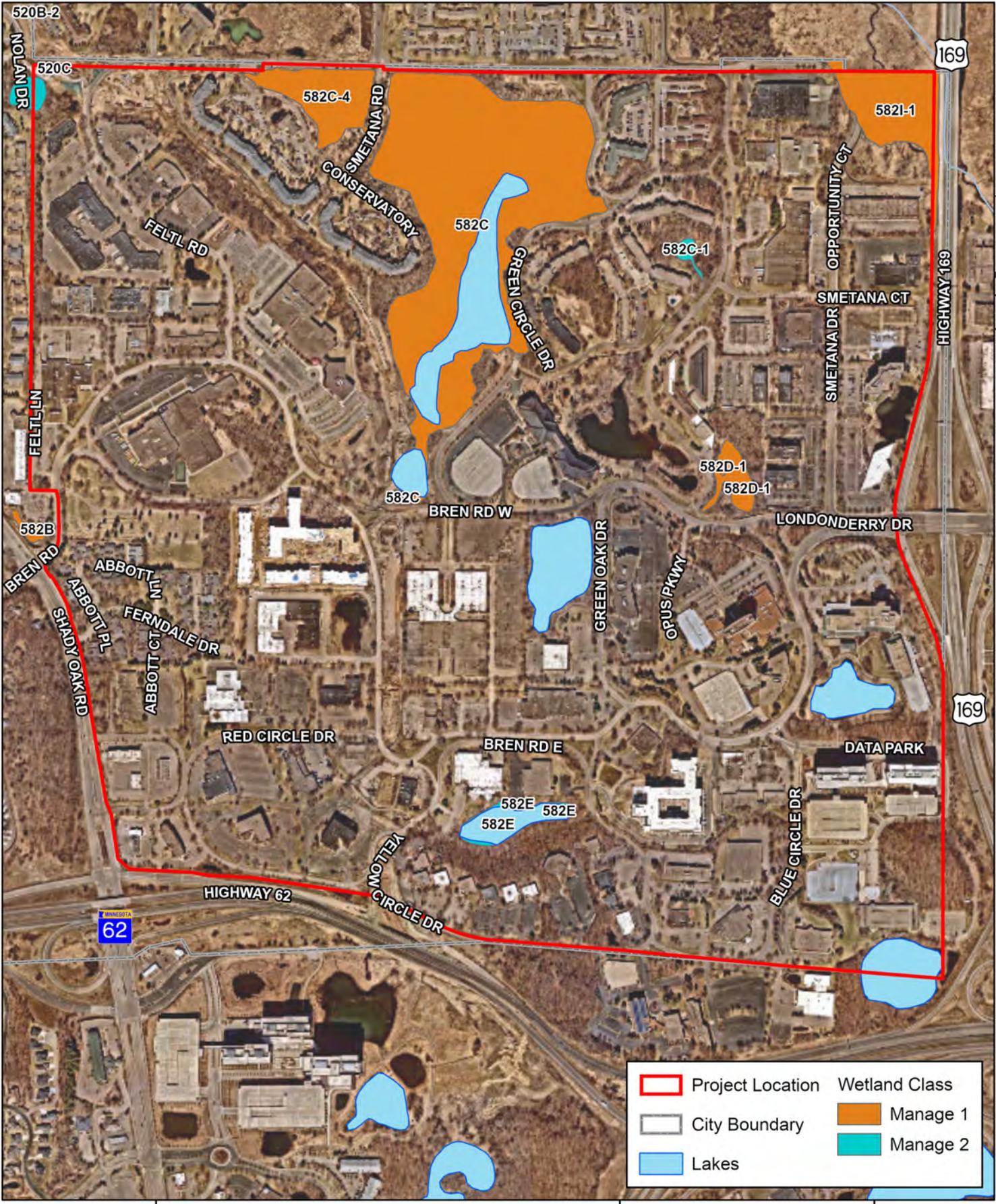


**Figure 10.3 - Highly Erodeble Soils Map**  
Opus AUAR  
Minnetonka, MN



0 750  
Feet  
1 inch = 750 feet

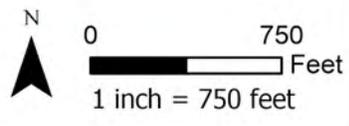


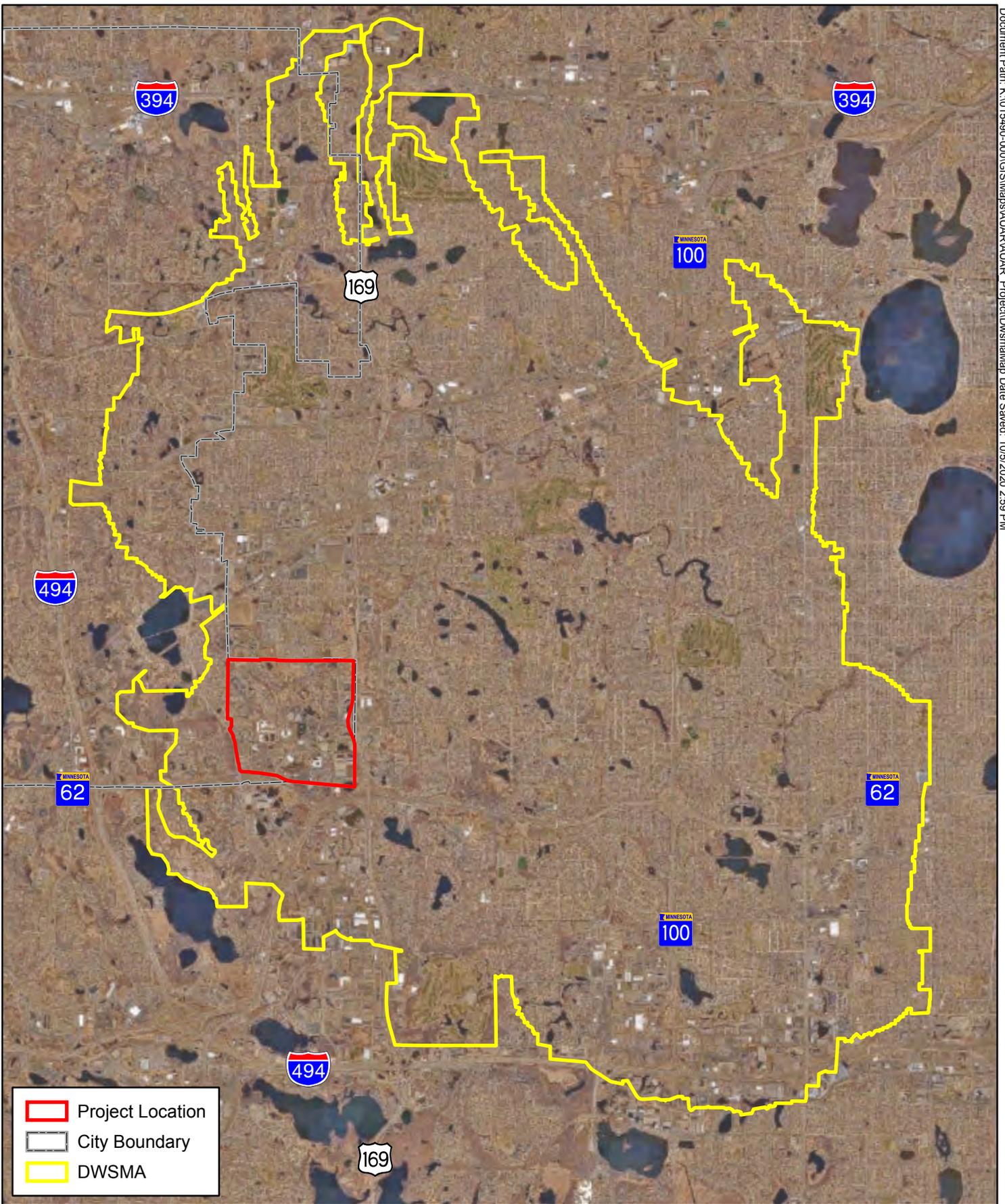


	Project Location		Wetland Class
	City Boundary		Manage 1
	Lakes		Manage 2



**Figure 11.1 - City Regulated Wetlands**  
Opus AUAR  
Minnetonka, MN





**Figure 11.2 - Edina Drinking Water Supply Management Area**

Opus AUAR  
Minnetonka, MN

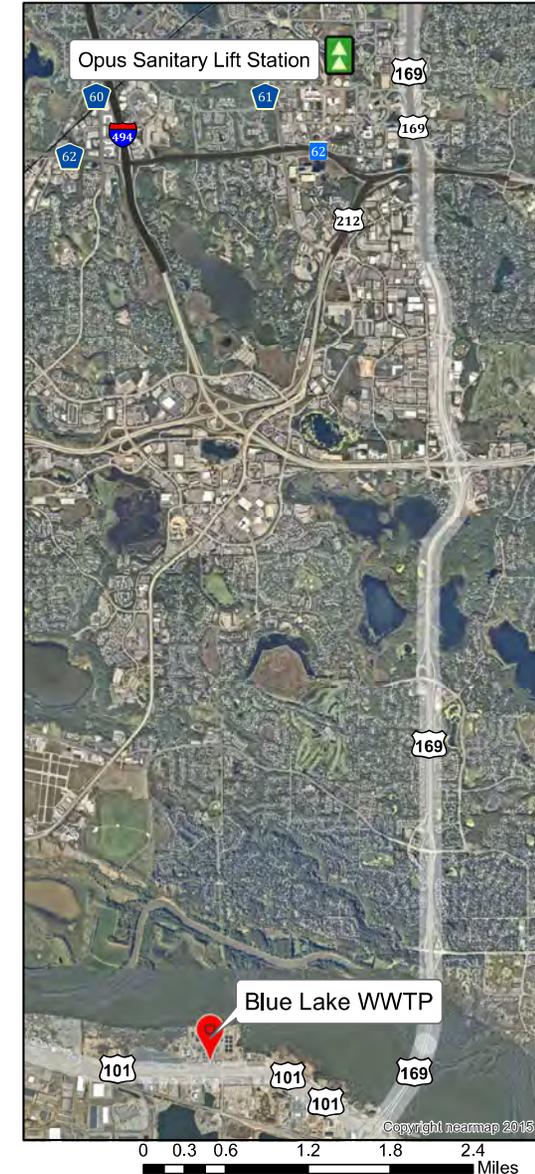
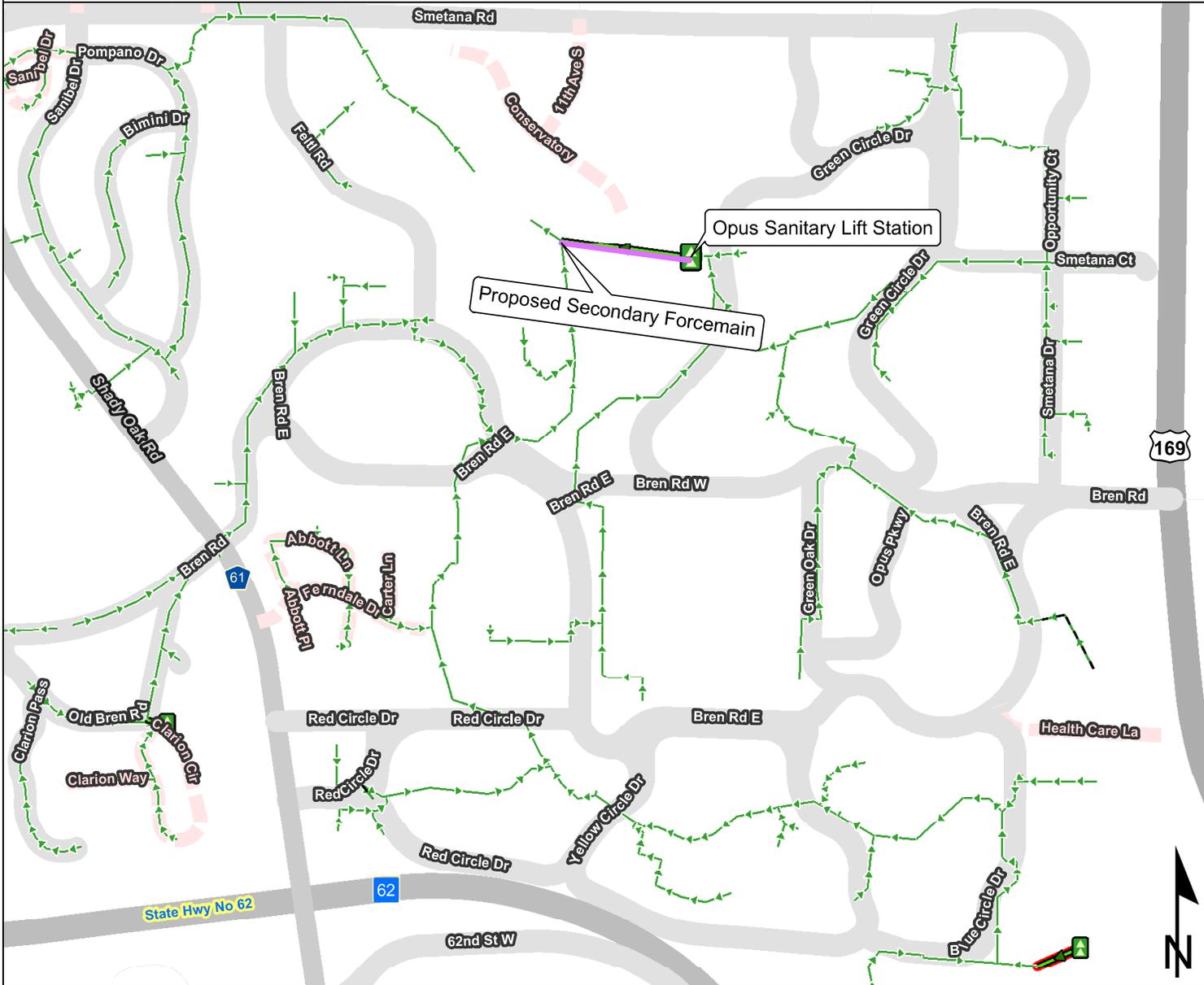


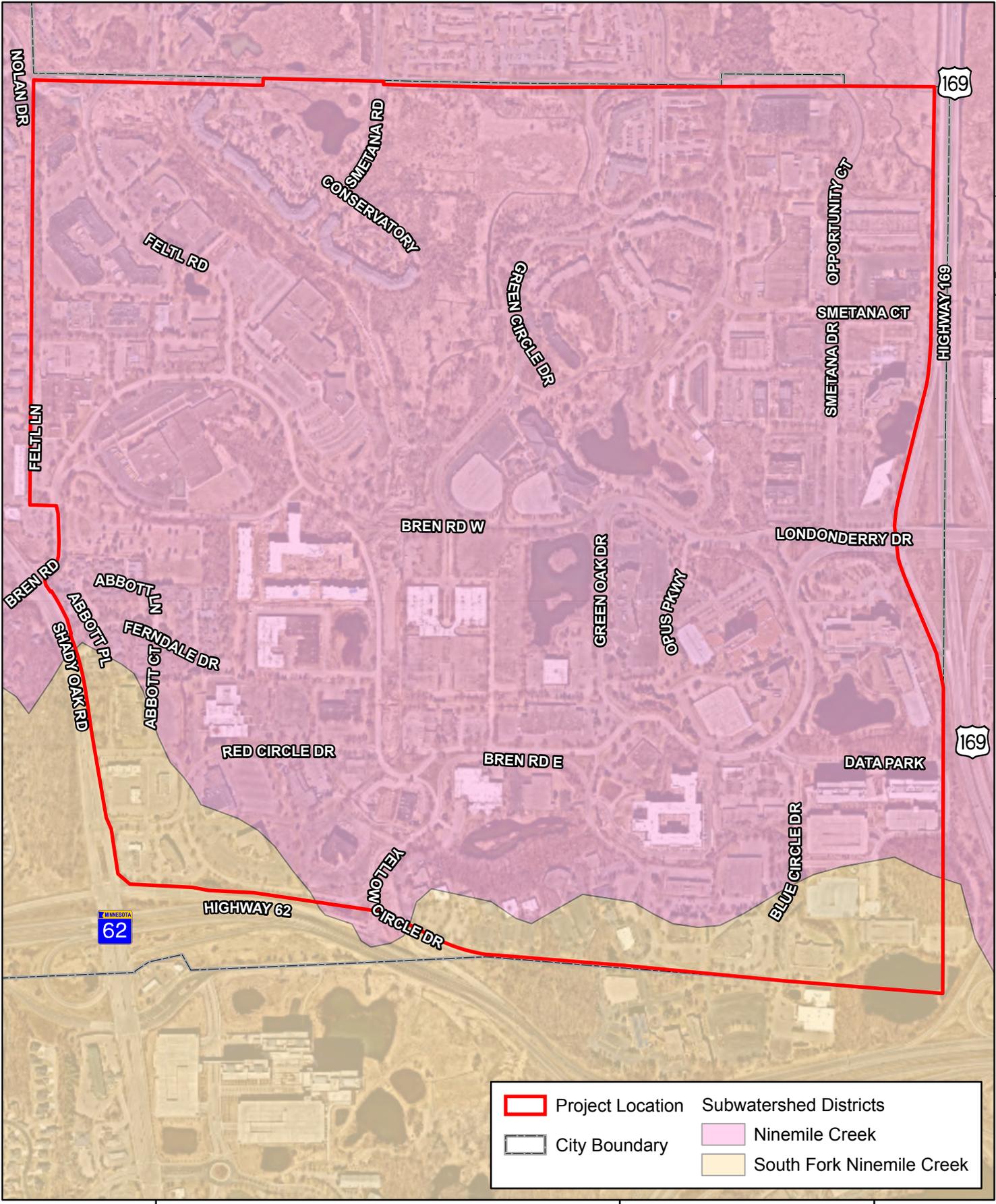
0 5,400  
Feet  
1 inch = 5,400 feet



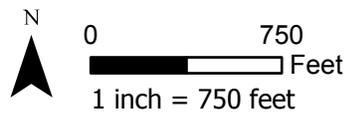


Figure 11.3: Opus Area AUAR Sanitary Sewer



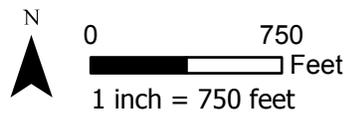


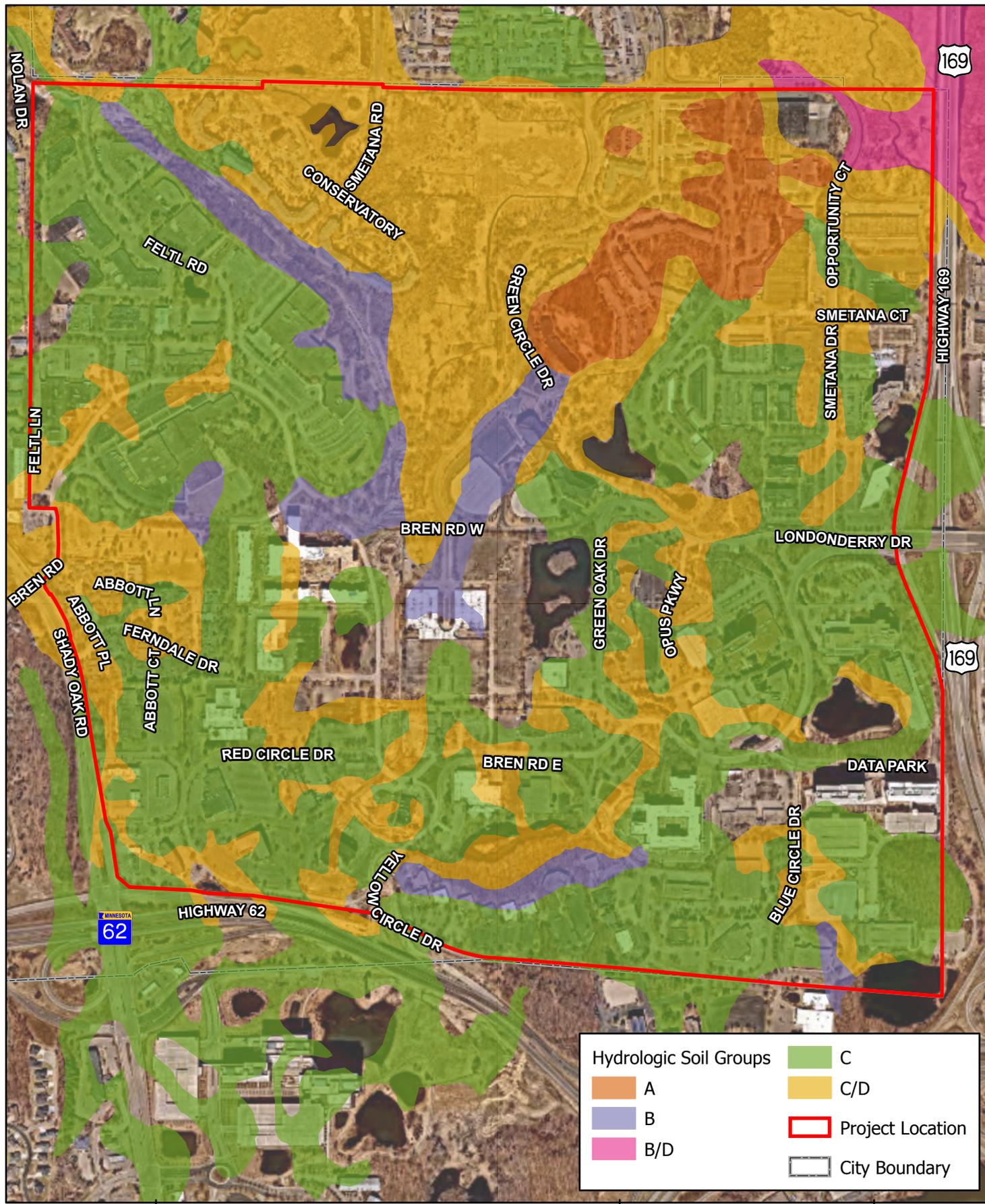
**Figure 11.4 Subwatershed Map**  
Opus AUAR  
Minnetonka, MN





**Figure 11.5 - FEMA Map**  
Opus AUAR  
Minnetonka, MN

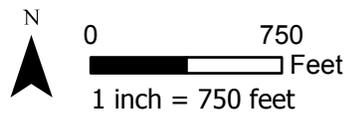


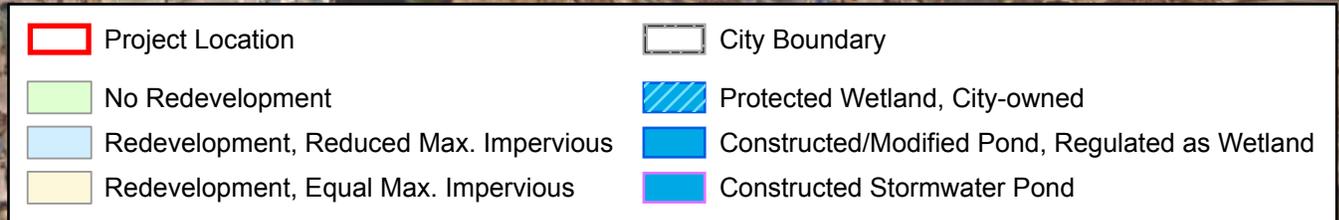
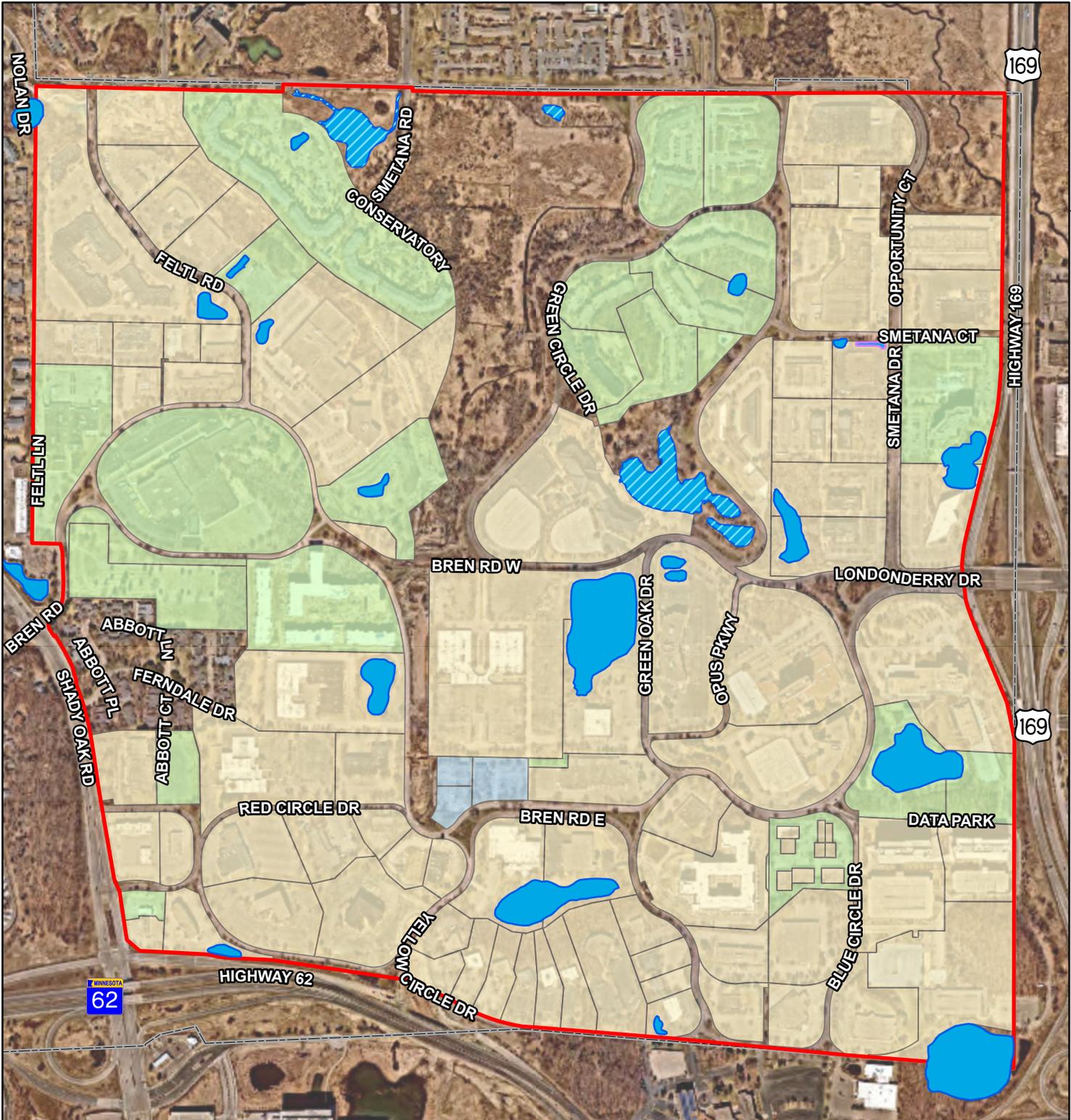


Hydrologic Soil Groups	
	A
	B
	B/D
	C
	C/D
	Project Location
	City Boundary

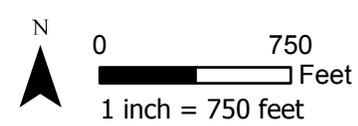


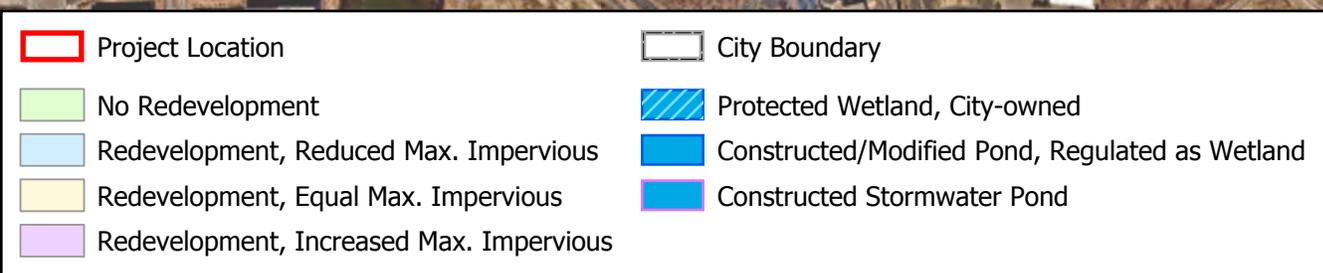
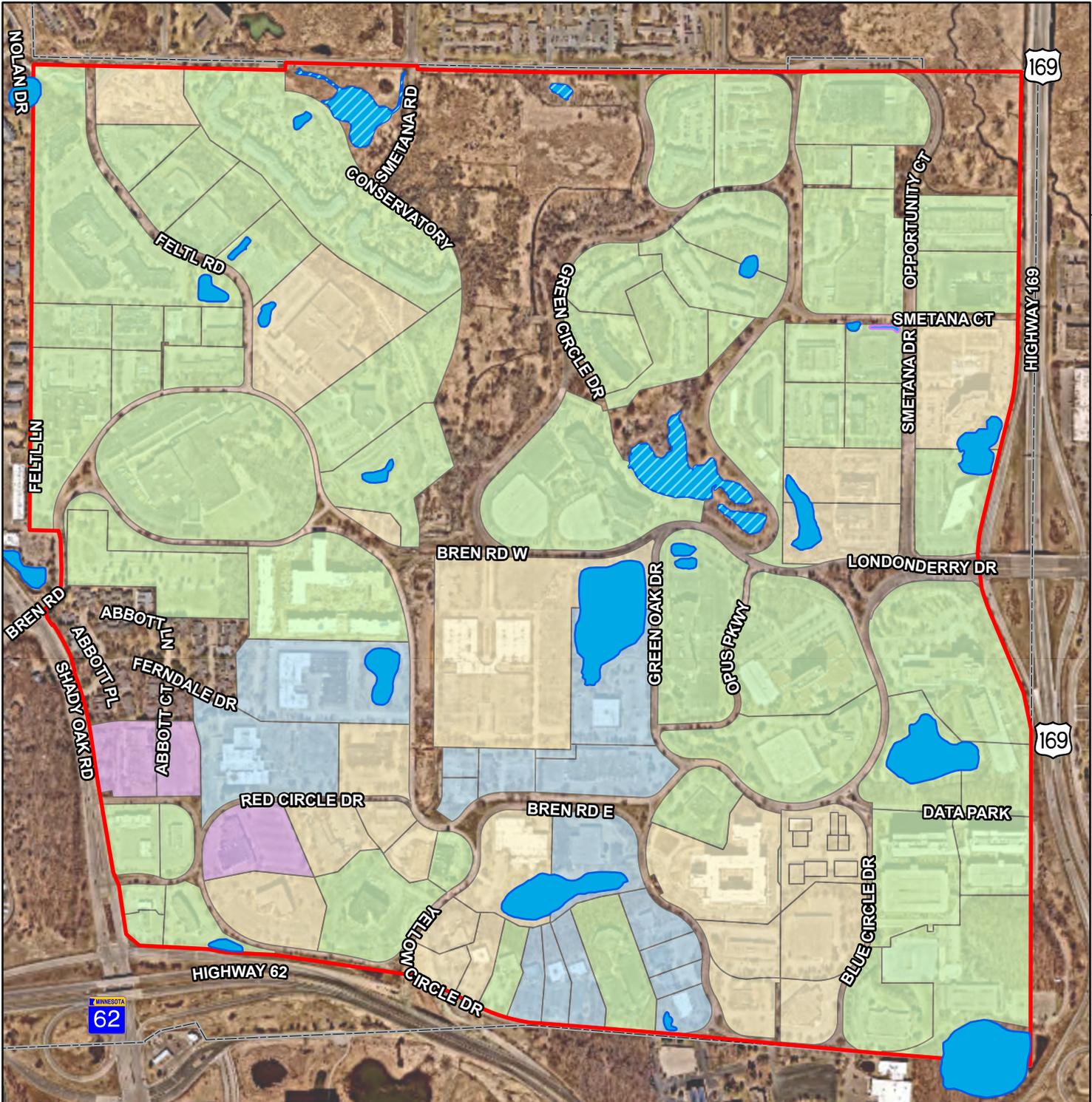
**Figure 11.6 - Hydrologic Soil Groups**  
Opus AUAR  
Minnetonka, MN



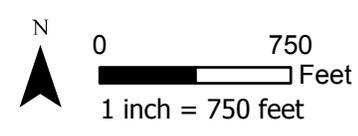


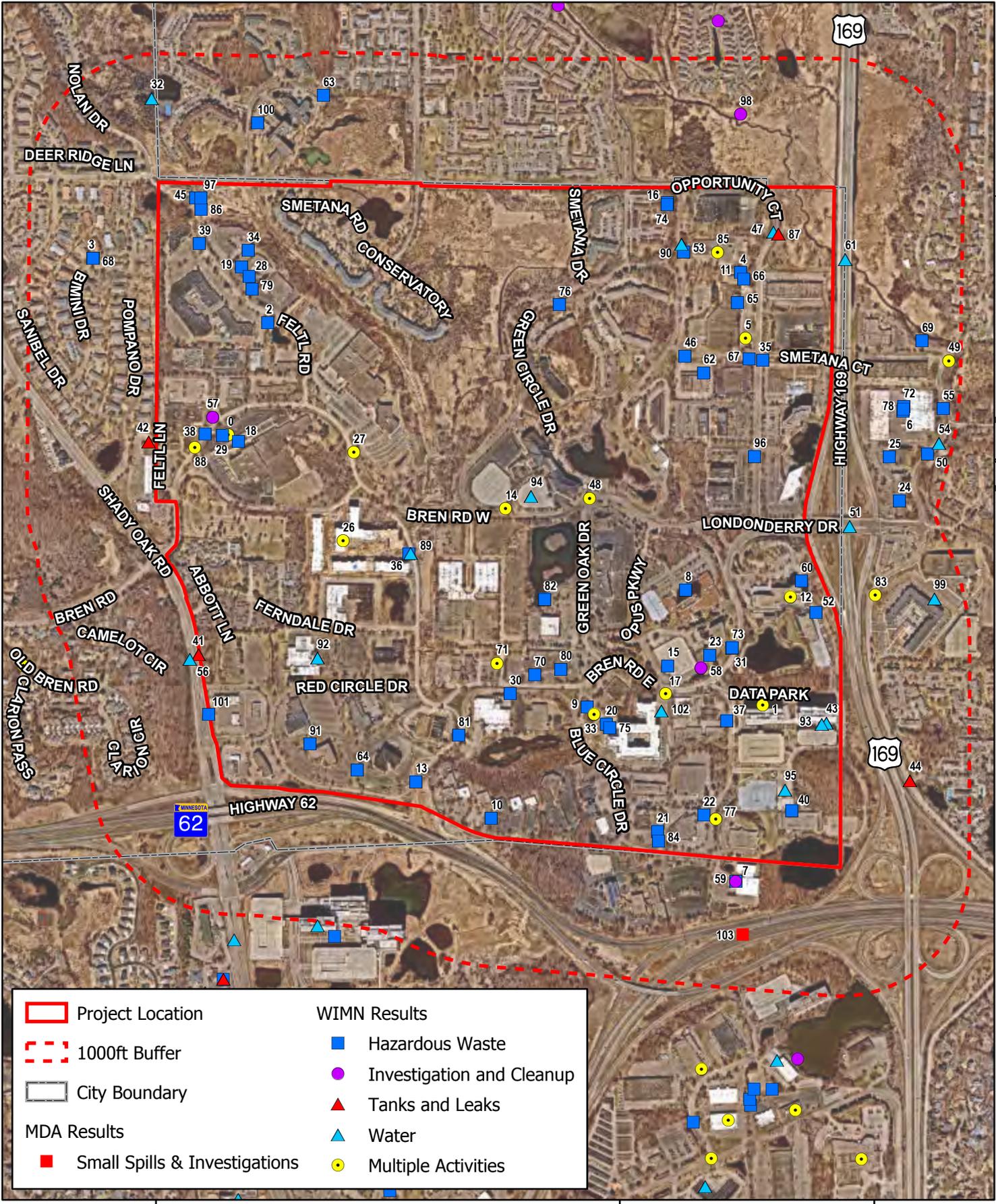
**Figure 11.7 - Scenario 1**  
Opus AUAR  
Minnetonka, MN





**Figure 11.8 - Scenario 2**  
Opus AUAR  
Minnetonka, MN





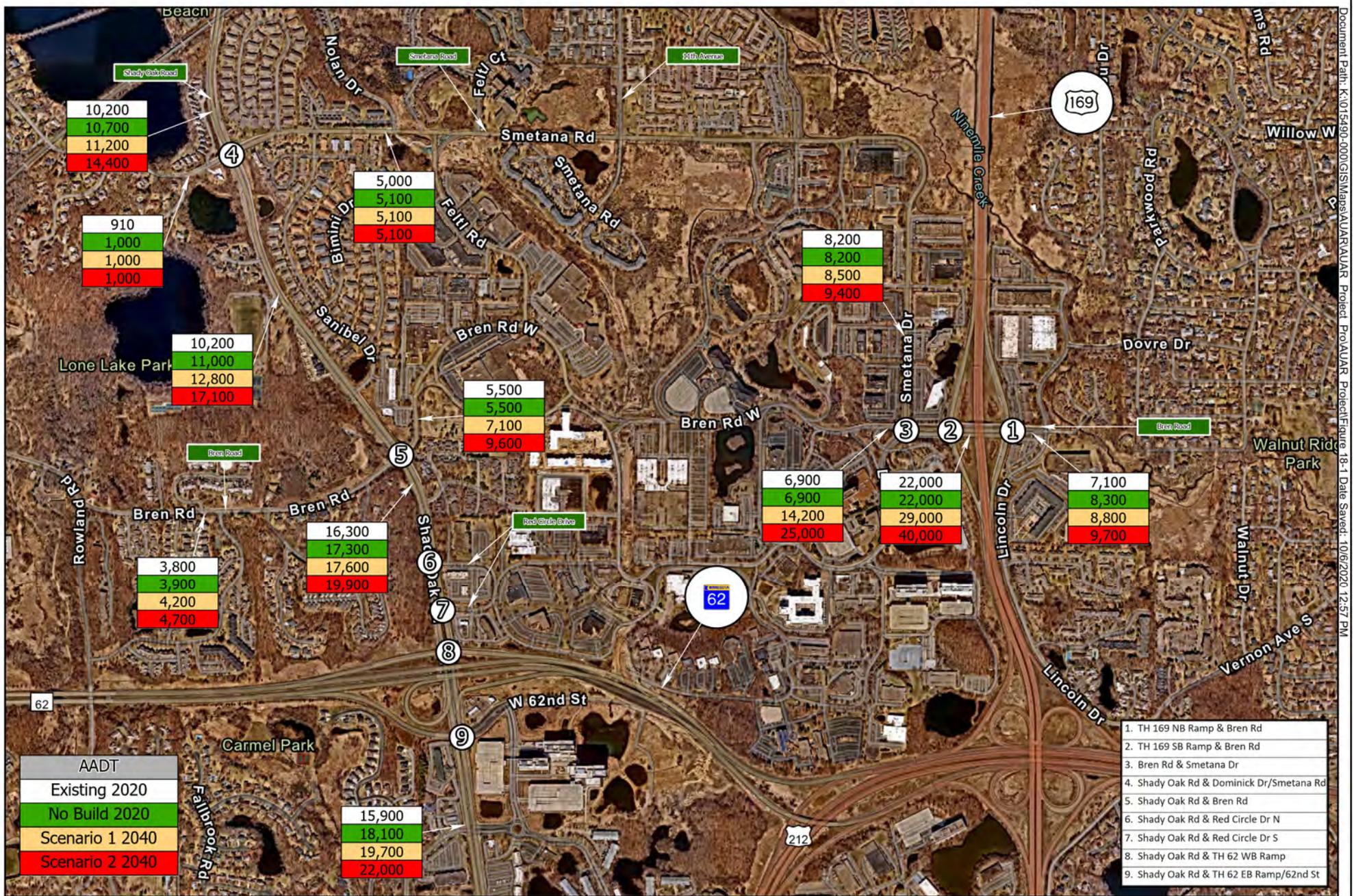
	Project Location	<b>WIMN Results</b>
	1000ft Buffer	Hazardous Waste
	City Boundary	Investigation and Cleanup
<b>MDA Results</b>		Tanks and Leaks
	Small Spills & Investigations	Water
		Multiple Activities

**Figure 12.1 - MPCA/MDA WIMN Results**  
Opus AUAR Contamination Review  
Minnetonka, MN

N

0 1,000 Feet  
1 inch = 1,000 feet





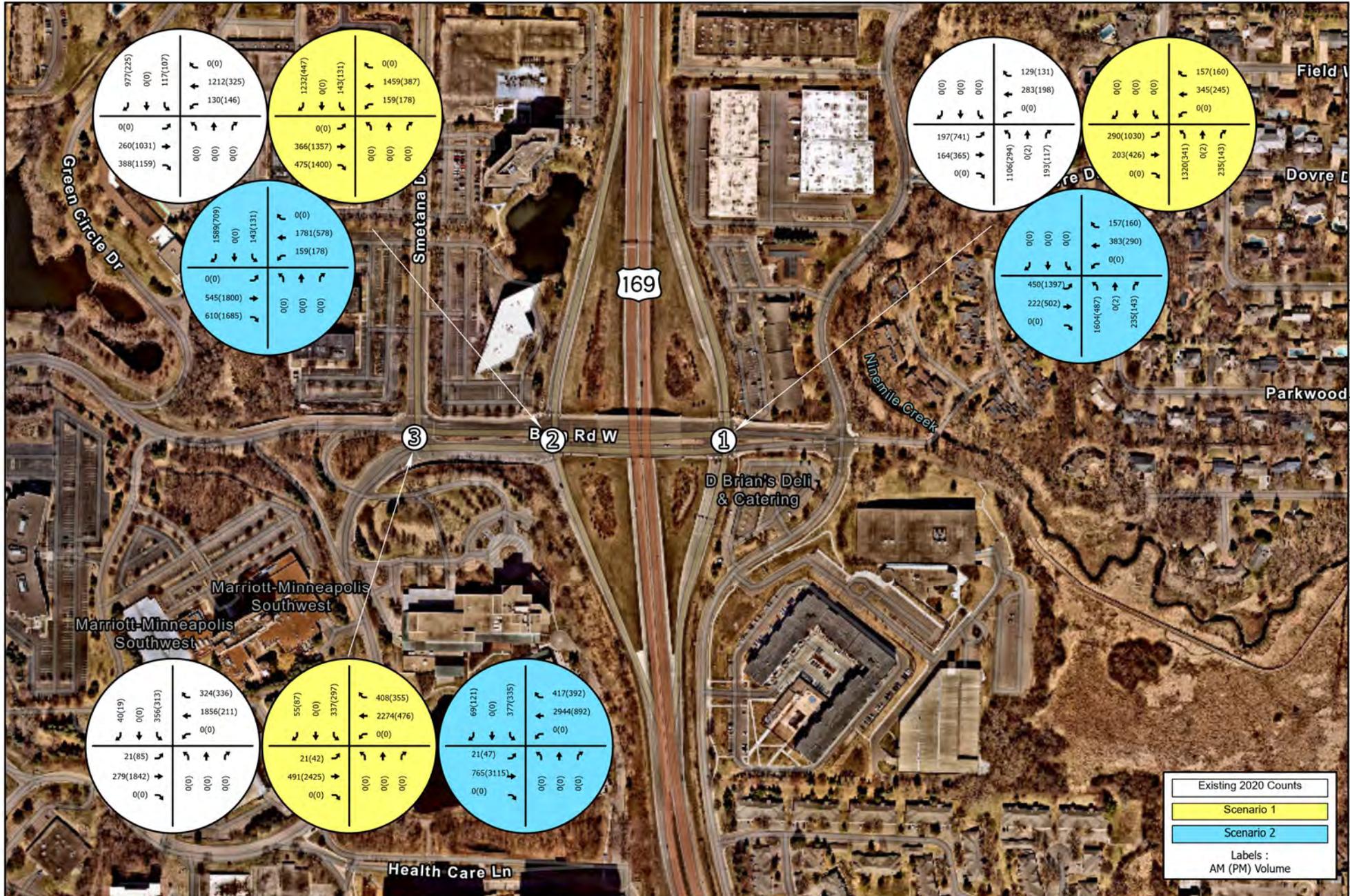
**Figure 18-1**

Study Area, Key Intersections and AADT

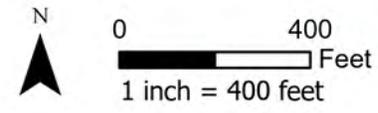


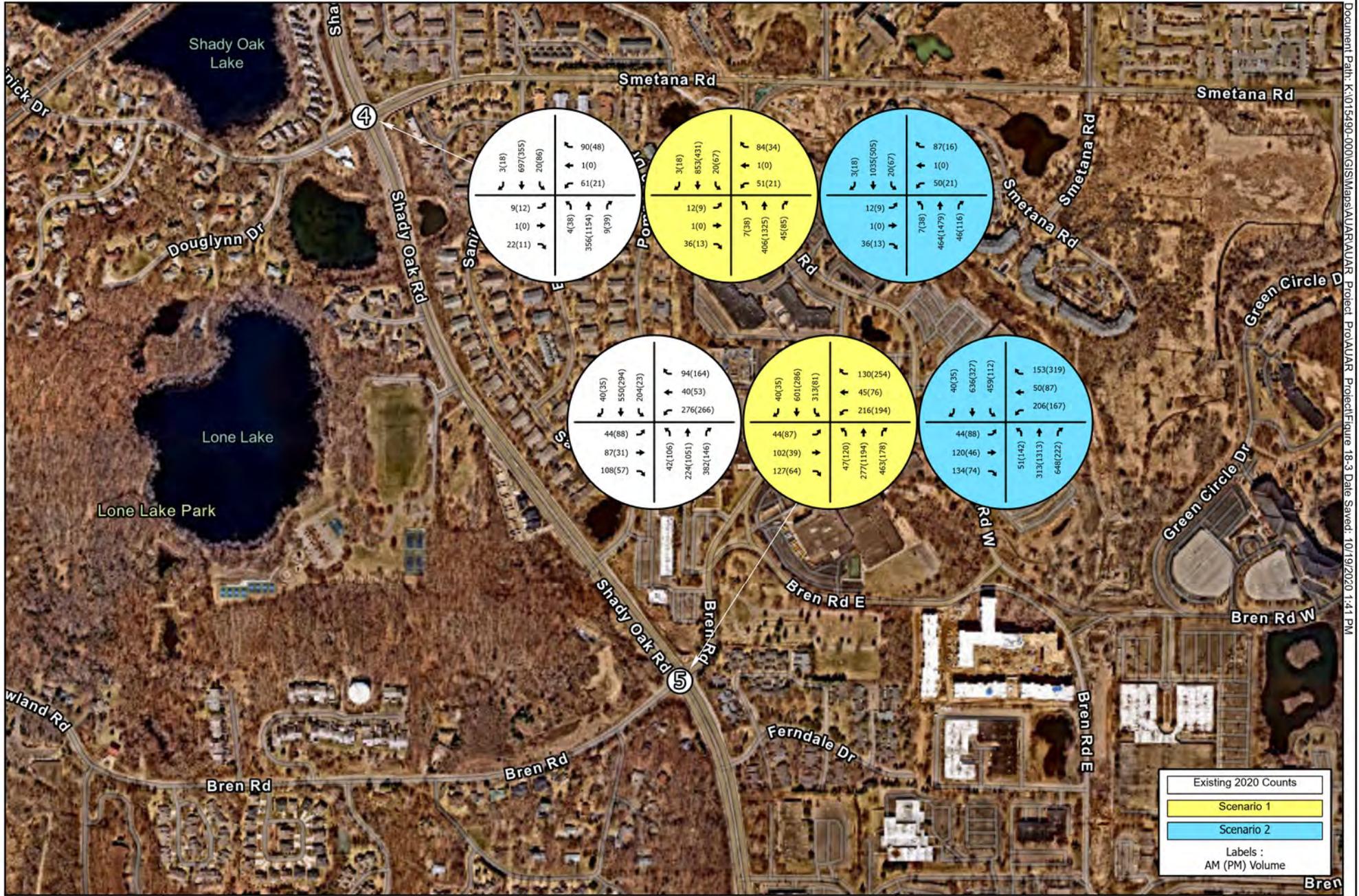
0 1,200 Feet  
1 inch = 1,200 feet





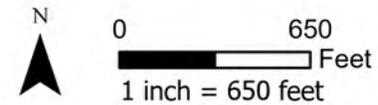
**Figure 18-2**  
Existing and forecast peak hour turning movements at Bren Road intersections with Smetana Road and TH 169 Ramps

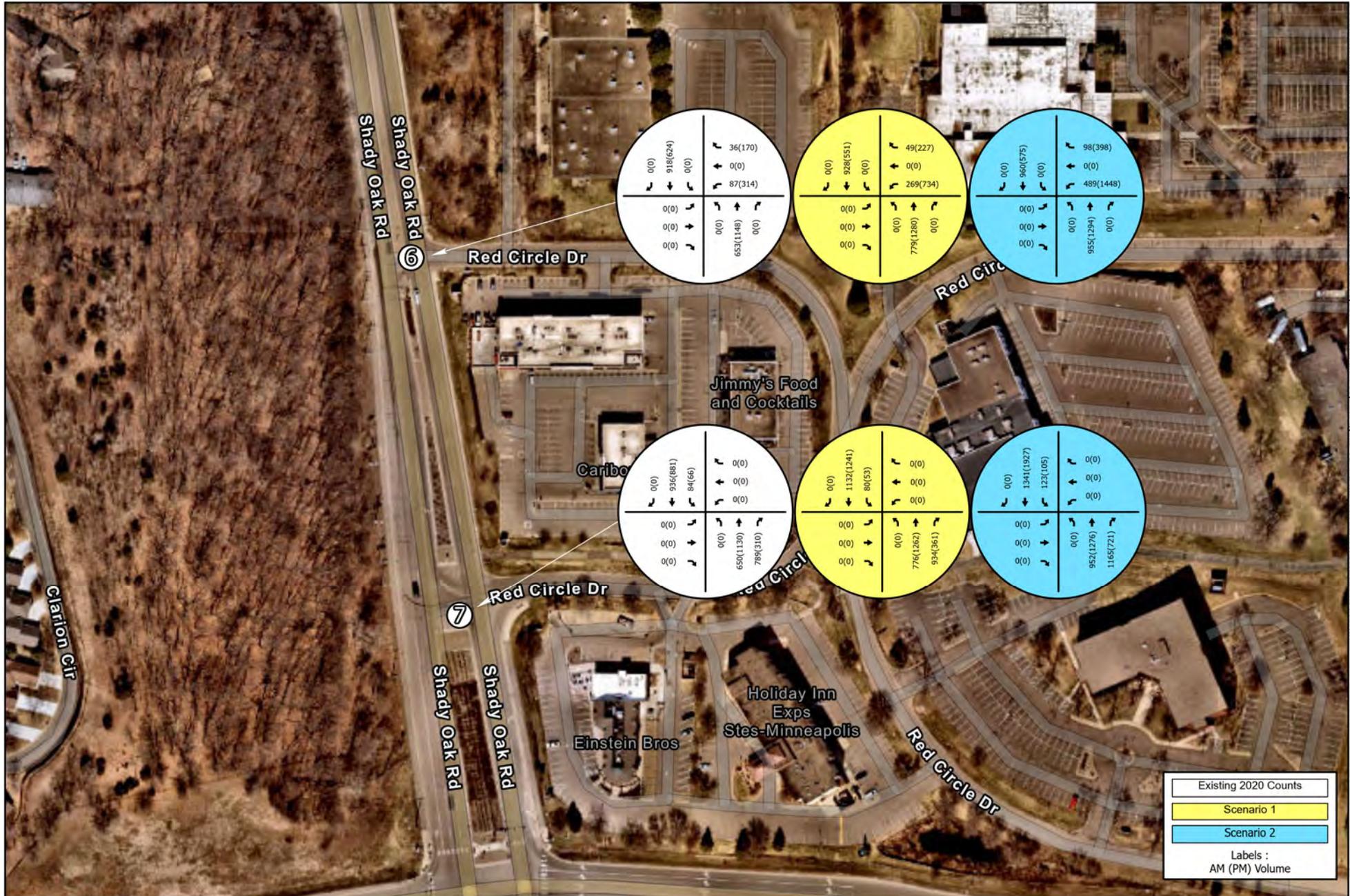




**Figure 18-3**

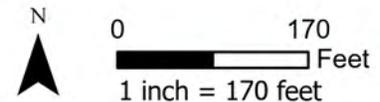
Existing and forecast peak hour turning movements at Shady Oak Road Intersections with Smetana Road and Bren Road

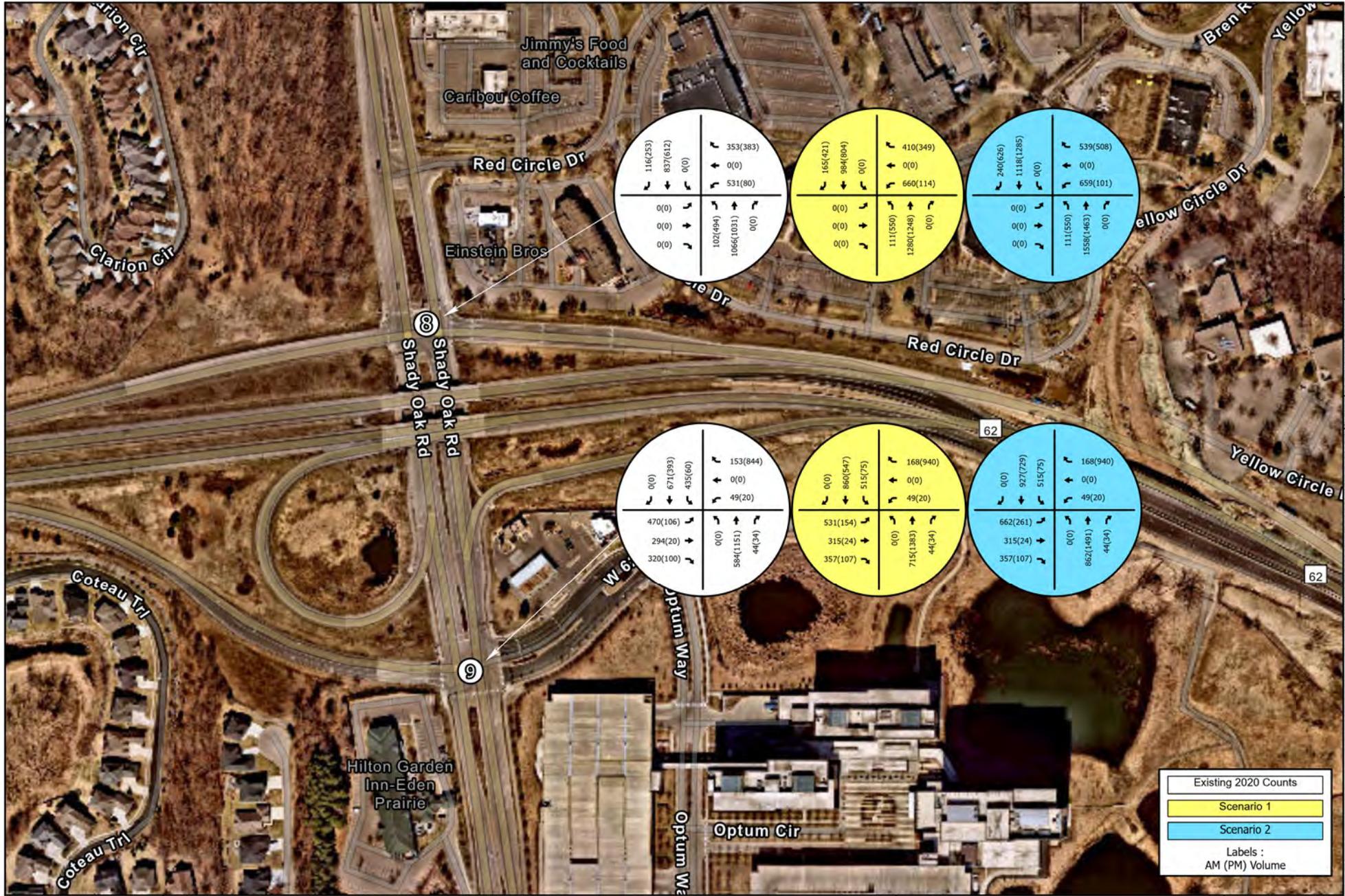




**Figure 18-4**

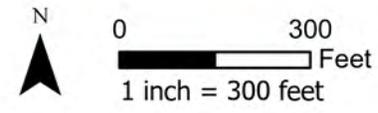
Existing and forecast peak hour turning movements at Shady Oak Road intersections with Red Circle Drive North and South





**Figure 18-5**

Existing and forecast peak hour turning movements at Shady Oak Road intersections with TH 62 ramps







**APPENDIX B**  
Comments and Responses to Comments

COUNTY  
Hennepin

CITYTWP  
Minnetonka

PROPNAME  
Fell Farmstead  
Bridge 27545  
Bridge 27546  
St. Margarets Cemetery

ADDRESS

TOWNSHIP RANGE SECTION QUARTER USGS

REPORT NUMBER

5435 Feltl Rd.	117	22	36 NW-NW-NW	Hopkins	
Shady Oak Road over TH 62 WB	117	22	36 SW-SW	Hokpins	
Shady Oak Road over TH 62 EB	117	22	36 SW-SW	Hokpins	
Bren Rd E, east of Shady Oak Rd	117	22	36 NW-SW	Hopkins	HE-2010-20H

DOI INVENTNUM

HE-MKC-014

HE-MKC-081

HE-MKC-082

HE-MKC-189



Minnesota Department of Natural Resources  
Division of Ecological & Water Resources  
500 Lafayette Road, Box 25  
St. Paul, MN 55155-4025

May 12, 2020

Correspondence # ERDB 20200274

Ms. Aleesha Penn  
WSB & Associates, Inc.  
701 Xenia Avenue South, Suite 300  
Minneapolis, MN 55416

RE: Natural Heritage Review of the proposed Minnetonka Opus AUAR,  
T117N R22W Section 36; Hennepin County

Dear Ms. Penn,

As requested, the Minnesota Natural Heritage Information System has been queried to determine if any rare species or other significant natural features are known to occur within an approximate one-mile radius of the proposed project. Based on this query, rare features have been documented within the search area (for details, please visit the [Rare Species Guide Website](#) for more information on the biology, habitat use, and conservation measures of these rare species). Please note that the following rare features may be adversely affected by the proposed project:

- The rusty patched bumble bee (*Bombus affinis*), a federally-listed endangered species, was documented in the vicinity of the proposed project. The rusty patched bumble bee typically occurs in grasslands and urban gardens with flowering plants from April through October. This species nests underground in abandoned rodent cavities or in clumps of grasses. Please reference the guidance at the [USFWS rusty patched bumble bee website](#) to determine if the project has the potential to impact this protected species.
- Please include a copy of this letter in any state or local license or permit application. Please note that measures to avoid or minimize disturbance to the above rare features may be included as restrictions or conditions in any required permits or licenses.

The Natural Heritage Information System (NHIS), a collection of databases that contains information about Minnesota's rare natural features, is maintained by the Division of Ecological and Water Resources, Department of Natural Resources. The NHIS is continually updated as new information

becomes available, and is the most complete source of data on Minnesota's rare or otherwise significant species, native plant communities, and other natural features. However, the NHIS is not an exhaustive inventory and thus does not represent all of the occurrences of rare features within the state. Therefore, ecologically significant features for which we have no records may exist within the project area. If additional information becomes available regarding rare features in the vicinity of the project, further review may be necessary.

For environmental review purposes, the results of this Natural Heritage Review are valid for one year; the results are only valid for the project location (noted above) and the project description provided on the NHIS Data Request Form. Please contact me if project details change or for an updated review if construction has not occurred within one year.

The Natural Heritage Review does not constitute review or approval by the Department of Natural Resources as a whole. Instead, it identifies issues regarding known occurrences of rare features and potential effects to these rare features. If needed, please contact your [DNR Regional Environmental Assessment Ecologist](#) to determine whether there are other natural resource concerns associated with the proposed project. Please be aware that additional site assessments or review may be required.

Thank you for consulting us on this matter, and for your interest in preserving Minnesota's rare natural resources. An invoice will be mailed to you under separate cover.

Sincerely,



Samantha Bump  
Natural Heritage Review Specialist  
Samantha.Bump@state.mn.us

Links: Rare Species Guide  
<http://www.dnr.state.mn.us/rsg/index.html>  
DNR Regional Environmental Assessment Ecologist Contact Info  
[http://www.dnr.state.mn.us/eco/ereview/erp\\_regioncontacts.html](http://www.dnr.state.mn.us/eco/ereview/erp_regioncontacts.html)  
USFWS Rusty Patched Bumble Bee  
<https://www.fws.gov/midwest/endangered/insects/rpbb/guidance.html>

Cc: Melissa Collins  
Leslie Parris

**Comment**

**Response**



DEPARTMENT OF THE ARMY  
U.S. ARMY CORPS OF ENGINEERS, ST. PAUL DISTRICT  
180 FIFTH STREET EAST, SUITE 700  
ST. PAUL, MN 55101-1678

10/28/2020

Regulatory File No. MVP-2020-02147-MVM

**THIS IS NOT A PERMIT**

Rob Hanson  
14600 Minnetonka Boulevard  
Minnetonka, MN 55345

Dear Mr. Hanson:

We have received your submittal described below. You may contact the Project Manager with questions regarding the evaluation process. The Project Manager may request additional information necessary to evaluate your submittal.

1

File Number: MVP-2020-02147-MVM

Applicant: Rob Hanson

Project Name: Opus Study Area

Project Location: Section 25 of Township 117 North, Range 22, Hennepin County, Minnesota (Latitude: 44.8994646467725; Longitude: -93.4114400687598)

Received Date: 10/27/2020

Project Manager: Marissa Merriman  
(651) 290-5362  
Marissa.V.Merriman@usace.army.mil

Additional information about the St. Paul District Regulatory Program can be found on our web site at <http://www.mvp.usace.army.mil/missions/regulatory>.

Please note that initiating work in waters of the United States prior to receiving Department of the Army authorization could constitute a violation of Federal law. If you have any questions, please contact the Project Manager.

Thank you.

U.S. Army Corps of Engineers  
St. Paul District  
Regulatory Branch

1) Thank you for your acknowledgement of the receipt of the AUAR.

Comment	Response
 <p>520 Lafayette Road North   St. Paul, Minnesota 55155-4194   651-296-6300 800-657-3864   Use your preferred relay service   info.pca@state.mn.us   Equal Opportunity Employer</p> <p>November 23, 2020</p> <p>Robert Hanson Economic Development Coordinator City of Minnetonka 14600 Minnetonka Boulevard Minnetonka, MN 55345</p> <p>Re: Opus Study Area Alternative Urban Area-wide Review Update</p> <p>Dear Robert Hanson:</p> <p>Thank you for the opportunity to review and comment on the Alternative Urban Area-wide Review (AUAR) Update for the Opus Study Area project (Project) in the city of Minnetonka, Hennepin County, Minnesota. The Project consists of a 580-acre mixed-use development area. Regarding matters for which the Minnesota Pollution Control Agency (MPCA) has regulatory responsibility or other interests, the MPCA staff has the following comments for your consideration.</p> <p><b><u>Water Resources (Item 11)</u></b></p> <p><i>Surface Water</i></p> <ul style="list-style-type: none"> <li>Table 7-1 indicates there are 52.3 acres of wetland impacts. Given that the AUAR Update covers 580 acres and a good portion of this is already developed, it not clear how many acres have already been physically altered by development and how many remain unaltered. A table having this broken down would be helpful.</li> </ul> <p><i>Stormwater</i></p> <ul style="list-style-type: none"> <li>There are many wetlands located within the AUAR area. Please note that wetlands may not be utilized for stormwater treatment unless they have gone through the wetland mitigation process.</li> <li>All wetlands and any other surface waters on the site require protection during construction activities, including installation of redundant (double) downgradient sediment controls if the existing 50 feet of buffer must be disturbed to complete the construction.</li> <li>The AUAR discusses use of volume control methods for stormwater runoff, but does not discuss volume reduction methods to retain stormwater onsite, that is not discharged, as required by the MPCA Construction Stormwater (CSW) Permit. If infiltration is prohibited as described in the CSW Permit, then other methods of achieving volume reduction should be considered. Methods include collection and reuse of stormwater, or creation of bioinfiltration areas. Consider also replacing impervious surfaces with pervious surfaces or reducing the amount of impervious surfaces, installing green roofs, maximizing green space and tree planting, or other Green Infrastructure methods described in the MN Stormwater Manual that also provide multiple environmental benefits at the site. Please direct questions regarding CSW Permit requirements to Roberta Getman at 507-206-2629 or <a href="mailto:Roberta.Getman@state.mn.us">Roberta.Getman@state.mn.us</a>.</li> </ul> <p><i>Wastewater</i></p> <ul style="list-style-type: none"> <li>A map indicating the route of the secondary force main, the Opus lift station, and Met Council Blue Lake WWTP should be included.</li> </ul>	<p>1) Table 7-1 is the existing land cover. The table says that there are 63.3 acres of existing wetlands. The paragraph under Table 7-1 states that the majority of the wetlands are and will be preserved within open space corridors.</p> <p>2) All wetland impacts will be address through the appropriate permitting process.</p> <p>3) Comment noted. Redevelopment projects will be required to meet local, state, and federal permit requirements.</p> <p>4) Comment noted. Reuse is one of the options for volume reduction, as stated in the updated sequencing description (see Section 11.b.ii.). However, please note that the City has looked into this in the past, and at Ridgedale specifically, the salinity of the stormwater was too high to be used for irrigation. It is anticipated that this could be the case throughout the study area. Additionally, in Scenario 2 there is a proposed reduction of impervious area from existing conditions.</p> <p>5) Figure 11-8 has been added to illustrate sanitary sewer infrastructure.</p>

Comment	Response
<p data-bbox="289 175 451 245">Robert Hanson Page 2 November 23, 2020</p> <p data-bbox="289 318 1117 459">We appreciate the opportunity to review this Project. Please be aware that this letter does not constitute approval by the MPCA of any or all elements of the Project for the purpose of pending or future permit action(s) by the MPCA. Ultimately, it is the responsibility of the Project proposer to secure any required permits and to comply with any requisite permit conditions. If you have any questions concerning our review of this AUAR update, please contact me by email at <a href="mailto:Karen.kromar@state.mn.us">Karen.kromar@state.mn.us</a> or by telephone at 651-757-2508.</p> <p data-bbox="289 483 369 506">Sincerely,</p> <p data-bbox="289 531 457 553"><i>Karen Kromar</i></p> <p data-bbox="289 581 667 675">Karen Kromar Project Manager Environmental Review Unit Resource Management and Assistance Division</p> <p data-bbox="289 699 342 722">KK:bt</p> <p data-bbox="289 748 604 842">cc: Dan Card, MPCA, St. Paul Roberta Getman, MPCA, Rochester Dave Sahli, MPCA, St. Paul Jim Brist, MPCA, St. Paul</p>	

**Comment**

**Response**



November 23, 2020

Mr. Robert Hanson  
Economic Development Coordinator  
City of Minnetonka  
14600 Minnetonka Blvd  
Minnetonka, MN 55345

RE: Opus Study Area AUAR Update  
Minnetonka, Hennepin County  
SHPO Number: 2021-0245

Dear Mr. Hanson:

Thank you for providing this office with a copy of the Draft Alternative Urban Area Review (AUAR) for the Opus Study Area.

Based on our review of the project information, we conclude that there are no properties listed in the National or State Registers of Historic Places and no known or suspected archaeological properties in the area that will be affected by this project.

1

Please note that this comment letter does not address the requirements of Section 106 of the National Historic Preservation Act of 1966 and 36CFR800, procedures of the Advisory Council on Historic Preservation for the protection of historic properties. If this project is considered for federal assistance, or requires a federal license or permit, it should be submitted to our office by the responsible federal agency.

Please contact Kelly Gragg-Johnson, Environmental Review Specialist, at [kelly.graggjohnson@state.mn.us](mailto:kelly.graggjohnson@state.mn.us) if you have any questions regarding our review of this project.

Sincerely,

Sarah J. Beimers  
Environmental Review Program Manager

---

MINNESOTA STATE HISTORIC PRESERVATION OFFICE  
50 Sherburne Avenue ■ Administration Building 203 ■ Saint Paul, Minnesota  
55155 ■ 651-201-3287 [mn.gov/admin/shpo](http://mn.gov/admin/shpo) ■ [mnshpo@state.mn.us](mailto:mnshpo@state.mn.us)  
AN EQUAL OPPORTUNITY AND SERVICE PROVIDER

1) Thank you for the comment acknowledgement that there are no listed historic or archeological sites within the AUAR.

**Comment**



Metropolitan District  
Waters Edge Building  
1500 County Road B2 West  
Roseville, MN 55113

November 23, 2020

Robert Hanson  
Economic Development Coordinator  
City of Minnetonka  
14600 Minnetonka Blvd.  
Minnetonka, MN 55345

SUBJECT: MnDOT Review #AUAR20-006  
**City of Minnetonka Opus Study Area AUAR**  
NW Quad US 169 & MN62  
Minnetonka, Hennepin County

Dear Mr. Hanson,

Thank you for the opportunity to review the **City of Minnetonka Opus Study Area AUAR**. MnDOT staff has reviewed the documents and has the following comments:

**Noise:**

MnDOT's policy is to assist local governments in promoting compatibility between land use and highways. Residential uses located adjacent to highways often result in complaints about traffic noise. Traffic noise from this highway could exceed noise standards established by the Minnesota Pollution Control Agency (MPCA), the U.S. Department of Housing and Urban Development, and the U.S. Department of Transportation. Minnesota Rule 7030.0030 states that municipalities having the authority to regulate land use shall take all reasonable measures to prevent the establishment of land use activities, listed in the MPCA's Noise Area Classification (NAC), anywhere that the establishment of the land use would result in immediate violations of established State noise standards.

1

MnDOT policy regarding development adjacent to existing highways prohibits the expenditure of highway funds for noise mitigation measures in such developed areas. The project proposer is required to assess the existing noise situation and take the action deemed necessary to minimize the impact to the proposed development from any highway noise.

If you have any questions regarding MnDOT's noise policy please contact Natalie Ries in Metro District's Noise and Air Quality Unit at [Natalie.Ries@state.mn.us](mailto:Natalie.Ries@state.mn.us) or 651-234-7681.

An equal opportunity employer

MnDOT Metropolitan District, Waters Edge Building, 1500 County Road B2 West, Roseville, MN 55113

**Response**

1) Thank you for your comment. The City is aware of their responsibility in regulating State and Federal noise requirements. The text in the AUAR provides the following reference; "*The developments within the Opus Study Area will be constructed in accordance with the City's established noise ordinance as outlined in the City Code*" and, noise mitigation plan; "*Development adjacent to land uses that are sensitive (i.e., residential units or parks) to noise will have sufficient setbacks and landscaping within and adjacent to each specific project boundary to help minimize and mitigate the effects of the anticipated noise generated from the project*"

Comment	Response
<p><i>Bicycle/Pedestrian:</i></p> <p>MnDOT commends the effort taken to plan for a complete non-motorized network with connections to the regional transit and non-motorized systems. <span style="float: right; border: 1px solid black; padding: 2px 10px;">2</span></p> <p>For questions regarding this comment, contact Jesse Thomsen, Metro Multimodal, at <a href="mailto:Jesse.Thomsen@state.mn.us">Jesse.Thomsen@state.mn.us</a> or 651-234-7788.</p> <p><i>Traffic:</i></p> <p>MnDOT has the following comments pertaining to the signal design and signal operations for Scenario 2 of the Transportation Mitigation Plan: <span style="float: right; border: 1px solid black; padding: 2px 10px;">3</span></p> <p>Signal Design—</p> <ul style="list-style-type: none"> <li>• At southbound US 169 &amp; Bren, the current layout already has a dedicated right turn, a shared through/right turn, and a single left turn lane.</li> <li>• MnDOT would like to see the background calculations for tables 18-8 and 18-9 to ensure calculations didn't assume two left turn lanes and a single right turn.</li> </ul> <p>Signal Operations—</p> <ul style="list-style-type: none"> <li>• MnDOT is not sure that in trying to shorten the inside left turn lane under the MN 62 bridge (so as to keep it to only four lanes under the bridge) that the lane would become so short that it would be necessary to remove it entirely.</li> <li>• The intersection at MN 62 &amp; Shady Oak is run by the county. It is currently a blind spot for the Regional Transportation Management Center (RMTC) and needs to have traffic cameras with fiber optics and Pan-Tilt-Zoom (PTZ) technology. MnDOT is working towards accommodating Connected and Automated Vehicles (CAV) in the future and these are standards that are being required for any revision to MnDOT's signal systems.</li> <li>• Bren already has a shared through right. The reason for a dedicated right turn lane is unclear since there is minimal through traffic at this location.</li> <li>• MnDOT will also need to see the modeling.</li> </ul> <p>Please provide the requested information to Mathias Dall, Metro Traffic Engineering, at <a href="mailto:mathias.dall@state.mn.us">mathias.dall@state.mn.us</a> or 651-234-7841.</p> <p><i>Review Submittal Options</i></p> <p>MnDOT's goal is to complete reviews within 30 calendar days. Review materials received electronically can be processed more rapidly. Do not submit files via a cloud service or SharePoint link. In order of preference, review materials may be submitted as: <span style="float: right; border: 1px solid black; padding: 2px 10px;">4</span></p> <ol style="list-style-type: none"> <li>1. Email documents and plans in PDF format to <a href="mailto:metrodevreviews.dot@state.mn.us">metrodevreviews.dot@state.mn.us</a>. Attachments may not exceed 20 megabytes per email. Documents can be zipped as well. If multiple emails are necessary, number each message.</li> <li>2. PDF file(s) uploaded to MnDOT's external shared internet workspace site at: <a href="https://mft.dot.state.mn.us">https://mft.dot.state.mn.us</a>. Contact MnDOT Planning development review staff at <a href="mailto:metrodevreviews.dot@state.mn.us">metrodevreviews.dot@state.mn.us</a> for uploading instructions, and send an email listing the file name(s) after the document(s) has/have been uploaded.</li> <li>3. Mailed or hand delivered documents in PDF format on a flash drive or CD-ROM to:</li> </ol> <p>MnDOT Metropolitan District, Waters Edge Building, 1500 County Road B2 West, Roseville, MN 55113</p>	<p>2) Thank you for the positive comment on the non-motorized network plans.</p> <p>3) Thank you for your comments pertaining to the signal design and signal operations for Scenario 2. We recognize that more discussions will be needed regarding the proposed mitigations proposed with this scenario. The City of Minnetonka will monitor development as it occurs and determine when mitigation will be needed. If enough development is proposed to trigger mitigation, the City will work with the appropriate agencies to develop a designed that is appropriate for the location and traffic levels expected.</p> <p>4) Comment noted.</p>

**Comment**

**Response**

MnDOT – Metro District Planning Section  
Development Reviews Coordinator  
1500 West County Road B-2  
Roseville, MN 55113

- 4. Printed documents via mail or hand delivery to the address above. Include one set of full-size plans.

If you have any questions concerning this review, please contact me at (651) 234-7797.

Sincerely,



Cameron Muhic  
Senior Planner

**Copy sent via E-Mail:**

Buck Craig, Permits  
Mark Fairbrother, Water Resources  
Mathias Dall, Traffic  
Douglas Nelson, Right-of-Way  
Mackenzie Turner Borgen, Multimodal  
Jason Junge, Transit  
Russell Owen, Metropolitan Council

Lance Schowalter, Design  
Jason Swenson, Water Resources  
Andrew Lutaya, Area Engineer  
Rick Bruss, Surveys  
Jesse Thorsen, Multimodal  
Natalie Ries, Noise

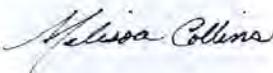
Comment	Response
<div data-bbox="289 196 394 363" data-label="Image"> </div> <div data-bbox="415 196 701 342" data-label="Text"> <p>Nine Mile Creek Discovery Point 12800 Gerard Drive Eden Prairie, MN 55346 (952) 835-2078 www.ninemilecreek.org</p> </div> <div data-bbox="789 245 863 271" data-label="Text"> <p>MEMO</p> </div> <div data-bbox="283 384 915 539" data-label="Text"> <p>TO: Robert Hanson, Economic Development Coordinator, City of Minnetonka</p> <p>FROM: Randy Anhorn, Administrator</p> <p>DATE: November 24, 2020</p> <p>RE: Comments on Opus Study Area AUAR Update</p> </div> <hr/> <div data-bbox="283 570 1117 621" data-label="Text"> <p>Having reviewed the draft study update cited in the caption above, Nine Mile Creek Watershed District has the following comments:</p> </div> <div data-bbox="283 641 371 665" data-label="Section-Header"> <p><b>General</b></p> </div> <div data-bbox="315 664 1121 928" data-label="List-Group"> <ul style="list-style-type: none"> <li> <p><i>Planning for stormwater management and climate resilience.</i> NMCWD stands ready to work in partnership with Minnetonka to explore opportunities to plan for and implement efficient, effective stormwater management and flood control in the Opus study area (and elsewhere in the city, for that matter). As a baseline matter, NMCWD's rules provide an avenue for compliance with stormwater-management requirements on a regional – rather than site-by-site – basis.<sup>1</sup> Such an approach allows planned redevelopment to proceed under a substantially streamlined NMCWD regulatory review, and likely would be more cost-effective than permitting individual site-redevelopment projects. City of Minnetonka and NMCWD staff have experience successfully utilizing this framework for regulatory approval for redevelopment of the 11-acre Shady Oak Road South area adjacent to the Southwest Light Rail Transit line in Minnetonka and Hopkins.</p> </li> </ul> </div> <div data-bbox="346 935 1121 1269" data-label="Text"> <p>A regional approach also provides better protection against flooding and related high-water risks, which will be increasingly challenging for landscapes like the Opus study area that were principally developed in the 1960s and '70s, and for low-lying properties such as are found in the northeast corner of the study area. The draft Opus AUAR update does not explicitly address the reality of rainfall amounts that have increased from the time the Opus area was first developed (as shown by the 2013 National Oceanic and Atmospheric Administration Precipitation-Frequency Atlas for the Midwestern States (Atlas 14, Volume 8)) and – more important for the purpose – a predicted increase in the amount of rain and intensity of extreme events in coming years. <b>Coordination of the city's exercise of its land-use planning authority with NMCWD's expertise and regulatory authority for management of stormwater and flood-storage will be critical to the successful implementation of either Scenario 1 or Scenario 2 of the Opus AUAR update.</b> Such efforts are necessary to incorporate climatic change resiliency into the Opus area plan as it relates to flooding and stormwater management and will be particularly useful and</p> </div> <div data-bbox="283 1328 1121 1377" data-label="Footnote"> <p><sup>1</sup> See subsection 4.3.6 at <a href="http://www.ninemilecreek.org/wp-content/uploads/NMCWD-Rules-FINAL-April-18-2018-1.pdf">http://www.ninemilecreek.org/wp-content/uploads/NMCWD-Rules-FINAL-April-18-2018-1.pdf</a>.</p> </div>	<div data-bbox="1329 110 1944 386" data-label="Text"> <p>1) The City and NMCWD have a strong relationship and the City will continue to look for opportunities to provide regional treatment as developments are proposed and were it is possible. As mentioned, the City and NMCWD have experience with successfully implementing a regional stormwater basin as part of the Shady Oak Road South area as part of the SWLRT project.</p> </div> <div data-bbox="1150 699 1230 771" data-label="Text"> <p>1</p> </div>

Comment	Response
<p>important if Scenario 2, with its more intensive land uses and apparent increase in impervious surface (and resulting runoff), is implemented.</p> <p>Finally with regard to regional runoff-management planning: The Opus AUAR update provides useful data and narrative text regarding the variety of wetlands in the area. Advance regional planning for stormwater and flood management will be essential to protecting and improving these wetland resources as well.</p> <ul style="list-style-type: none"> <li> <p><b>Imperviousness projections.</b> As noted, it appears that Scenario 2 presents a slight increase in the overall imperviousness of the Opus study area. But in reviewing tables 6-1, 6-2, 9-2, 9-3 and 11-6 and accompanying text, it is difficult to be sure. NMCWD recommends expansion of the tables to show overall impervious increase from existing for each scenario, and an expansion of the explanation of how the pollutant-loading analysis summarized in Table 11-7 was completed. In addition, NMCWD recommends a re-review of the various tables and text showing quantities of open water and wetlands under existing and proposed conditions; it appears that quantity (in acres) of open water and wetlands are conflated in some places.</p> <p style="text-align: right;">2</p> </li> <li> <p><b>Clarity as between scenarios.</b> NMCWD understands that the update added Scenario 2 to the Opus AUAR. We encourage a fresh review to ensure that the AUAR update is clear as to whether mitigation measure statements apply to one scenario or the other or both; sometimes this is not clear.</p> <p style="text-align: right;">3</p> </li> <li> <p><b>Compliance with state law.</b> NMCWD did not review the AUAR update for compliance with applicable environmental-review requirements, leaving such specifics to the city.</p> <p style="text-align: right;">4</p> </li> <li> <p><b>Regulatory Authority.</b> NMCWD's regulatory authority and its rules are under- and misrepresented in a couple of places in the AUAR update. Specific notes are tied to specific AUAR update text below, but generally please note the relevant provisions for erosion and sediment control, wetland buffers and stormwater management in the rules, available at <a href="http://www.ninemilecreek.org/wp-content/uploads/NMCWD-Rules-FINAL-April-18-2018-1.pdf">http://www.ninemilecreek.org/wp-content/uploads/NMCWD-Rules-FINAL-April-18-2018-1.pdf</a>.</p> <p style="text-align: right;">5</p> </li> <li> <p><b>Typos and grammatical snafus hamper ready understanding in some places.</b> NMCWD has offered notes on specific text in markup format in a copy of the Opus area study update that has been uploaded to a Dropbox folder at: <a href="https://www.dropbox.com/sh/dnmllyd2f54tzxd/AABETJnoaToyBzaVROJWB_aia?dl=0">https://www.dropbox.com/sh/dnmllyd2f54tzxd/AABETJnoaToyBzaVROJWB_aia?dl=0</a>. (Please contact me if you have any difficulty accessing the file.)</p> <p style="text-align: right;">6</p> </li> </ul> <p><b>Text-specific notes</b></p> <ul style="list-style-type: none"> <li> <p>The AUAR update includes references in several places to stormwater runoff volume-control sequencing: subsection II. 4) i (p. 7) and two places in subsection III, 11) b. ii – one in the text captioned Stormwater Best Management Practices and the other Stormwater Mitigation Plan subsections (p. 27). In each case, the sequence should be revised to reflect the sequencing requirements in NMCWD rule section 4.3, available at: <a href="http://www.ninemilecreek.org/wp-content/uploads/NMCWD-Rules-FINAL-April-18-2018-1.pdf">http://www.ninemilecreek.org/wp-content/uploads/NMCWD-Rules-FINAL-April-18-2018-1.pdf</a>. Under these provisions, NMCWD would apply reduced volume-control requirements only after a property has been determined to be 'restricted' in accordance with 4.3.2.</p> <p style="text-align: right;">7</p> </li> </ul>	<p>2) Updates have been made to Table 11-6 to include existing impervious area. Rather than including the equations behind the pollutant loading calculations in the AUAR, we've included them here for your reference.</p> <p><b>To calculate runoff:</b></p> $Q = \frac{(P-I_a)^2}{(P-I_a)+S} \quad S = \frac{1000}{CN} - 10 \quad I_a = 0.2S$ <p>where <math>Q</math> = annual runoff (in)  <math>P</math> = average annual rainfall (in)  <math>S</math> = potential maximum retention  <math>I_a</math> = initial abstraction  <math>CN</math> = curve number</p> <p><b>To calculate pollutant load:</b></p> $C_{TP} = Q * EMC_{TP} * 2.72$ $C_{TSS} = Q * EMC_{TSS} * 2.72 * 2000$ $CI_{TP} = C_{TP} * (1 - 0.6)$ $CI_{TSS} = C_{TSS} * (1 - 0.9)$ <p>where <math>C</math> =  existing annual <math>\frac{TP}{TSS}</math> load (lb/ton respectively)  <math>Q</math> = annual runoff (ac - ft)  <math>EMC</math> = event mean concentration (mg/L)  <math>CI</math> = proposed annual TP/TSS load with water quality improvements (lb/ton respectively)</p> <p>Comment noted regarding the open water and wetlands being combined in some tables.</p> <p>3) Comment noted.</p> <p>4) Comment noted.</p> <p>5) Comment noted. Updates have been made to section 11.b.ii to clarify.</p> <p>6) The document has been corrected.</p> <p>7) Updates have been made to section 11.b.ii. to provide additional information and clarifications.</p>

Comment	Response
<ul style="list-style-type: none"> <li>Table 8-1 (p. 15) lists permits and approvals that will be needed for land-disturbing projects in the area. Applicable and potentially applicable requirements in the NMCWD floodplain-alteration, erosion-and-sediment-control, stormwater-management and wetlands rules should be referenced in the list of permits and approvals under the Regional/County/Local Regulatory Agencies heading here.</li> </ul> <p style="text-align: right; border: 1px solid black; width: 30px; margin: 0 auto;">8</p> <ul style="list-style-type: none"> <li>In the first bullet in the Stormwater Regulations section on page 26, the statement of the threshold for all imperviousness on a property to be subject to NMCWD stormwater management requirements needs to be expanded to state: <u>If 50 percent or more of the impervious surface of the site is disturbed or the impervious surface is increased by more than 50 percent.</u> (See also footnote 1 on Table 11-8.)</li> </ul> <p>The subsequent paragraph asserts that because soils in the study area are characterized as Hydrologic Soil Group C and C/D, infiltration would not be feasible. This is useful information and soil conditions may be the basis for a 'restricted-site' determination, but under the NMCWD Rule 4.0 – Stormwater Management, volume-retention analyses must be completed on a site-by-site basis.</p> <p>In the second paragraph under that bullet, the discussion should reference NMCWD's restricted-site framework for existing site constraints that limit the capacity of a project on such a property to provide volume retention.</p> <p>Under the Water Quality heading in the same section, the first bullet states, "This analysis assumes that if volume control via infiltration is met for the site, the water quality requirements are also satisfied." This is generally true but the water-quality requirements are based on an annual removal efficiency rather than 1.1 inches of retention. The necessary modelling needs to be completed and provided to show that the required annual removal efficiencies for total suspended solids and total phosphorus are met.</p> <p>The discussion above of NMCWD regional stormwater-management plan option (subsection 4.3.6 of the NMCWD rules) is particularly relevant to the Redevelopment Scenarios section here.</p> <p>Page 28: Table 11-8; the current stormwater requirements discussion needs to be expanded to include water quality management based on an annual removal efficiency of 60 percent for total phosphorous and 90 percent for total suspended solids. In addition, the table states that rate control must be analyzed (only) if drainage patterns change. But rate-control analysis is required under the NMCWD rules whether the drainage patterns change or not.</p> <ul style="list-style-type: none"> <li>The first paragraph in the Stormwater Best Management Practices section on page 29 should state that NMCWD's wetland classifications are based on accepted Minnesota Routine Assessment Method results.</li> </ul> <p style="text-align: right; border: 1px solid black; width: 30px; margin: 0 auto;">9</p> <p>The last sentence of this paragraph should be modified to note that volume retention <u>and water quality</u> treatment would still be required.</p> <p>The volume-retention sequencing summary here should be revised to reflect NMCWD's 'unrestricted/restricted site' stormwater-management analytical framework. Specifically, under subsection 4.3.2 of the NMCWD rules, the reduced volume retention requirements of 0.55 inches or maximum extent practicable are only available if a site is demonstrated to be a 'restricted' in accordance with the NMCWD rule. (The sequencing framework in the</p> <p style="text-align: right; border: 1px solid black; width: 30px; margin: 0 auto;">10</p>	<p>8) Updates have been made to Table 8-1.</p> <p>9) Updates have been made to section 11.b.ii. to provide additional information and clarifications.</p> <p>10) Updates have been made to section 11.b.ii. to provide additional information and clarifications.</p>

Comment	Response
<p>subsequent Stormwater Mitigation Plan section and in the Summary of Mitigation Measures – item II.4 – should be revised accordingly as well.)</p> <ul style="list-style-type: none"> <li>▪ The Water Appropriation section on page 29 should cite NMCWD Rule 9.0 as potentially applicable.</li> <li>▪ In subsection iv. a on page 33, NMCWD wetland-buffer requirements should be noted as applicable.</li> <li>▪ NMCWD’s ‘restricted-site’ volume-retention framework could be included as potentially applicable to the properties identified in section 12a on page 34. That is, actual or potential subsurface contamination is a factor in determining whether a property is ‘restricted’ under the NMCWD rule.</li> </ul> <p><b>Appendix A: Figures</b></p> <ol style="list-style-type: none"> <li>1. Figures 7-3- and 7-4 are referenced in section III. 7 in the update, but are not included in the appendix. NMCWD would appreciate having a chance to review these figures.</li> </ol>	<p>11) Appropriations of Public Surface Waters permitting has been added to Table 8-1 and Rule 9.0 was added to Section 11.b.i.d)ii.</p> <p>12) Comment noted and AUAR text revised accordingly.</p> <p>13) Comment noted and text revised in section 12.a. accordingly.</p> <p>14) The reference to Figures 7-3 and 7-4 have been removed. Scenario 1 is illustrated on Figure 6-1 and Scenario 2 is illustrated on Figure 6-2.</p>

Comment	Response
 <p>Division of Ecological and Water Resources Region 3 Headquarters 1200 Warner Road Saint Paul, MN 55106</p> <p>November 24, 2020</p> <p>Rob Hanson Economic Development Coordinator City of Minnetonka 14600 Minnetonka Blvd. Minnetonka, MN 55345</p> <p>Dear Mr. Hanson,</p> <p>Thank you for the opportunity to review the Opus Study Area Draft AUAR. The DNR respectfully submits the following comments for your consideration:</p> <ol style="list-style-type: none"> <li>1. Page 7, Stormwater Mitigation Plan. Please consider reusing stormwater to irrigate the landscaping in the AUAR area. This will reduce the runoff from the site, reduce the pollution from the site, and reduce the use of groundwater from the City of Minnetonka water system. <span style="float: right; border: 1px solid black; padding: 2px 10px;">1</span></li> <li>2. Page 14, Cover Types. DNR is pleased that all wetlands, and other open spaces will be preserved. <span style="float: right; border: 1px solid black; padding: 2px 10px;">2</span></li> <li>3. Page 15, Permits and Approvals. Any impact to public waters/wetlands would require a DNR Public Waters Permit. <span style="float: right; border: 1px solid black; padding: 2px 10px;">3</span></li> <li>4. Page 21, Groundwater. We appreciate the inclusion of the depth to groundwater used for domestic water use (drinking water). It should also be noted that with wetlands on a significant portion of the site, there will be more shallow groundwater that is not used as a drinking water source located near to the surface of portions of the site. <span style="float: right; border: 1px solid black; padding: 2px 10px;">4</span></li> <li>5. Page 21, Groundwater. The DNR would like to remind Opus that should unknown wells be discovered on these parcels, that the wells will need to be sealed in accordance with the regulations of the Minnesota Department of Health. <span style="float: right; border: 1px solid black; padding: 2px 10px;">5</span></li> <li>6. Page 22, Wastewater. Please note that any construction dewatering, including work on wastewater interceptors, that will pump more than 10,000 gallons of water per day, or one million gallons per year, will need approval under a DNR Water Appropriation Permit. <span style="float: right; border: 1px solid black; padding: 2px 10px;">6</span></li> <li>7. Page 24, Stormwater. The large amount of impervious surfaces within the project area, particularly for parking, will require the application of road salt for winter maintenance. <span style="float: right; border: 1px solid black; padding: 2px 10px;">7</span></li> </ol>	<p>1) Stormwater reuse (most commonly used for irrigation), is included as one of the options for volume control BMPs in Section 11.b.i.d)ii. Please note that the city has looked into this in the past, but at Ridgedale specifically, the salinity of the stormwater was too high to be used for irrigation. It is anticipated that this could be the case throughout the study area.</p> <p>2) Comment noted.</p> <p>3) Comment noted and AUAR has been revised to include this permit.</p> <p>4) Information is added to Section 11.a.ii. that shallow groundwater exists but is not used for a source of drinking water.</p> <p>5) Comment noted.</p> <p>6) Comment noted and Table 8-1 includes this permit.</p> <p>7) Information regarding the city's stormwater reuse strategies has been added to Section 11.b.i.d)ii.</p>

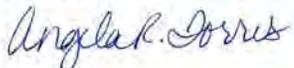
Comment	Response
<p>Chloride released into local lakes and streams does not break down, and instead accumulates in the environment, potentially reaching levels that are toxic to aquatic wildlife and plants. Consider promoting local business and city applicator participation in the Smart Salting Training offered through the Minnesota Pollution Control Agency. More information and resources can be found at this <a href="#">website</a>. Many winter maintenance staff who have attended the Smart Salting training — both from cities and counties and from private companies — have used their knowledge to reduce salt use and save money for their organizations.</p> <p>8. Page 29, Water Appropriation. Without details on the actual buildings that will be constructed on this site, the DNR would like to remind Opus that should underground parking be constructed that needs to be dewatered on a continuous basis using sumps, a DNR Water Appropriation Permit will be needed if the volume that is pumped exceeds 10,000 gallons per day, or one million gallons per year.</p> <p>9. Page 37, Invasive Species. Multiple invasive species have been documented within the project area including: emerald ash borer, leafy spurge, and purple loosestrife.</p> <p>10. Page 38, Protecting Pollinators. The DNR is pleased to see the City of Minnetonka promoting the establishment of pollinator habitat as well as practices to support local pollinators.</p> <p>Thank you again for the opportunity to comment. Please let me know if you have any questions.</p> <p>Sincerely,</p>  <p>Melissa Collins  Regional Environmental Assessment Ecologist   Ecological and Water Resources  Minnesota Department of Natural Resources  1200 Warner Road  St. Paul, MN 55106  Phone: 651-259-5755  Email: melissa.collins@state.mn.us</p> <p>CC:</p> <p><i>Equal Opportunity Employer</i></p>	<p>8) Comment noted.</p> <p>9) Comment noted. The Fish, Wildlife, Plant Communities, and Sensitive Ecological Resources Mitigation Plan will be implemented during development.</p> <p>10) Comment noted.</p>

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Comment	Response
<p>November 25, 2020</p> <p>Rob Hanson, Economic Development Coordinator City of Minnetonka 14600 Minnetonka Boulevard Minnetonka, MN 55345</p> <p><b>RE: City of Minnetonka – Opus Study Area Alternative Urban Areawide Review</b> Metropolitan Council Review File No. 22503-1 Metropolitan Council District No. 5</p> <p>Dear Mr. Hanson:</p> <p>Metropolitan Council staff completed its review of the Opus Study Area Alternative Urban Areawide Review (AUAR) to determine its accuracy and completeness in addressing regional concerns. Staff concludes that the AUAR is complete and accurate with respect to regional concerns and does not raise major issues of consistency with Council policies.</p> <p>Please be advised that Minnesota Environmental Rules (Minn. Stat. § 4410.3610, subd. 3) require that at least one scenario in an AUAR be consistent with a City's adopted comprehensive plan. Although the City's 2040 comprehensive plan is currently scheduled for Council action on December 23, 2020, the City's current adopted comprehensive plan is the 2030 comprehensive plan. Council staff find that Scenario 1 of the AUAR is consistent with both the 2030 comprehensive plan and the pending 2040 comprehensive plan. Council staff advise the City to delay the issuance of a final order and record of decision until after the City locally adopts the 2040 comprehensive plan. Alternatively, the AUAR can be modified to address consistency of Scenario 1 with either the 2030 Plan or the 2040 Plan.</p> <p>Staff offers the following comments for your consideration:</p> <p><b>Forecasts</b> (<i>Todd Graham, 651-602-1322</i>) The City's pending 2040 comprehensive plan expects TAZ #1022 (the southern half of the study area) and TAZ #1023 (the northern half of the study area) to have a combined 2,652 households, 5,775 population, and 17,206 jobs by 2040. The development assumptions presented in Scenario 1 are closely aligned with these forecasts.</p> <p>Should the City pursue development in the subject area that is more intense than Scenario 1, Council staff advise the City to adjust forecasts both at the TAZ level and citywide. Forecast adjustments would depend on the eventual development details. The community forecast change can be pursued through a future comprehensive plan amendment, separate from this AUAR. Please contact Council forecast staff to discuss.</p> <p><b>Housing</b> (<i>Ashleigh Johnson, 651-602-1106</i>) The City's pending 2040 comprehensive plan currently guides enough land to address its current affordable housing need allocation, which is 1,064 units. At guided densities that support the development of affordable housing (8 units per acre or greater), the City's Plan identifies enough acreage to support 1,091 units. Please be advised that any future forecast increase during the 2021-2030</p> <div style="text-align: right; margin-top: 20px;"> <div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 10px;">1</div> <div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 10px;">2</div> <div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center;">3</div> </div> <div style="margin-top: 20px;"> <p>390 Robert Street North   Saint Paul, MN 55101-1805 P. 651.602.1000   TTY. 651.291.0904   metrocouncil.org</p>  </div>	<p>1) Thank you for your comment. The AUAR acknowledges in Table 8-1 and Section 9.b. that a Comprehensive Plan amendment will be required for the development of Scenario 2. Any Comprehensive Plan amendment will be submitted to the Metropolitan Council and discussion will occur then.</p> <p>2) The City acknowledges the potential need for a future comprehensive plan amendment if development in this area becomes more intense than Scenario 1. The City will contact Council staff if a more intense Scenario is likely.</p> <p>3) Minnetonka Resolution 2020-096 continues the City's participation in the Local Housing Account Program under the Metropolitan Livable Communities Act calendar years 2021 through 2030.</p>

Comment	Response
<p>decade will increase the City's affordable housing need allocation. Please contact Council Housing staff or your sector representative to discuss this possibility.</p> <p><b>Land Use (Michael Larson, 651-602-1407)</b>  The Existing Land Use Map in the AUAR (Figure 5.2) appears to incorrectly identify Eagle Ridge Academy and West Education Center (in the western portion of the study area) as Mixed Use Industrial. These uses would be more accurately identified as Institutional. These locations are identified as such on the Existing Land Use Map (Figure 3-1) in the City's pending 2040 comprehensive plan. This change would also be consistent with the uses identified in Scenario 1 (Figure 6.1) and Scenario 2 (Figure 6.2).</p> <p>Bren Road Station Senior Apartments, currently under construction, is incorrectly identified as an Office Use.</p> <p>Figures 6.1 and 6.2 do not identify a land use for the two existing hotels within the study area (Holiday Inn Express and Minneapolis Marriott Southwest).</p> <p><b>Item 16b. Vehicle Emissions (Cameran Bailey, 651-602-1212)</b>  Council staff recommends the adoption and integration of electric vehicle charging infrastructure or infrastructure that supports the future implementation of electric vehicle charging. The City may also consider the integration of supporting infrastructure for shared mobility and non-single-occupancy-vehicle options. These infrastructure and alternative transportation options produce fewer harmful air pollutants and support more active living and mobility. Such actions would support the following Policy Action in the City's 2040 comprehensive plan: "Minimize the effect of air quality impacts on the natural environments with proposed transportation improvements (Policy 7.3)." Guidance can be found in the Great Plains Institute's "Becoming Electric Vehicle Ready" (<a href="https://www.betterenergy.org/blog/making-your-city-ev-ready/">https://www.betterenergy.org/blog/making-your-city-ev-ready/</a>) guideline document.</p> <p>The Council will not take formal action on the AUAR. If you have any questions or need further information, please contact Michael Larson, Principal Reviewer, at 651-602-1407.</p> <p>Sincerely,</p>  <p>Angela R. Torres, AICP, Manager  Local Planning Assistance</p> <p>CC: Tod Sherman, Development Reviews Coordinator, MnDOT - Metro Division  Loren Gordon, City Planner, City of Minnetonka  Molly Cummings, Metropolitan Council District No. 5  Judy Svontek, Water Resources Manager  Michael Larson, AICP, Sector Representative/Principal Reviewer  Reviews Coordinator</p> <p><small>N:\CommDev\LPA\Communities\Minnetonka\Letters\Minnetonka 2020 Opus Study Area AUAR 22503-1.docx</small></p> <p>Page - 2   November 25, 2020   METROPOLITAN COUNCIL</p>	<p>4) Figure 5.2 has been updated.</p> <p>5) Additional information regarding Minnetonka's fleet operations, capital improvements program, and electronic charging stations have been added to Section 16)b.</p>

Comment	Response
<div data-bbox="457 142 957 214" data-label="Section-Header"> <p style="text-align: center;">HENNEPIN COUNTY MINNESOTA</p> </div> <div data-bbox="289 256 611 383" data-label="Text"> <p>Mr. Rob Hanson Economic Development Coordinator City of Minnetonka 14600 Minnetonka Blvd Minnetonka, MN 55345</p> </div> <div data-bbox="869 256 1041 279" data-label="Text"> <p style="text-align: right;">November 25, 2020</p> </div> <div data-bbox="289 412 1115 487" data-label="Text"> <p>Re: Hennepin County staff comments on the proposed Draft Alternative Urban Areawide Review (AUAR) of the Opus Study Area development in Minnetonka as advertised in the EQB Monitor October 26, 2020</p> </div> <div data-bbox="289 516 447 539" data-label="Text"> <p>Dear Mr. Hanson:</p> </div> <div data-bbox="289 568 1129 721" data-label="Text"> <p>The project includes the continued development approximately 580 acre Opus Study Area located in the southeastern corner of the City of Minnetonka. The Opus draft AUAR includes the review of two development scenarios. Scenario 1 is generally consistent with the City's 2040 Comprehensive Plan and Scenario 2 reflects land use development that is more intense than Scenario 1 and that would be supported by the construction of the Opus Station of the Green Line Light Rail Transit (LRT).</p> </div> <div data-bbox="289 750 489 773" data-label="Section-Header"> <p>GENERAL COMMENTS</p> </div> <div data-bbox="321 802 1115 902" data-label="Text"> <p>It is important to note that all types of mitigation should be evaluated at county intersections to ensure all movements that are currently operating at an acceptable level of service continue do so after the improvements, and that the minimum acceptable level of service is D.</p> </div> <div data-bbox="1157 776 1234 844" data-label="Text"> <p style="text-align: center;">1</p> </div> <div data-bbox="321 932 1121 1032" data-label="Text"> <p>A number of the mitigation efforts described may require additional ROW and design that meets Hennepin County standards. It will be important to recognize that the developer and the city are expected to cover the cost of these improvements and secure Hennepin County approval of the design before implementation.</p> </div> <div data-bbox="1157 941 1234 1010" data-label="Text"> <p style="text-align: center;">2</p> </div> <div data-bbox="289 1062 741 1084" data-label="Section-Header"> <p><b>7) Transportation Mitigation Plan</b> PAGE 8 AND 9</p> </div> <div data-bbox="289 1114 642 1136" data-label="Text"> <p>No mitigation is required for Scenario 1.</p> </div> <div data-bbox="1157 1055 1234 1123" data-label="Text"> <p style="text-align: center;">3</p> </div> <div data-bbox="289 1166 772 1188" data-label="Section-Header"> <p><b>For Scenario 2, the following mitigation is required:</b></p> </div> <div data-bbox="352 1218 1115 1292" data-label="Text"> <p><b>iii. Add second left turn lane on Southbound Shady Oak Road at Bren Road with a minimum storage of 300 feet. Need protected left turn movements on east/west approaches to this intersection. (Intersection 6)</b></p> </div> <div data-bbox="1157 1218 1234 1286" data-label="Text"> <p style="text-align: center;">4</p> </div> <div data-bbox="386 1321 1125 1370" data-label="List-Group"> <ul style="list-style-type: none"> <li>o This mitigation measure would require significant effort and possibly require additional ROW to make this happen. As before, this design would need to meet</li> </ul> </div> <div data-bbox="289 1422 762 1490" data-label="Text"> <p>Hennepin County Transportation Project Delivery Public Works Facility, 1600 Prairie Drive, Medina, MN 55430 hennepin.us</p> </div> <div data-bbox="1052 1419 1121 1500" data-label="Image"> </div>	<div data-bbox="1339 110 1896 230" data-label="Text"> <p>1) The City of Minnetonka acknowledges the need to consider all types of mitigation to maintain an acceptable level of service of D on the County Road system.</p> </div> <div data-bbox="1339 263 1906 415" data-label="Text"> <p>2) The City of Minnetonka recognizes the need for planning to ensure funding is available if mitigation is needed as identified for Scenario 2 and that Hennepin County approval of design is needed before implementation.</p> </div> <div data-bbox="1339 448 1896 506" data-label="Text"> <p>3) Thank you for the acknowledgement that no mitigation would be required for Scenario 1.</p> </div> <div data-bbox="1339 539 1927 902" data-label="Text"> <p>4) Thank you for your comments pertaining to the mitigation necessary for Scenario 2. We recognize that more discussions will be needed regarding the proposed mitigation during planning and design of the mitigation measures if they are needed. The City of Minnetonka will monitor development as it occurs and determine if and/or when mitigation may be needed based on level of service "D". If mitigation is needed the City will work with the appropriate agencies to develop a design that is appropriate for the location and traffic levels expected.</p> </div>

Comment	Response
<p>Hennepin County design standards and county approval. Also, to get protected left turn movements for the E/W approaches the design would require a new signal cabinet and cabling, and new heads for the left turn phases. All of these additional costs would need to be covered by agreement between the city and the developer, and possibly the county.</p> <p><b>iv. Add an additional left turn lane with a minimum storage of 500 feet on westbound Red Circle Drive North at the approach to Shady Oak Road, thus providing this approach with dual lefts and a right turn lane. (Intersection 7)</b></p> <ul style="list-style-type: none"> <li>○ Again, this mitigation measure may be problematic as there may not be enough space here. Also, would they build more pavement or just convert the right turn lane to a right/left lane as all WB traffic must turn at this intersection?</li> <li>○ This mitigation measure would also likely result in signal system revisions and the need to move the mast arm pole out of the median.</li> <li>○ This measure may also induce traffic to turn left at this Red Circle North intersection even though it is a one way out and the left turn may result in lefts turning in. To obviate this possibility, the design would need to include median improvements to prohibit lefts from turning into Red Circle North.</li> </ul> <p><b>v. Signalize the south intersection of Shady Oak Road and Red Circle Drive South (Intersection 8)</b></p> <ul style="list-style-type: none"> <li>○ Placing a signal here would create very tight signal spacing (less than 400 feet) which is not ideal for signal timing along this corridor. This would also require a SJR and the county would want to carefully review any plans for new signals early on in the process.</li> <li>○ As before, this design would need to meet Hennepin County design standards and county approval. All of these additional costs would need to be covered by agreement between the city and the developer, and possibly the county.</li> <li>○ However, at this time, it would seem highly unlikely that the County will be open to allowing a signal to be installed at Red Circle Dr South and Shady Oak. The suggestion here is to revise the site circulation patterns to accommodate the additional traffic and direct traffic to the existing signalized intersection.</li> </ul> <p><b>vi. At Shady Oak Road and Red Circle Drive South, allow right turns from the outside northbound through lane into Red Circle Drive. Extend the existing right turn lane all the way to the TH 62 westbound ramps intersection. (Intersection 8)</b></p> <ul style="list-style-type: none"> <li>• Allowing a right turn from a through lane is a significant safety issue and generally not allowed. Our safety engineer would have to agree to this along with other design and operation staff. We would suggest instead building an additional right turn lane where the existing trail/sidewalk is today so you will have two through lanes and 2 right turn lanes.</li> <li>• Also, extending the existing right turn lane all the way to the TH 62 westbound ramps intersection would need more discussion because of safety concerns and would need to include MnDOT.</li> </ul> <p><i>Minnesota Statutes 505.03, 505.021, and 462.358, Plats and Surveys, allow up to 30 days for county review of preliminary plats abutting county roads.</i></p>	<p>5) Thank you for your comments pertaining to the mitigation necessary for Scenario 2. We recognize that more discussions will be needed regarding the proposed mitigation during planning and design of the mitigation measures if they are needed. The City of Minnetonka will monitor development as it occurs and determine if and/or when mitigation may be needed based on level of service "D". If mitigation is needed the City will work with the appropriate agencies to develop a design that is appropriate for the location and traffic levels expected.</p> <p>6) Thank you for your comments pertaining to the mitigation necessary for Scenario 2. We recognize that more discussions will be needed regarding the proposed mitigation during planning and design of the mitigation measures if they are needed. The City of Minnetonka will monitor development as it occurs and determine if and/or when mitigation may be needed based on level of service "D". If mitigation is needed the City will work with the appropriate agencies to develop a design that is appropriate for the location and traffic levels expected.</p> <p>7) Thank you for your comments pertaining to the mitigation necessary for Scenario 2. We recognize that more discussions will be needed regarding the proposed mitigation during planning and design of the mitigation measures if they are needed. The City of Minnetonka will monitor development as it occurs and determine if and/or when mitigation may be needed based on level of service "D". If mitigation is needed the City will work with the appropriate agencies to develop a design that is appropriate for the location and traffic levels expected.</p>

Comment	Response
<p style="text-align: center;"><span style="border: 1px solid black; padding: 2px 10px;">8</span></p> <p><b>vii. Reconfigure the Shady Oak Drive northbound approach at the TH 62 westbound ramps intersection to allow a third northbound through lane which drops into the right turn lane at Red Circle Drive. Shorten the inside left-turn lane so that only four lanes are needed under the TH 62 bridge. (Intersection 9)</b></p> <ul style="list-style-type: none"> <li>This mitigation design would create safety concerns at this interchange. Also, this signal is owned by MnDOT so they would have to be involved as well with any modifications here.</li> </ul> <p>We appreciate your consideration of Hennepin County comments at this time and look forward to your response. If you have any questions, please contact me at 612-348-5714/<a href="mailto:david.jaeger@hennepin.us">david.jaeger@hennepin.us</a> or Jason Gottfried, at 612-596-0394/<a href="mailto:jason.gottfried@hennepin.us">jason.gottfried@hennepin.us</a>.</p> <p>Thank you for your consideration,</p> <p>David Jaeger  David Jaeger  Environmental Specialist  Hennepin County</p> <p><i>Minnesota Statutes 505.03, 505.021, and 462.358, Plats and Surveys, allow up to 30 days for county review of preliminary plats abutting county roads.</i></p>	<p>8) Thank you for your comments pertaining to the mitigation necessary for Scenario 2. We recognize that more discussions will be needed regarding the proposed mitigation during planning and design of the mitigation measures if they are needed. The City of Minnetonka will monitor development as it occurs and determine if and/or when mitigation may be needed based on level of service "D". If mitigation is needed the City will work with the appropriate agencies to develop a design that is appropriate for the location and traffic levels expected.</p>