ENVIRONMENTAL ASSESSMENT WORKSHEET (EAW)

800 53rd Avenue NE
Redevelopment to High Density Residential
Columbia Heights, MN

Prepared For:

City of Columbia Heights, MN

Prepared by Loucks

May 23, 2025

Loucks Project No. 23226.A

CIVIL ENGINEERING | LANDSCAPE ARCHITECTURE | LAND SURVEYING
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Table of Contents

Tables

Figures

Appendices

Environmental Assessment Worksheet

This most recent Environmental Assessment Worksheet (EAW) form and guidance documents are available at the Environmental Quality Board's website at: https://www.eqb.state.mn.us/ The EAW form provides information about a project that may have the potential for significant environmental effects. Guidance documents provide additional detail and links to resources for completing the EAW form.

Cumulative potential effects can either be addressed under each applicable EAW Item or can be addressed collectively under EAW Item 21.

Note to reviewers: Comments must be submitted to the RGU during the 30-day comment period following notice of the EAW in the EQB Monitor. Comments should address the accuracy and completeness of information, potential impacts that warrant further investigation and the need for an EIS.

1. **Project title: 800 53rd Avenue NE – Redevelopment to High Density Residential**

2. **Proposer: Lincoln Avenue Communities**
   Contact person: Kyle Brasser
   Title: VP & Regional Project Partner
   Address: 401 Wilshire Blvd. 11th Floor
   City, State, ZIP: Santa Monica, CA 90401
   Phone: 612-351-3411
   Email: kbrasser@lincolnavenue.com

   Owner Representative: The Concord Group
   Contact Person: Tiffany Pierce Evans
   Title: Project Executive
   Address: 1000 North Water Street, Suite 1550
   City, State, ZIP: Milwaukee, WI 53202
   Phone: 608-344-1399
   Email:

3. **RGU:**
   Contact person: Andrew Boucher, City of Columbia Heights
   Title: City Planner
   Address: 3989 Central Avenue NE
   City, State, ZIP: Columbia Heights, MN 55421
   Phone: 651-430-8800
   Email: ABoucher@columbiaheightsmn.gov

4. **Reason for EAW Preparation:** (check one)

Required:	Discretionary:
__EIS Scoping	__ Citizen petition
X Mandatory EAW	__ RGU discretion
	__ Proposer initiated

   If EAW or EIS is mandatory give EQB rule category subpart number(s) and name(s):

   4410.4300 Subp. 19 – Residential Development

5. **Project Location:**
   - County: Anoka
   - City/Township: Columbia Heights
   - PLS Location (¼, ¼, Section, Township, Range):
     Part of the North 1/2 of the NW 1/4 of the NW 1/4, S26, T30, R24
   - Watershed (81 major watershed scale):

Mississippi Watershed Management Organization
- GPS Coordinates:
  45.063598, -93.250339
- Tax Parcel Number
  263024110020

At a minimum attach each of the following to the EAW:
- County map showing the general location of the project;
- U.S. Geological Survey 7.5 minute, 1:24,000 scale map indicating project boundaries (photocopy acceptable); and
- Site plans showing all significant project and natural features. Pre-construction site plan and post-construction site plan.
- List of data sources, models, and other resources (from the Item-by-Item Guidance: Climate Adaptation and Resilience or other) used for information about current Minnesota climate trends and how climate change is anticipated to affect the general location of the project during the life of the project (as detailed below in item 7. Climate Adaptation and Resilience).

  See Figures 1-3.

6. Project Description:

a. Provide the brief project summary to be published in the EQB Monitor, (approximately 50 words).

Lincoln Avenue Communities proposes to redevelop the former Medtronic office building and parking lot site. The proposed project includes three multi-story residential apartment buildings (439 units) with surface and underground parking; 58 townhome units; and 12,000 square feet of commercial space. The 12.5-acre site is located at 800 53rd Avenue NE.

b. Give a complete description of the proposed project and related new construction, including infrastructure needs. If the project is an expansion include a description of the existing facility. Emphasize: 1) construction, operation methods and features that will cause physical manipulation of the environment or will produce waste, 2) modifications to existing equipment or industrial processes, 3) significant demolition, removal or remodeling of existing structures, and 4) timing and duration of construction activities.

The project site is the former Medtronic office building and associated parking lot located at 800 53rd Avenue. Medtronic has ceased operations within the building which is now vacant. Lincoln Avenue Communities is proposing to redevelop the site into a high density residential area with some commercial space. The project consists of two six-story apartment buildings, each with 132 affordable residential units, and one five-story apartment building with 175 affordable/market rate units. The apartment buildings will have surface parking and underground parking. There are 58 residential townhome units consisting of one four-plex building (4 units), six five-plex buildings (30 units) and four six-plex buildings (24 units). A total of 439 residential units is proposed.

A portion of the five-story building is planned for commercial space. The 12,000-sf space is located on the street level adjacent to 53rd Avenue.

The project is proposed to be phased with phase 1 being the southerly six-story apartment building. Phase 2 will be the northerly six-story apartment building. Phase 3 will be the townhomes. Phase 4 will be five-story apartment/commercial building along 53rd Avenue.

Phasing of the development may vary depending upon the market needs.

The access to the project site is from 53rd Avenue NE. There are no proposed city streets within the project area. Internal access will be private drive lanes. There is no proposed connected access to the east or south. Two access points are shown to 53rd Avenue. The location of the access points closely match the two existing access points to 53rd Avenue from the existing parking lot. The Project will provide approximately 675 parking spaces; 250 stalls at grade and 425 underground parking spaces. Each of the townhome units will have two garage stalls and 2 driveway parking spaces.

The project will include the demolition of the existing office building and surface parking lot. Existing utilities, such as watermain, sanitary sewer, storm sewer, and small utilities such as electric lines, natural gas, and communication lines will be removed as necessary to accommodate the new project. All demolition materials will be removed from the site and either recycled or disposed of in a landfill. The demolition process is anticipated to last several months.

The Project will include the extension and installation of utilities to serve the site. Watermain will be extended from the existing watermain within 53rd Avenue to the south into the project site providing water service. The watermain will connect back to the watermain within 53rd Avenue providing a looped system through the site. As an option, the watermain could connect to the existing watermain in the far southwest corner of the site which currently serves the Parkside Village residential site. This would provide an additional looped connection. Sanitary sewer will be extended into the site from the existing sanitary sewer in the south portion of the site. It appears that all of the surrounding sanitary sewer lines flow to an existing lift station just off the southwest corner of the site. Stormwater management will be required for the development. Storm sewer will collect runoff from the site. The runoff will be treated per the city and watershed requirements. Other utilities such as electric, gas, and communication cables will also be installed.

Construction and installation will utilize typical methods such as site grading with earth moving equipment, excavation, and backfill of trenches for utility piping, building erection with typical equipment, and building materials, road construction with paving equipment and site restoration to establish vegetation cover. Dewatering may be necessary for utility pipeline installation. There are no other special or unique construction operations proposed. Utility construction for phase 1 is estimated to last several months, with the building construction to last one and a half to two years.

The current condition of the site is mostly impervious surface consisting of the existing office building and parking lot. There are several landscape trees planted around the building and several trees along the south side of the parking lot. There are no wetlands on the site.

Adjacent to the site to the west is Sullivan Lake. Sullivan Lake is classified as a Recreational Development Lake under the MN Department of Natural Resources (MnDNR) shoreland districts. The project site is also within the City's Shoreland Overlay District. A platted Park encompasses the lake and includes pedestrian trails, sport courts and a park shelter. No development is proposed within the Park property. To the north and east is commercial/retail area with Hwy 65 about one block away. To the south is multi-family townhomes.

c. Project magnitude:

Description	Number
Total project acreage	12.52
Linear project length	0
Number and type of residential units Apartment Units (Attached) - Townhome Units (Attached) -	 439 58
Residential building area (in square feet) Apartment Buildings Townhome Buildings	 73,150 70,470
Commercial building area (in square feet)	12,000
Industrial building area (in square feet)	0
Drive Aisles and Parking (in square feet)	150,210
53rd Avenue (in square feet)	27,235
Trails & Walks (in square feet)	15,600
Common Open/Green Space (in square feet)	212,306
Other uses – specify (in square feet)	0
Structure height(s) Apartment Buildings Townhome Buildings	 5-6 Stories 2 Stories

d. Explain the project purpose; if the project will be carried out by a governmental unit, explain the need for the project and identify its beneficiaries.

The purpose of the Project is to replace the existing vacant office building with new multi-family residential facilities. Medtronic has owned and operated an office building on this site since 1979. With the recent closure of the building the City realized a potential for re-development. The City has revised their Comprehensive Plan to guide this site as high density residential. The proposed project follows the City's guided use for re-development.

e. Are future stages of this development including development on any other property planned or likely to happen? _ Yes X No. If yes, briefly describe future stages, relationship to present project, timeline and plans for environmental review.

The entire 12.5-acre site is the subject of this EAW. The project is proposed to be phased with phase 1 being the southerly six-story apartment building. Phase 2 will be the northerly six-story apartment building. Phase 3 will be the townhomes. Phase 4 will be a five-story apartment/commercial building along 53rd Avenue. The timing of the phases will occur depending upon the market needs. Each phase will require separate site plan review and approval from the City.

There are no future stages of the project outside the site area.

f. Is this project a subsequent stage of an earlier project? _ Yes X No
If yes, briefly describe the past development, timeline and any past environmental review.

7. Climate Adaptation and Resilience:

a. Describe the climate trends in the general location of the project (see guidance: Climate Adaptation and Resilience) and how climate change is anticipated to affect that location during the life of the project.

Climatic conditions were evaluated to see the trends in temperature, precipitation, and cooling degree days for the Project site. The climate projections summarized below use Representative Concentration Pathways (RCP's) which are greenhouse gas concentration scenarios used by the Intergovernmental Panel on Climate Change. An RCP of 4.5 is an intermediate scenario in which emissions decline after peaking in 2040. An RCP of 8.5 is a worst-case scenario in which emissions continue to rise through the 21st Century.[1]

Temperature

According to the Minnesota Climate Explorer from MN DNR data, the historical average temperature in Anoka County from 1895 to 2024 is 43.34º F.[2] See Figure 4. The average annual temperature in Anoka County is projected to increase to 48.42º F from 2040 to 2059 under the RCP 4.5 (an intermediate emissions scenario). In 2080 to 2099, the average annual temperature in Anoka County is projected to further increase to 54.58° F under the RCP 8.5 (a worst-case emissions scenario). See Figure 5.

Urban Heat Island

Paved surfaces such as roads, parking lots and building roof structures absorb heat from the sun during the daytime and re-emit the heat back into the air throughout the nighttime. Dense areas of hard surface can significantly raise the surrounding air temperature. This is known as urban heat island effect. According to the Metropolitan Council's Extreme Heat Map Tool, the Project is located in an area of high heat vulnerability.[3] The current high heat vulnerability is largely due to the existing large office building and surface parking lot. The proposed project increases paved surfaces, approximately 1.6 acres. The impacts due to urban heat island affects are anticipated to be minimal.

Precipitation

According to the Minnesota Climate Explorer from MN DNR data, the historical average precipitation in Anoka County from 1895 to 2024 is 29.34 inches per year. See Figure 6. The average annual precipitation in Anoka County is projected to increase to 32.79 inches per year from 2040 to 2059 under the RCP 4.5 (an intermediate emissions scenario). In 2080 to 2099, the average annual precipitation in Anoka County is projected to further increase to 35.87 inches per year under the RCP 8.5 (a worst-case emissions scenario). See Figure 7.

Flood Risk

In many places, climate change is contributing to the frequency and intensity of rainfall events and associated flooding. The Metropolitan Council has a Climate Vulnerability Assessment tool which maps areas of localized flooding. See Figure 8. The map shows a flood risk on the existing site mainly within the existing stormwater pond area located in the southeast portion of the site. However, the FEMA flood map shows the site to be outside the 100 year flood zone. See Figure 9. Flood risks from Sullivan Lake are minimal.

Flooding impacts within the proposed development can be mitigated by stormwater management and building elevations.

Cooling Degree Days

Degree days are based on the assumption that when the outside temperature is 65º F, heating

[1] Source: Climate Explorer Metadata. https://www.dnr.state.mn.us/climate/climate-explorer-metadata.html
[2] Source: Minnesota Climate Explorer, Minnesota Department of Natural Resources. https://arcgis.dnr.state.mn.us/climateexplorer/main/historical
[3] Source: Extreme Heat Map Tool, Metropolitan Council. https://metrocouncil.org/Communities/Planning/Local-Planning-Assistance/CVA/Extreme-Heat.aspx

and cooling is not needed to be comfortable. The value of degree days is calculated by taking the average daily temperature and subtracting 65. For example, if the average daily temperature is 70º degrees, there have been 5 cooling degree days.[4] Per the Heat Vulnerability in Minnesota, the number of cooling degree days for Anoka County in 2019 was 379. The projected cooling degree days for 2050, an RCP of 8.5 is 598.[5] See figure 10.

b. For each Resource Category in table 1 below: Describe how the project's proposed activities and how the project's design will interact with those climate trends. Describe proposed adaptations to address the project effects identified.

Table 1: Resource Category

Resource Category	Climate Considerations	Project Information	
		Climate Change Risks and Vulnerabilities	Adaptations
Project Design	Aspects of the building architecture/materials choices and site design that may negatively affect urban heat island conditions in the area considering changing climate zones, temperature trends, and potential for extended heat waves.	In the coming decades, the Project site is anticipated to experience: Increased annual temperatures, Increased annual precipitation and more frequent heavy rainfall events, and increased freeze/thaw cycles	Buildings could be constructed with roof-top ready infrastructure for solar power generation. Building materials could be energy efficient. Building roofs could include green areas. Buildings and parking areas could include electric charging stations. Proposed landscape areas and green space will reduce runoff and mitigate heat island effect lowering the average temperature.
Land Use	Any critical facilities (i.e. facilities necessary for public healthand safety, those storing hazardous materials, or those with housing occupants who may be insufficiently mobile) that are proposed in floodplain areas and other areas identified as at risk for localized flooding; describethe risk potential considering changing precipitation and event	Increased precipitation may cause increased flood risk.	Proposed buildings are located within a low-risk flood area. Buildings will be set at an elevation above the 100-year high water levels of adjacent ponds. Design of the stormwater management features will be completed to reduce the risk of flooding.

[4] Source: "What Are Heating and Cooling Degree Days" National Weather Service https://www.weather.gov/key/climate_heat_cool

[5] Source: Heat Vulnerability in Minnesota, Minnesota Department of Health and the University of Minnesota https://maps.umn.edu/climatehealthtool/heat_app/

	intensity.		Infiltration/Filtration ponds will be used to improve water quality and reduce runoff volumes.
Water Resources	Current Minnesota climate trends and anticipated climate change in the general location of the project may influence water resources.	Water resources in the Project area may become warmer, more polluted, and change in volume due to increased temperatures and runoff. There may be more evaporation and water available when it rains leading to an increase in flood potential. It is projected that there will be more severe storm events with higher rain amounts.	Additional green spaces will promote lower runoff temperatures. Native plantings in landscaped areas will be used to absorb runoff. Stormwater management features will be designed to promote water quality for decreased pollution. Stormwater BMP's will be designed for the 100-year storm event per regulations from the City and the watershed district. Higher rainfall events may occur. The ponds have overflows which outlet to sedimentation basins prior to flowing offsite.
Contamination/ Hazardous Materials/Wastes	Current Minnesota climate trends and anticipated climate change in the general location of the project may influence the potential effects of generation/use/storage of hazardous waste and materials.	There is no anticipated risk of climate change affecting bio-hazardous storage and waste with this Project.	Stormwater management includes catch basins and storm sewer which collects runoff from the site. These features include grates, ponding areas, outlet control structures which provide pre-treatment, skimming for floatables and oils, and dead storage volumes for settleable solids.
Fish, wildlife, plant communities, and sensitive ecological resources (rare features)	Current Minnesota climate trends and anticipated climate change in the general location of the project may influence the local species and suitable habitat.	Suitable habitat for species may become unsuitable due to land use changes, increased temperature and increased runoff.	The current site provides limited suitable habitat. Dedicated green space and landscaping with native plantings can provide suitable habitat.

			Proposed stormwater features and BMPs' will provide suitable habitat for species.

8. **Cover types:** Estimate the acreage of the site with each of the following cover types before and afterdevelopment:

Figure 12 and Table 2 summarize cover types within the Project area.

Table 2: Project Cover Types

Cover Types	Before(acres)	After (acres)
Wetlands and shallow lakes (<2 meters deep)	0	0
Deep lakes (>2 meters deep)	0	0
Wooded/forest	0	0
Rivers/streams	0	0
Brush/Grassland	0	0
Cropland	0	0
Livestock rangeland/pastureland	0	0
Lawn/landscaping	5.08	3.44
Green infrastructure TOTAL (from table below*)	0	1.0
Impervious surface	7.32	7.92
Stormwater Pond (wet sedimentation basin)	0.12	0.16
Other (describe)		
TOTAL	12.52	12.52

Green Infrastructure*	Before (acreage)	After (acreage)
Constructed infiltration systems (infiltration basins/infiltration trenches/rainwater gardens/bioretention areas without underdrains/swales with impermeable check dams)	0	1.0
Constructed tree trenches and tree boxes	0	0
Constructed wetlands	0	0
Constructed green roofs	0	0
Constructed permeable pavements	0	0
Other: Sand Filter Biofiltration Irrigation Reuse	 0 0 0	 0 0 0
TOTAL*	0	1.0

Trees	Percent	Number
Percent tree canopy removed or number of mature trees removed during development		64
Total required replacement trees		74
Number of new trees provided		112*

*Final number of trees will be per the final landscape plan.

9. **Permits and approvals required:** List all known local, state and federal permits, approvals, certifications and financial assistance for the project. Include modifications of any existing permits, governmental review of plans and all direct and indirect forms of public financial assistance including bond guarantees, Tax Increment Financing and infrastructure. All final decisions are prohibiteduntil all appropriate environmental reviews have been completed. See Minnesota Rules, Chapter 4410.3100.

Unit of Government	Type of Application	Status
US Army Corps of Engineers	Wetland Delineation Report	Completed
MN Pollution Control Agency (MPCA)	Stormwater Pollution Prevention Plan (SWPPP)	To be Obtained
	NPDES Construction Stormwater General Permit	To be Obtained
	Sanitary Sewer Extension Permit	To be Obtained
MN Department of Health	Watermain Extension Permit	To be Obtained
MN Department of Natural Resources (MnDNR)	Temporary Groundwater Appropriation Permit for Construction Dewatering	Obtain if Needed
	MN Natural Heritage Database Review	Completed
MN Historic Preservation Office	Archaeological & Historical Sites Review	Completed
Mississippi Watershed Management Organization	Project Review	Obtain if Needed
City of Columbia Heights	EAW Review and Approval	Pending
	Rezoning	To be Obtained
	Planned Unit Development/Conditional Use	To be Obtained
	Site Plan Approval	To be Obtained
	Preliminary/Final Plat Approval	To be Obtained
	Construction and Building Permits	To be Obtained

Cumulative potential effects may be considered and addressed in response to individual EAW Item Nos. 10-20, or the RGU can address all cumulative potential effects in response to EAW Item No. 22. If addressing cumulative effect under individual items, make sure to include information requested in EAW Item No. 21.

10. **Land use:**
    a. Describe:
        i. Existing land use of the site as well as areas adjacent to and near the site, including parksand open space, cemeteries, trails, prime or unique farmlands.

The project site is bordered by 53rd Avenue NE along the north side, Sullivan Lake along the west side, commercial/retail area to the east and southeast, and multi-family townhomes to the southwest. Highway 65 is about one block to the east of the site. The current site consists of a vacant office building and surface parking lot. There are landscaped strips which surround the parking lot. The south end of the site is open green space with intermittent trees and a trail across the site from the east side to the existing park area at Sullivan Lake.

Sullivan Lake is adjacent to the site along the west side with Sullivan Lake Park located to the southwest. To the north across 53rd Avenue is commercial/retail area and is part of the City of Fridley. To the east is existing commercial/retail area along Highway 65.

There are no other unique features, cemeteries or prime farmlands near the site.

ii. Plans. Describe planned land use as identified in comprehensive plan (if available) and anyother applicable plan for land use, water, or resources management by a local, regional, state, or federal agency.

The City of Columbia Heights' 2040 Comprehensive Plan guides the land use of the project site as Commercial use. The Comprehensive Plan was amended in February 2024 to guide the future land use to TOD: Transit Oriented Development. This will allow high density residential use along with limited commercial/retail use. Other design elements for the plan amendment includes street designs that incorporate stormwater management features; integrated public/private spaces; focus on Sullivan Lake and expansion of Sullivan Lake Park as existing community assets; and to improve Sullivan Lake water quality.

The proposed Project is consistent with the future land use identified in the amended 2040 Comprehensive Plan.

iii. Zoning, including special districts or overlays such as shoreland, floodplain, wild and scenicrivers, critical area, agricultural preserves, etc.

The City's zoning map shows the Project site is currently within the GB: General Business District. See Figure 12.

Land west of the Project site is zoned PO: Public and Open Space District which encompasses Sullivan Lake and the associated park. Across 53rd Avenue NE to the north is the City of Fridley. This area is zoned C-3: General Shopping and is planned for commercial use in the City of Fridley's 2040 Comprehensive Plan. Property to the east is zoned GB: General Business District and to the south it is zoned R-3: Residential District.

The site will require rezoning to the TOD: Transit Oriented Development with a Shoreland Overlay District.

The entire site is within a Shoreland Management zoning district which surrounds Sullivan Lake, a MnDNR public water 80P (DNR#02008000). Sullivan Lake is classified as a Recreational Development (RD) lake and is subject to the city's shoreland management ordinance. The shoreland ordinance allows up to a maximum 25% impervious surface coverage.

iv. If any critical facilities (i.e. facilities necessary for public health and safety, those storing hazardous materials, or those with housing occupants who may be insufficiently mobile) are proposed in floodplain areas and other areas identified as at risk for localized flooding,describe the risk potential considering changing precipitation and

event intensity.

There are no critical facilities proposed on the project site. There are no floodplain areas within the project site.

b. Discuss the project's compatibility with nearby land uses, zoning, and plans listed in Item 10a above, concentrating on implications for environmental effects.

The existing office building was consistent with the current zoning and consistent with the surrounding commercial, retail, and multi-family uses. The future use of the project area has been planned for high density residential use per the amended 2040 Comprehensive Plan. Its compatibility with surrounding uses can be managed through setbacks and landscaping, as mandated through city ordinances. The existing trail across the site at the south end will provide a buffer from the site to the multi-family townhomes to the south.

The previous use of the site with an office building and large parking lot has set a commercial use precedence on this site. The large, hard-surfaced areas provided little green space for stormwater treatment. In fact, much of the surface parking lot runoff drains directly to Sullivan Lake with little to no treatment. The large contiguous parking lot promotes heat absorption contributing to heat island effects. A multi-family development provides intermittent green spaces and landscaping. Green areas will provide some pre-treatment of stormwater runoff and will reduce heat absorption.

Other environmental effects include some loss of greenspace and intermittent trees along the southerly portion of the site. The re-development of the site will include a small increase of hard surface but will also provide current stormwater treatment facilities in conformance with current City and Watershed requirements.

Other effects may include the loss of habitat for animals which live in the green area. These may include a variety of small mammals such as squirrels and a variety of songbirds. This is discussed further in Item 14 of this EAW.

c. Identify measures incorporated into the proposed project to mitigate any potential incompatibility as discussed in item 10b above and any risk potential.

The Project will incorporate landscaping to replace any removed trees. Setbacks and buffer areas will be included as required. The setbacks are as follows:

Building Setback	Parking Setback
Along Sullivan Lake – 20 feet	Along Sullivan Lake – 20 feet
From the South Property Line – 50 feet	From the South Property Line – 15 feet
From the East Property Line – 30 feet	From the East Property Line – 20 feet
Along 53rd Avenue NE – 0 feet	Along 53rd Avenue NE – 0 feet

The proposed uses are compatible with existing and future land use as permitted. A rezoning will be submitted to the City for approval.

The Project will be sensitive to existing green spaces. Reducing impervious surfaces is beneficial to both preserving existing green spaces and in reducing improvement costs if not needed. Stormwater management practices will be guided by the City's and the Watershed's stormwater requirements. Additional stormwater requirements will be guided by the MPCA's NPDES stormwater permit requirements including the following requirements:

- The first one inch of runoff from any new impervious surface is required to be infiltrated or filtrated on site.
- Stormwater runoff rates are required to be limited to be equal to or less than the existing conditions.
- Water quality treatment methods will be included to reduce pollutant loads such as phosphorus, nitrogen, and total suspended solids in runoff.

11. Geology, soils and topography/landforms:

a. Geology – Describe the geology underlying the project area and identify and map any susceptible geologic features such as sinkholes, shallow limestone formations, unconfined/shallow aquifers, or karst conditions. Discuss any limitations of these features for the project and any effects the project could have on these features. Identify any project designs or mitigation measures to address effects to geologic features.

According to the Minnesota Geological Survey's Geologic Atlas of Anoka County, MN[6], the Project site lies above Paleozoic sedimentary rock formation. Series C-27, Plate 2 (Bedrock Geology) denotes the bedrock to be of the St. Peter Sandstone Formation. It is composed of light gray, medium to fine grained quartzose sandstone. Series C-27, Plate 3 (Surficial Geology) shows the materials present above the bedrock up to the ground surface. Materials are noted as a complex intermixed loam to sandy loam, unsorted sediment, pebbly with cobbles and boulders. Series C-27, Plate 6 (Bedrock Depth) shows the depth to the bedrock to be 101-150 feet.

According to the MnDNR Karst Feature Inventory[7] there are no known karst features or sinkholes within the Project area or within the vicinity of the Project area. See Figure 13. The nearest karst feature is a sinkhole located near Anderson Hall on the West Bank of the Minneapolis Campus of the University of Minnesota – about 6.3 miles to the south.

There is no other known geological site hazards located within the Project site.

It is not anticipated that the proposed Project will have an environmental impact on the geological features of the site.

b. Soils and topography – Describe the soils on the site, giving NRCS (SCS) classifications and descriptions, including limitations of soils. Describe topography, any special site conditions relating to erosion potential, soil stability or other soils limitations, such as steep slopes, and highly permeable soils. Provide estimated volume and acreage of soil excavation and/or grading. Discuss impacts from project activities (distinguish between construction and operational activities) related to soils and topography. Identify measures during and after project construction to address soil limitations including stabilization, soil corrections or other measures. Erosion/sedimentation control related to stormwater runoff should be addressed in response to Item 12.b.ii.

NOTE: For silica sand projects, the EAW must include a hydrogeologic investigation assessing the potential groundwater and surface water effects and geologic conditions that could create an increased risk of potentially significant effects on groundwater and surface

[6] Source: MN Geological Survey Atlas of Anoka County
https://www.dnr.state.mn.us/waters/groundwater_section/mapping/county-geo-atlas.html
[7] Source: MNDNR Kart Feature Inventory
https://arcgis.dnr.state.mn.us/portal/apps/webappviewer/index.html?id=9df792d8f86546f2aafc98b3e31adb62

water. Descriptions of water resources and potential effects from the project in EAW Item 12 must be consistent with thegeology, soils and topography/landforms and potential effects described in EAW Item 11.

Soil borings were completed by Braun Intertec, dated April 21, 2024, and preliminary boring logs were prepared. See Appendix A. Thirty soil borings were taken up to a depth of 25 feet, with three of them taken at a depth of 40 feet. The borings show a subsurface profile of topsoil (silty sand, clayey sand, lean clay, organic clay) at various depths up to two feet in green areas, fill material (poorly graded sand, silty sand, clayey sand, lean clay) at various depths from about 2-14 feet, glacial deposits (poorly graded sand, silty sand, clayey sand, lean clay, silt) from depth of 4-40 feet. The clay type soils will likely require moisture conditioning to achieve adequate compaction.

The project site was previously used as an office building and parking lot. The boring logs show some areas where fill has been placed under the pavement. Although this does not change the underlying soil profile, it does indicate that the site soils have been corrected or disturbed. Fill material may require excavation and re-compaction. The underlying soils will generally be suitable for reuse as engineered fill and should support building foundations as long as subgrade soils are corrected to remove topsoil, organic material, and fill material. Soil testing will be performed during the site grading operations to ensure soil bearing requirements.

The NRCS classifications for the site shows one soil type. See Figure 14. The soil type, UuB (Urban land-Udorthents) indicates that the soils on the site have been previously disturbed and may have been excavated and/or filled. As aforementioned, the majority of the site has been disturbed so the soil survey may not reflect what is currently on the site. Table 3 lists the soils on site:

Table 3: NRCS Soil Survey

Soil Name and Type	Soil ID #	Area (ac)	% of Site
Urban land-Udorthents (Cut & Fill)	UuB	12.52	100

Urban land-Udorthents are soils which have been disturbed by grading operations and may have been removed, replaced by imported materials, and compacted mainly because of development. The parent material suggests it was variable loamy material.
Limitations of the soils include susceptibility to disturbance and strength loss during construction activities. Partial subcutting and replacement with coarser materials are recommended beneath footings and floor slabs if existing soil is not adequate. Loose soils may require removal and re-compaction or replacement depending upon the actual soil condition encountered.

Topography of the site ranges from an elevation of 900 in the northwest corner of the site to 886, the lowest point, in the southcentral portion of the site. See Figure 15. Drainage is generally from north and east towards the southwest corner. The low point of the site is drained by storm sewer towards Sullivan Lake.

Site grading will be limited to only the portions of improved area including the building sites, parking areas and access roads. The grading operations will be accomplished with conventional earth moving equipment such as scrapers, dozers, backhoes and compactors. The disturbed area is estimated to 11.9 acres with about 0.6 acres to remain undeveloped. The amount of excavation is estimated to be 50,000 cubic yards.

Mass grading will include the preparation of a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP will be specific to the grading operations of the proposed site and will follow the requirements of the NPDES Construction Stormwater Permit. Silt fence, ditch checks, rock entrances, and wood fiber blankets will be used to control erosion and runoff during the grading process and to establish vegetation cover. Grading adjacent to the Park area will be protected by buffer zones to preserve adjacent vegetation.

The project site is within one mile of three impaired waters: Sullivan Lake, East Moore Lake, and Highland Lake to the east. All land disturbance activities within one mile from impaired waters must immediately initiate BMPs and stabilization methods of exposed soil areas. Complete stabilization procedures shall be within seven days after construction activity is completed. Temporary sedimentation basins shall be installed which drain as area of five acres or more of disturbed soil.

12. Water resources:

a. Describe surface water and groundwater features on or near the site in a.i. and a.ii. below.

i. Surface water - lakes, streams, wetlands, intermittent channels, and county/judicial ditches. Include any special designations such as public waters, shoreland classification and floodway/floodplain, trout stream/lake, wildlife lakes, migratory waterfowl feeding/resting lake, and outstanding resource value water. Include the presence of aquatic invasive species and the water quality impairments or special designations listed on the current MPCA 303d Impaired Waters List that are within 1 mile of the project. Include DNR Public Waters Inventory number(s), if any.

There are no wetlands on the site. A wetland delineation report was prepared by Kjolhaug Environmental Services (KES) on 5/16/2025. See Appendix B. A Joint Application Form for Activities Affecting Water Resources in Minnesota was submitted to the City to request concurrence with a Site Assessment and No-Loss/Incidental determination under the Minnesota Wetland Conservation Act. The application was also sent to the Army Corps of Engineers (ACOE) for their review and approval of the delineation report.

There are three impaired waters within one mile of the Project. See Figure 16. Minnesota's 2024 Impaired Waters List[8] shows Sullivan Lake (denoted by MnDNR as Sandy Lake), a DNR public water (02008000), as impaired and is adjacent to the west side of the project site. Highland Lake, a DNR public water (020007900) is impaired and is one mile to the east. East Moore Lake, a DNR public water (02007500) is impaired and is about three quarters of a mile to the north.

A body of water is considered impaired if it fails to meet one or more water quality standards. In 2002, Sullivan Lake and East Moore Lake were added to the impaired waters list for high nutrient levels which promote algae growth. In 2004 Highland Lake was added to the impaired waters list for high nutrient levels.

Sullivan Lake is also classified as a Recreational Development Lake under the MnDNR's Shoreland Ordinance[9]. The shoreland overlay district extends 1,000 feet beyond the ordinary high water (OHW) elevation. The entire project site lies within this shoreland district. The allowable density within the shoreland district…..

[8] Source: Minnesota's Impaired Waters List https://www.pca.state.mn.us/air-water-land-climate/minnesotas-impaired-waters-list

[9] Source: MnDNR's Shoreland Ordinance https://www.dnr.state.mn.us/waters/watermgmt_section/shoreland/regulations.html

ii. Groundwater – aquifers, springs, seeps. Include: 1) depth to groundwater; 2) if project is within a MDH wellhead protection area; 3) identification of any onsite and/or nearby wells,including unique numbers and well logs if available. If there are no wells known on site or nearby, explain the methodology used to determine this.

According to the MNDNR Groundwater Atlas of Anoka County[10], groundwater lies within the elevations of 880-900. This relates to a depth of groundwater 0-10 feet from the ground surface. Groundwater generally flows from east to west towards the Mississippi River. There are six main bedrock aquifers within the County. The uppermost bedrock aquifer is the St. Peter Aquifer within the St. Peter Sandstone formation. Below that is the Prairie du Chein aquifer within the Shakopee formation. The Jordan aquifer is next which lies within the Jordan Sandstone formation. The deepest aquifer is the Mt. Simon aquifer which lies within the Mt. Simon Sandstone formation. Two other aquifers; the Upper Twin City and the Wonewoc, which lie between the Jordan and the Mt. Simon, do not appear below the project site per the Atlas.

The City of Columbia Heights does not have any municipal wells which draw water for its water system. Water is purchased from the Minneapolis Water Utility, which draws from the Mississippi River at its Fridley intake. Therefore, no water is drawn from the underlying aquifers. There are no new wells proposed with this project. All proposed buildings will connect to the City water system.

The project site is within the City of New Brighton's Drinking Water Supply Management Area (DWSMA) and is within a Wellhead Protection Area (WHPA); classified as moderate vulnerability. [11] See Figure 17. The site is not within the Emergency Response Area. The cities of Columbia Heights and New Brighton along with the Mississippi Watershed Management Organization (MWMO) should review and approve any infiltration practices proposed as part of stormwater management.

The Minnesota Well Index[12] shows one existing well on site and several nearby private wells. See Figure 18. The on-site existing well, Unique well #577237, is not a water type well, but is a pit for the building's elevator. It will be abandoned per the MN Department of Health (MDH) requirements upon the start of construction. Table 4 lists the existing wells within 1/2 mile of the site.

Table 4: List of Existing Wells

Well Unique #	Use Type	Distance from Site-ft	Status	Depth-ft	Static Water Level-ft
206684	Domestic	2360	Active	82	46
206690	Domestic	1870	Active	145	75
206691	Domestic	1845	Active	120	100
206692	Domestic	2180	Active	106	64
577237	Elevator	On-site	Active	27	--

The preliminary soil borings completed by Braun Intertec show groundwater in 13 of the

[10] Source: MNDNR County Atlas Series C-27, Part B. Groundwater Atlas of Anoka County, MN. mapping/cga/c27_anoka/anokareport.pdf

[11] Source: https://www.newbrightonmn.gov/286/Wellhead-Protection

[12] Source: Minnesota Well Index https://mnwellindex.web.health.state.mn.us/

borings. The average depth was 16 feet corresponding to an elevation range of 866 to 879. There were two temporary piezometers installed at borings ST-4 and ST-29. The measured water table ranged from 875.6 to 878.9. The remaining borings did not encounter groundwater. The areas of lean clay may indicate a layered soil profile that is conducive for encountering perched water conditions. Groundwater may be encountered at varying elevations throughout the site.

According to the MnDNR Karst Feature Inventory there are no known springs within the Project area or within the vicinity of the Project area. See Figure 13. The nearest spring is located near the Mississippi River – about 1.6 miles to the east.

b. Describe effects from project activities on water resources and measures to minimize or mitigate the effects in Item b.i. through Item b.iv. below.

i. Wastewater – For each of the following, describe the sources, quantities and composition of all sanitary, municipal/domestic and industrial wastewater produced or treated at the site.

1) If the wastewater discharge is to a publicly owned treatment facility, identify any pretreatment measures and the ability of the facility to handle the added water and waste loadings, including any effects on, or required expansion of, municipal wastewater infrastructure.

The Project will generate wastewater typical of residential and commercial use. The estimated flow is based on the Sewer Availability Charge (SAC) rates as published by the Metropolitan Council. One SAC unit equals 274 gallons per day (GPD) of sewer flow. The commercial use is based upon the Retail-Mixed business type with a parameter of 1,900 SF of space equaling one SAC unit. Th residential use is one SAC unit for each apartment and townhome unit. The total estimated amount of sewage generated by the project is 138,726 GPD (0.139 MGD). The proposed projects' wastewater will be collected by onsite sanitary sewer piping and will connect to the existing City sanitary sewer system. Connection points to the city sewer system are located on the south side of the site.

All of the City's wastewater is conveyed to and treated by the Metro Treatment Plant in St. Paul, MN. The plant has a current capacity of 314 million gallons per day (MGD) with a current average flow of 180 MGD. The treatment plant has the capacity to treat the estimated proposed 0.139 MGD generated by the proposed project.

2) If the wastewater discharge is to a subsurface sewage treatment system (SSTS), describe the system used, the design flow, and suitability of site conditions for such a system. If septic systems are part of the project, describe the availability of septage disposal options within the region to handle the ongoing amounts generated as a result of the project. Consider the effects of current Minnesota climate trends and anticipated changes in rainfall frequency, intensity and amount with this discussion.

Question 2 is N/A.

3) If the wastewater discharge is to surface water, identify the wastewater treatment methods and identify discharge points and proposed effluent limitations to mitigate impacts. Discuss any effects to surface or groundwater from wastewater discharges, taking into consideration how current Minnesota climate trends and

anticipated climate change in the general location of the project may influence the effects.

Question 3 is N/A.

ii. Stormwater – Describe changes in surface hydrology resulting from change of land cover. Describe the routes and receiving water bodies for runoff from the project site (major downstream water bodies as well as the immediate receiving waters). Discuss environmental effects from stormwater discharges on receiving waters post construction including how the project will affect runoff volume, discharge rate and change in pollutants. Consider the effects of current Minnesota climate trends and anticipated changes in rainfall frequency, intensity and amount with this discussion. For projects requiring NPDES/SDS Construction Stormwater permit coverage, state the total number of acres that will be disturbed by the project and describe the stormwater pollution prevention plan (SWPPP), including specific best management practices to address soil erosion and sedimentation during and after project construction. Discuss permanent stormwater management plans, including methods of achieving volume reduction to restore or maintain the natural hydrology of the site using green infrastructure practices or other stormwater management practices. Identify any receiving waters that have construction-related water impairments or are classified as special as defined in the Construction Stormwater permit. Describe additional requirements for special and/or impaired waters.

Stormwater management is required through the City and the Mississippi Watershed Management Organization's (MWMO) regulations, and as required by the MPCA's National Pollutant Discharge Elimination System (NPDES) Permit. Detention/Retention ponds, infiltration/filtration ponds, underground infiltration/filtration storage vaults and other site BMP's will be designed to collect stormwater runoff and provide rate control, volume control and water quality treatment. All treatment systems will be on-site. Stormwater BMPs are required to provide the following:

- Rate control. No net increase for the 1-Year, 10-Year, 100-Year, and 10 Day snowmelt storm events. Restrict the runoff offsite so that the developed rates are equal to or less than the existing runoff rates.
- Volume Control. Capture the 1.1 inch runoff volume from the impervious surfaces and allow it to infiltrate or filtrate within 48 hours. Filtration typically consists of filtering the one-inch volume through sand or a sand/compost soil medium. The filtered water is collected by a drain tile system and discharged through the outlet pipe.
- Water Quality. Runoff shall have no increase in total suspended solids (TSS) or total phosphorus (TP) load.

The majority of the stormwater runoff from the existing office building and parking lot is collected in storm sewer and appears to drain directly to Sullivan Lake with little to no treatment. The far northerly portion of the site drains to the storm sewer system in 53rd Avenue NE with little to no treatment. There is a small stormwater pond at the southwest corner of the parking lot which collects only a small portion of the site's runoff. This small pond does not appear to meet current stormwater standards and it outlets to Sullivan Lake. All of the existing surface is hard surface with the exception of the southern portion of the site which is green space.

Sullivan Lake is an impaired lake due to high nutrient loads, which promote algae growth.

It is desired by the City and the MWMO to provide opportunity for creative and effective stormwater management for Sullivan Lake. The proposed project will provide that opportunity. All of the stormwater runoff from the site will be collected by on-site storm sewer and routed to treatment systems with best management practices (BMP's). Runoff rates will be reduced, water quality will be improved and water abstraction will be incorporated as much as possible. Direct runoff to Sullivan Lake will be eliminated with the exception of some backyard green areas. The far south end where the existing trail crosses the site will remain undisturbed.

Eliminating the existing untreated runoff and capturing and treating all of the proposed runoff will greatly improve the quality of Lake Sullivan.

The estimated existing runoff rates from the site under the existing conditions for a 1-year, 10-year, 100-year, and the 100 year 10-day storm events are shown below:

	1 Year Storm	10 Year Storm	100 Year Storm	100 Year 10-Day Storm
Offsite Runoff	17 cfs	44 cfs	90 cfs	15 cfs

These values would be the maximum rate allowed for the proposed conditions. The final hydrology calculations will be modeled based upon the final design so that the proposed runoff rates do not exceed the existing rates.

The site may have areas where the groundwater is within three feet of the surface. The MN Stormwater Manual requires that there be at least three feet of separation between the groundwater and the bottom of infiltration basins. If adequate separation is not available, filtration is recommended.

The site is within the Wellhead Protection Area (WHPA). Figure 17 shows the WHPA areas around the Project site. The groundwater in these areas is vulnerable to contamination, which means that there does not appear to be sufficient geological protection between the land surface and the Jordan aquifer to impede vertical infiltration of contaminants into the aquifer. Management efforts include restrictions of stormwater infiltration in these areas. The MPCA, the City of New Brighton, and the MWMO have recommendations for infiltrating stormwater within the WHPA. These recommendations will be followed with the final design of the stormwater management system.

As required by the NPDES permit, a Stormwater Pollution Prevention Plan (SWPPP) is required. The SWPPP will describe the nature of the construction activity; address the potential for sediment and pollutant discharges from the site; identify personnel to oversee implementation; identify the permanent stormwater management system and identify inspection and maintenance practices. The Erosion Control Plan will implement best management practices (BMPs) such as minimizing disturbed areas, perimeter silt fence, redundant silt fence along wetlands, temporary sediment ponds, erosion blankets and re-establish vegetation within seven days of grading completion. The Project is not anticipated to negatively affect downstream water bodies.

As described above, Sullivan Lake is impaired and lies downstream of the project site. In 2002, Sullivan Lake was added to the state's impaired list for high nutrient levels. The Project will slightly increase impervious surfaces which may lead to an increase in salt (containing chloride) used for winter maintenance over frozen surfaces. Chloride collects in ponding areas and can reach toxic levels for wildlife and plants. The property management

should encourage winter maintenance staff to participate in the Smart Salting Training offered through the MPCA. The training offers information and resources for chloride application on roads and sidewalks. A reduction in salt use promotes cleaner stormwater runoff and can offer cost savings.

iii. Water appropriation – Describe if the project proposes to appropriate surface or groundwater (including dewatering). Describe the source, quantity, duration, use and purpose of the water use and if a DNR water appropriation permit is required. Describe anywell abandonment. If connecting to an existing municipal water supply, identify the wells tobe used as a water source and any effects on, or required expansion of, municipal water infrastructure. Discuss environmental effects from water appropriation, including an assessment of the water resources available for appropriation. Discuss how the proposed water use is resilient in the event of changes in total precipitation, large precipitation events, drought, increased temperatures, variable surface water flows and elevations, and longer growing seasons. Identify any measures to avoid, minimize, or mitigate environmental effects from the water appropriation. Describe contingency plans should theappropriation volume increase beyond infrastructure capacity or water supply for the project diminish in quantity or quality, such as reuse of water, connections with another water source, or emergency connections.

Groundwater was encountered in 13 of the soil borings and was generally 12-20 feet deep corresponding to elevations of 866 to 879. The soil borings indicate layered soils that are conducive for perched water. Therefore, groundwater levels may fluctuate. Temporary dewatering may be necessary for construction excavation. The Contractor will be required to obtain a DNR Water Appropriations Permit if necessary.

There is one well located on the site. The on-site existing well, Unique well #577237, is not a water type well, but is a pit for the building's elevator. See Figure 18. The well will be abandoned per MDH requirements upon the start of Project construction. There are no new proposed wells associated with the hospital Project.

The Project includes an extension and connection to the existing city watermain system. Connection will be to the existing 10-inch watermain in 53rd Avenue at the easterly entrance and a connection to the existing 8-inch watermain in 53rd Avenue at the westerly entrance. An 8-inch watermain is proposed throughout the site to provide service to the proposed buildings and provide a looped system.

The City reviewed the water system in and around the project site on December 19, 2024 in anticipation of the site redevelopment. An analysis by the City's consultant Bolton & Menk summarizes that a watermain loop connection from 53rd Ave. south to the existing watermain in Parkside Lane "will provide significantly increased fire flow and will also provide additional reliability to the water system in the area." It is possible that this loop can be combined with the projects watermain with a connection to the existing watermain offsite in the southwest corner in the Parkside Village development.

The estimated water usage for the proposed project is 138,726 GPD. The project proposes to loop the watermain within the project site with two connections to the existing watermain in 53rd Avenue. An additional 8 inch connection to the existing watermain offsite to the southwest will provide adequate water supply and fire flow.

iv. Surface Waters

a) Wetlands – Describe any anticipated physical effects or alterations to wetland features such as draining, filling, permanent inundation, dredging and vegetative removal. Discuss direct and indirect environmental effects from physical modification of wetlands, including the anticipated effects that any proposed wetland alterations may have to the host watershed, taking into consideration how current Minnesota climate trends and anticipated climate change in the general location of the Project may influence the effects. Identify measures to avoid (e.g., available alternatives that were considered), minimize, or mitigate environmental effects to wetlands. Discuss whether any required compensatory wetland mitigation for unavoidable wetland impacts will occur in the same minor or major watershed and identify those probable locations.

There are no wetlands on the site. A wetland delineation report was prepared by Kjolhaug Environmental Services (KES) on 5/16/2025. See Appendix B. A Joint Application Form for Activities Affecting Water Resources in Minnesota was submitted to the City to request concurrence with a Site Assessment and No-Loss/Incidental determination under the Minnesota Wetland Conservation Act. The application was also sent to the Army Corps of Engineers (ACOE) for their review and approval of the delineation report.

No wetlands are proposed to be filled or impacted.

b) Other surface waters – Describe any anticipated physical effects or alterations to surface water features (lakes, streams, ponds, intermittent channels, county/judicial ditches) such as draining, filling, permanent inundation, dredging, diking, stream diversion, impoundment, aquatic plant removal and riparian alteration. Discuss direct and indirect environmental effects from physical modification of water features, taking into consideration how current Minnesota climate trends and anticipated climate change in the general location of the project may influence the effects. Identify measures to avoid, minimize, or mitigate environmental effects to surface water features, including in-water Best Management Practices that are proposed to avoid or minimize turbidity/sedimentation while physically altering the water features. Discuss how the project will change the number or type of watercraft on any water body, including current and projected watercraft usage.

There are no other surface water features within the project site. It is anticipated that the proposed project will not affect surrounding water features either by physical alterations or additional recreational use. The proposed stormwater management and treatment plan will provide increased water quality and reduced nutrient loads of the runoff into Sullivan Lake.

13. Contamination/Hazardous Materials/Wastes:

a. Pre-project site conditions – Describe existing contamination or potential environmental hazards on or in close proximity to the project site such as soil or ground water contamination, abandoned dumps, closed landfills, existing or abandoned storage tanks, and hazardous liquid or gas pipelines. Discuss any potential environmental effects from pre-project site conditions that would be caused or exacerbated by project construction and operation. Identify measures to avoid, minimize or mitigate adverse effects from existing contamination or potential environmental hazards. Include development of a Contingency Plan or Response Action Plan.

The existing office building and parking lot will be demolished and removed prior to any re-development. All demolition activities must comply with state and federal regulations that

require inspection of the structure for hazardous materials. Regulated asbestos-containing materials (RACM) must be abated prior to demolition activities. A "Notification of Asbestos Related Work" must be submitted to the MDH and a "Notification of Intent to Perform a Demolition" must be submitted to the MPCA ten working days prior to start of demolition. Lead paint must be encapsulated or removed and properly disposed of off-site at an appropriate disposal facility. The project proposer should consider recycling as much of the structural materials as possible to reduce the volume of material disposed of in a landfill. All debris, including regulated and hazardous materials shall be removed by licensed haulers and disposed of in licensed landfills.

What's in My Neighborhood

MPCA's "What's in My Neighborhood" interactive website[13] provides environmental information for communities. It shows locations of contaminated properties, and facilities with air, water and other environmental permits and registrations. Figure 19 shows these sites within one-quarter mile of the project site.

Dollar Tree is a MPCA Construction Stormwater Permit #C00060468 obtained by 2C Development in May 2021. It is still active. No activity is observable currently, but it is assumed that some site work was performed.

S.P.127-319-006, S.P.113-118-004 (53rd Ave. Construction) is an MPCA Construction Stormwater Permit #C00067294 obtained by the City of Fridley in July 2023. It is still active.

Several hazardous waste generator sites were indicated on properties adjacent to the site. Four of the sites are currently listed as active with minimal to small generated quantities. The list below shows the sites:

Site ID	Name	Activities	MPCA ID	Status
19869	Medtronic, Inc.	Hazardous Waste, Very Small Quantity Generator	MND982636995	Active
		Industrial Stormwater	MNRNE39YF	Inactive
28781	North Star Beverages	Hazardous Waste	MND086571601	Inactive
		Petroleum Leak & Remediation	LS0015047	Inactive
37465	Target Store T2200	Hazardous Waste, Small Quantity Generator	MND120016480	Active
116903	St. Timothy's Lutheran Church	Underground Tank	TS0013988	Inactive
143219	Petco Store 1646	Hazardous Waste, Very Small Quantity Generator	MNS000193102	Active
229078	Columbia Heights Dentistry	Hazardous Waste, Minimal Quantity Generator	MNS000328696	Active

The North Star Beverage site was a tank leak that was discovered in 2002. The leak was addressed and the site investigation was closed in 2006.

The St. Timothy's Lutheran Church was an underground storage tank circa 1990. It appears that the tank has been removed.

[13] Source: MCPA's "What's in My Neighborhood" https://www.pca.state.mn.us/about-mpca/whats-in-my-neighborhood

b. Project related generation/storage of solid wastes – Describe solid wastes generated/stored during construction and/or operation of the project. Indicate method of disposal. Discuss potential environmental effects from solid waste handling, storage and disposal. Identify measures to avoid, minimize or mitigate adverse effects from the generation/storage of solidwaste including source reduction and recycling.

During the construction phase solid waste will be generated by the demolition of the existing building and parking lot. Prior to building demolition, it should be inspected for any remnant hazardous materials. Inspection must comply with MPCA and MDH requirements. A "Notification of Intent to Perform a Demolition" must be submitted to the MPCA ten working days prior to start of demolition. Lead paint must be encapsulated and properly disposed of off-site at an appropriate disposal site. All debris, including regulated and hazardous materials, shall be removed by licensed haulers and disposed of in licensed landfills.

Waste products from construction activities will occur. Waste materials such as wood, metal scraps, packaging, cardboard, paper, and other wastes would either be recycled or disposed of in accordance with city and state regulations.

Solid waste generated by the proposed project will be typical of municipal solid waste for commercial/retail use and residential use. Solid waste generated from project is estimated to be 600 tons/year. Solid waste is collected and hauled away by local, licensed garbage haulers. The commercial and residential tenants will be encouraged to participate in recycling certain solid waste items.

c. Project related use/storage of hazardous materials – Describe chemicals/hazardous materials used/stored during construction and/or operation of the project including method of storage. Indicate the number, location and size of any new above or below ground tanks to store petroleum or other materials. Indicate the number, location, size and age of existing tanks on the property that the project will use. Discuss potential environmental effects from accidental spill or release of hazardous materials. Identify measures to avoid, minimize or mitigate adverseeffects from the use/storage of chemicals/hazardous materials including source reduction and recycling. Include development of a spill prevention plan.

During construction, hazardous materials such as fuels, paints, solvents and other specific construction materials will be on site and stored and handled in conformance with state and federal regulations to prevent accidental spill or release of hazardous materials. General Contractors will be responsible for proper management of hazardous materials during construction and will be required to develop a spill prevention plan.

Toxic or hazardous materials present after construction will be consistent with commercial and residential uses and may include pesticides and herbicides. The potential for contamination is low. No above ground or underground storage tanks used for chemicals, petroleum or other hazardous materials is proposed with this project.

d. Project related generation/storage of hazardous wastes – Describe hazardous wastes generated/stored during construction and/or operation of the project. Indicate method of disposal. Discuss potential environmental effects from hazardous waste handling, storage, anddisposal. Identify measures to avoid, minimize or mitigate adverse effects from the generation/storage of hazardous waste including source reduction and recycling.

Outside of the materials described above, the Project is not anticipated to generate or require storage of additional hazardous wastes during construction or operation of the Project.

14. Fish, wildlife, plant communities, and sensitive ecological resources (rare features):

a. Describe fish and wildlife resources as well as habitats and vegetation on or near the site.

The project site contains very little habitat for wildlife and plant communities since the site is nearly all impervious surface consisting of the existing office building and parking lot. The far south side of the project site is open green space with intermittent trees and may provide nesting, foraging, and/or travel habitat for a variety of urban wildlife species, including birds, mice, squirrels, rabbits, etc. The project site contains no lakes or other water features so there is no habitat for fish or other aquatic animals.

The Park area surrounding Sullivan Lake contains open space, wetland plantings, and wooded areas which provide some habitat. The west side of the project borders the Park. The proposed site plan shows backyard areas against the Park property. No impact to the neighboring property is proposed with this project. Property surrounding the site to the north, east, and south is developed commercial and multi-family residential. These areas provide minimal habitat for wildlife.

b. Describe rare features such as state-listed (endangered, threatened or special concern) species, native plant communities, Minnesota Biological Survey Sites of Biodiversity Significance, andother sensitive ecological resources on or within close proximity to the site. Provide the license agreement number (LA-_____) and/or correspondence number (MCE _____) from which the data were obtained and attach the Natural Heritage Review letter from the DNR. Indicate if any additional habitat or species survey work has been conducted within the site and describe the results.

A formal Natural Heritage Information System (NHIS) request was originally submitted to the MN DNR through the Minnesota Conservation explorer (MCE) system on April 10, 2025. See Appendix C.

According to the issued letter/s:

- No ecologically significant areas (e.g., MN Sites of Biodiversity Significance, Native Plant Communities, Calcareous Fens, DNR Old Growth Stands, MN Prairie Conservation Plan, Important Bird Areas, and Lakes of Biological Significance) are documented in the vicinity of the Project.
- No state-listed endangered or threatened species are documented in the vicinity of the Project.

Federally-Listed Species:

A review of the United State Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) tool was conducted on April 10, 2025, to identify federally listed species, as well as those species proposed for federal listing, and candidates for federal listing with the potential to occur within the Project area. The species list provided by the tool is provided in Appendix D, and identified species are summarized below. The USFWS project code is 2025-0081694.

- Tricolored Bat *(Perimyotis subflavus*; proposed endangered) – The IPaC tool identifies the tricolored bat as potentially being within the vicinity of the project. The tricolored bat is Minnesota's smallest bat weighing only about as much as a nickel. Little is known about habitat preferences in Minnesota during the summer months and locations of summer colonies are unknown. Tricolored bats have primarily been found in the southeastern portion of the state. During winter, this species has been observed hibernating in caves and

mines as far north as St. Louis County, MN. Although there are many threats to the species, the predominant threat by far is white-nose syndrome. If this disease had not emerged, it is unlikely the northern long-eared bat would be experiencing such a dramatic population decline. Even so, other sources of mortality include those associated with development including habitat loss.

Tree removal within the Project area is limited to the south end of the site where intermittent tress are located. The far south side where the existing trail is located will remain undeveloped. Additionally, The MN DNR NHIS letter did not identify any bat records (known occurrences of tricolored bat, maternity roost trees, or hibernacula) within the Project area. Therefore, impact to this species is not anticipated.

- Whooping Crane (*Grus americana*; non-essential experimental population) – The whooping crane breeds, migrates, winters and forages in a variety of habitats, including coastal marshes and estuaries, inland marshes, lakes, open ponds, shallow bays, salt marsh and sand or tidal flats, upland swales, wet meadows and rivers, pastures and agricultural fields.

  The loss of wetlands to cropland conversion, urbanization, roads and powerlines, as well as wind farms, has a significant negative impact to the migratory corridor used by whooping cranes. Furthermore, decreases in river flows have degraded riverine migration habitat for this species and development is also encroaching on salt marsh habitat that is used by whooping cranes in the winter.
  The project area does not include wetlands, lakes, pastures, and open fields. Therefore, impact to this species is not anticipated.

- Salamander Mussel (*Simpsonaias ambigua*; proposed endangered) – The salamander mussel's habitat is limited to rivers and streams. IPaC's identifier is likely due to the site's proximity to Sullivan Lake. Implementation of the Stormwater Pollution Prevention Plan (SWPPP) will meet local, state, and federal regulations with regards to site runoff and water quality standards thereby avoiding indirect impacts to downstream resources/species including Sullivan Lake. Runoff rate control and runoff volume abstraction requirements will reduce runoff ultimately leaving the site. No impact to this species is anticipated.

- Monarch Butterfly (*Danaus Plexippus*; proposed threatened) – The Monarch Butterfly is a migratory species. North American migratory monarchs are divided into eastern and western populations. The Rocky Mountains generally divide these two populations, limiting their contact. However, the two populations are not completely isolated from each other and still occasionally interbreed. There are also non-migratory monarchs that remain year-round at the southern end of their breeding range in North America, including in parts of Florida, the Gulf Coast and California.

  Monarch habitat can include any field, roadside area, open area, wet area or urban garden, with the caveat that milkweed and other flowering plants are needed support the species throughout their life cycle. Adult monarchs feed on the nectar of many flowers during breeding and migration, but they lay eggs on milkweed plants as that is the only food the caterpillars can eat (https://www.fws.gov/species/monarch-danaus-plexippus). Common milkweed was observed as a non-dominant species in hayfield/grassland areas of the site. Because the monarch butterfly is proposed as threatened but is not yet listed, potential impacts to the species may need to be reassessed when a listing status is finalized by the FWS.

  The lack of prairie vegetation and milkweed on the project site hinders the presence of

monarchs. The use of native seed mixes to revegetate those areas of the site that will be graded and subsequently utilized as open space will create habitat that would be beneficial to this species. No impact to this species is anticipated.

- Rusty Patched Bumble Bee (*Bombus affinis*; endangered) – The rusty patched bumble bee (RPBB) has been observed in a variety of habitats, including prairies, woodlands, marshes, agricultural landscapes and residential parks and gardens. The rusty patched bumble bee requires areas that support sufficient food (foraging habitat), including nectar and pollen from diverse and abundant flowers (generally found in grasslands, as well as palustrine wetlands), as well as undisturbed nesting sites (grasslands, woodlands/shrublands and their edges) that are in proximity to those floral resources. These bees also require overwintering sites (woodlands) for hibernating queens. Rusty patched bumble bee habitat can be divided conceptually into nesting and wintering, as well as foraging habitat types, based on the relative timing of pollen and nectar availability. The locations of pollen and nectar sources for the rusty patched bumble bee may vary throughout the growing season (https://www.fws.gov/species/rusty-patched-bumble-bee-bombus-affinis).

  The Project area is located within the High Potential Zone (HPZ) for the RPBB, and the Project site overlaps with an area of proposed critical habitat.

  The use of native seed mixes to revegetate those areas of the site that will be graded and subsequently utilized as open space will create habitat (specifically foraging and nesting habitat) that would be beneficial to this species. No impact to this species is anticipated.

c. Discuss how the identified fish, wildlife, plant communities, rare features and ecosystems may be affected by the project including how current Minnesota climate trends and anticipated climate change in the general location of the project may influence the effects. Include a discussion on introduction and spread of invasive species from the project construction and operation. Separately discuss effects to known threatened and endangered species.

No ecologically significant areas (e.g., MN Sites of Biodiversity Significance, Native Plant Communities, Calcareous Fens, DNR Old Growth Stands, MN Prairie Conservation Plan, Important Bird Areas, and Lakes of Biological Significance) are documented in the vicinity of the Project. There are no known threatened or endangered species within the Project area.

Potential Impacts to Federally-Listed Species:

- Tricolored Bat – Tree removal within the Project area may result in a loss of potential suitable summer habitat for this species. Tree removal within the Project area is limited to a portion of the trees located in the southern part of the site.

Climate change poses significant threats to the tricolored bat by impacting its habitat, food sources, and overall survival. Changes in temperature and precipitation patterns can affect the availability of suitable roosting and foraging habitat, as well as the abundance and distribution of insects, which are the tricolored bat's primary food source.

- Whooping Crane – The Project area disturbance footprint is limited to former agricultural and commercial (greenhouse) areas of the site. Except for a very small, isolated wetland along the northwest site boundary and a small area of wet meadow wetland along the south site boundary both of which will be impacted for road construction, all other open water and wet meadow wetlands (freshwater marshes) and their adjacent upland will be avoided. Therefore, impact to this species is not anticipated.

Whooping cranes are dependent on freshwater marshes and floodplains habitats which will become highly vulnerable to drought, changes in precipitation patterns and salinization from sea level rise under climate change. (https://climateadaptationexplorer.org/species/birds/235)

- Salamander Mussel – The Project area lacks suitable habitat (streams/rivers) for these mussel (freshwater clam) species.

  The implementation of the Stormwater Pollution Prevention Plan (SWPPP) will meet local, state, and federal regulations with regards to site runoff and water quality standards thereby avoiding indirect impacts to downstream resources/species. Runoff rate control and runoff volume abstraction requirements will reduce runoff ultimately leaving the site.

  Freshwater mussels may be negatively affected by increasing water temperatures, decreasing river flows, drying habitat, and the increasing severity and variability of flooding events and drought as a result of the warming climate and shifting patterns of precipitation.

- Monarch Butterfly – Suitable habitat for the monarch butterfly is limited to the small landscaped green areas of the site and in the south green area. These lack an abundance or diversity of milkweed and other flowering species.

  The use of native seed mixes to revegetate those areas of the site that will be graded and subsequently utilized as open space will create habitat that would be beneficial to this species. Because the monarch butterfly is proposed as threatened but is not yet listed, potential impacts to the species may need to be reassessed when a listing status is finalized by the FWS.

  All butterflies, including monarchs, are highly sensitive to weather and climate as they depend on environmental cues (temperature in particular) to trigger reproduction, migration, and hibernation. Monarch dependence on milkweed alone as a host plant is a further vulnerability, particularly as milkweed abundance is declining throughout the monarch range. Monarch butterflies also face a decline in their overwinter habitat, and the effects of an increasing frequency of extreme weather events such as drought and severe storms, and extremes in hot and cold temperatures.

- Rusty Patched Bumble Bee – The site lacks flowering native vegetation. The proposed project has a low potential for providing RPBB foraging and nesting suitable habitat. Land disturbed by the proposed Project does not provide suitable overwintering habitat.

  The use of native seed mixes to revegetate those areas of the site that will be graded and subsequently utilized as open space will create habitat (specifically foraging and nesting habitat) that would be beneficial to this species.

  Climate change has the potential to affect RPBB in the following ways:

  - **Warming temperatures**: Bumble bees are sensitive to warming temperatures and have evolved in cooler climates.
  - **Precipitation extremes**: Increased precipitation can lead to flooding and other disturbances.
  - **False springs**: Bees may be woken up early but then killed by lower temperatures later.
  - **Drought**: Droughts can reduce the availability of food and water for bumble bees.
  - **Early snow melts and late frost**: These events can disrupt the timing of flower blooms and bee emergence.

Invasive Species

Invasive plant species are a major cause of biodiversity loss and are considered biological pollutants by the DNR. Invasive species can be transported by construction equipment, landscaping equipment, and by other methods of debris removal.

Best management practices (BMPs) should be implemented during construction to prevent or minimize the spread or introduction of invasive or noxious species outside of the Project grading limits.

The use of silt fencing during construction will contain exposed soils that may have a non-native/invasive seedbank. Re-seeding and establishment of disturbed areas with appropriate erosion control, turf, or native seed mixes will stabilize soils and promote the development of non-invasive and/or native plant communities, which may further prevent the introduction of invasive species in the future.

d. Identify measures that will be taken to avoid, minimize, or mitigate the adverse effects to fish, wildlife, plant communities, ecosystems, and sensitive ecological resources.

Federal listed species:

- Tricolored Bat: Coordination with USFWS prior to tree clearing is recommended if tree clearing cannot occur between November 1 – March 31. If tree removal during the bat inactive season is not feasible, tree removal during the bat pup rearing season (June 1 to August 15) would be avoided.
- Whooping Crane: Impacts are not anticipated.
- Salamander Mussel: Impacts are not anticipated.
- Monarch Butterfly: The use of Milkweed and other nectar-producing plants species may be used to promote pollinator friendly habitat within the landscaped areas of the Project. Additional mitigation measures could include minimizing mowing during active season, keep some areas unmowed, and incorporate native seed mixes (BWSR or MnDOT seed mixes) into landscape plans.
- Rusty Patch Bumblebee: The use of native and flowering plants species may be used to promote pollinator friendly habitat within the landscaped areas of the Project. Additional mitigation measures could include minimizing mowing during active season; conduct necessary mowing and vegetation disturbance within foraging areas prior to flowering and maintain these mowed areas throughout the growing season; avoid use of insecticides, fungicides, and herbicides to the extent practicable; and incorporate native seed mixes (BWSR or MnDOT seed mixes) into landscape plans.

Invasive Species

Some general methods are listed below:

- Clean construction equipment to remove visible plant remnants, seeds, and dirt when leaving the site.
- Apply certified herbicides to destroy the weeds prior to removal from the site.
- If weeds and soil are excavated, they should be hauled to a certified waste disposal site.
- Replace area with weed-free seeding to establish non-invasive vegetation.

Other Sensitive Ecological Resources

No impacts are anticipated to sensitive ecological resources within the project area. The landscaping plan can incorporate native plant species and seed mixes to promote diverse ecological resources and suitable habitat areas.

15. **Historic properties:**
    Describe any historic structures, archeological sites, and/or traditional cultural properties on or inclose proximity to the site. Include: 1) historic designations, 2) known artifact areas, and 3) architectural features. Attach letter received from the State Historic Preservation Office (SHPO). Discuss any anticipated effects to historic properties during Project construction and operation. Identify measures that will be taken to avoid, minimize, or mitigate adverse effects to historic properties.

An EAW database search for historic properties was requested from the State Historical Preservation Office (SHPO). A response stated that the results of the search found no previously documented archaeological sites within the project area. See Appendix E. The on-line search from the SHPO and the Office of the State Archaeologist (OSA) map viewer shows no archaeological sites in the Project area. See Figure 20.

16. **Visual:**
    Describe any scenic views or vistas on or near the project site. Describe any project related visual effects such as vapor plumes or glare from intense lights. Discuss the potential visual effects fromthe project. Identify any measures to avoid, minimize, or mitigate visual effects.

Development of the site will change the visual landscape from a 3-story office building and large parking lot to several 6-story apartment buildings, subsequent parking lots and multi-family townhome buildings. The taller buildings fit fairly well within the commercial/retail area surrounding the site to the north and east. The Townhomes around the west and south side of the project is consistent with the existing multi-family residential units around Sullivan Lake. The Project site will be lit at night with street and parking area lights. The number of lights can be limited, but lighting must meet minimum safety standards.

It is assumed that exterior lighting will be LED type fixtures due to their efficiency and longevity. However, these types of lights can emit blue light which can be harmful to birds and insects. The MN DNR recommends following the Minnesota Department of Transportation approved products for luminaires which limit the uplight rating to zero and a nominal color temperature below 2700k. The Proposer intends to integrate MnDOT recommended products to the extent possible, conscious of the change in nighttime light with the Project.

To offset visual impacts landscaping will be introduced throughout the site, especially along the west and south sides to buffer and provide screening to the Park area and the existing residential area.

There are no scenic views or vistas on or near the Project Area. There are no anticipated adverse visual effects from the proposed Project.

17. **Air:**
    a. Stationary source emissions – Describe the type, sources, quantities and compositions of any emissions from stationary sources such as boilers or exhaust stacks. Include any hazardous air pollutants, criteria pollutants. Discuss effects to air quality including any sensitive receptors, human health or applicable regulatory criteria. Include a discussion of any methods used to assess the project's effect on air quality and the results of that assessment. Identify pollution control equipment and other measures that will be taken to avoid, minimize, or mitigate adverse effectsfrom stationary source emissions.

    It is anticipated that the new apartment buildings and the townhome units will use natural gas or electric for heating. Other systems include cooling systems which uses pressurized

refrigerant. These systems result in direct or indirect sources of stationary greenhouse gases (GHG) and criteria pollutants.

- GHG include carbon dioxide (CO2), Methane (CH4) and Nitrous Oxide (N2O). These gases can be converted to carbon dioxide (CO2) which is attributed to climate change. Criteria pollutants include ozone (O3), particulate matter (PM), carbon monoxide (CO), lead (Pb), Sulfur dioxide (SO2) and nitrogen oxides (NOx). GHG and criteria pollutant emissions can occur from: construction equipment burning diesel fuel and gasoline; natural gas used for heating and refrigerant used for cooling systems. Consumption of these fuels is also anticipated for typical residential use including water heaters, clothes dryers, stoves and ovens.

  Although design of the apartment and townhome building's mechanical equipment has not yet been completed, it is expected that the new buildings will utilize new technologies, and more efficient equipment and appliances to reduce energy consumption. Improved energy efficient lighting, windows and doors, and other current building codes will ultimately provide more energy efficiency to minimize and reduce impacts to air quality.

b. Vehicle emissions – Describe the effect of the project's traffic generation on air emissions. Discuss the project's vehicle-related emissions effect on air quality. Identify measures (e.g. traffic operational improvements, diesel idling minimization plan) that will be taken to minimizeor mitigate vehicle-related emissions.

Previous office use generated carbon monoxide (CO) from commuter vehicle traffic from the office building. This occurred several times a day, typically during workday morning and after work times. Vehicle use of the parking lot was minimal during weekends. No adverse effects was evident from the previous use.

During the construction phase construction equipment and vehicles will create temporary exhaust emissions during the site grading, utility installation and building construction phases.

The proposed Project will generate CO due to resident vehicles. It is expected that there will be a continuation of the commuter traffic morning and evening. However, an increase in resident vehicle use during the day and weekends is anticipated. The Project will not require an indirect source permit.

c. Dust and odors – Describe sources, characteristics, duration, quantities, and intensity of dust andodors generated during project construction and operation. (Fugitive dust may be discussed under item 17a). Discuss the effect of dust and odors in the vicinity of the project including nearby sensitive receptors and quality of life. Identify measures that will be taken to minimize ormitigate the effects of dust and odors.

Construction vehicles will generate dust during grading operations if the site conditions are dry. Methods to mitigate fugitive dust include intermittent application of water over exposed soils, covering of materials during transporting and re-establishing turf cover as soon as construction is completed. The residential use of the apartment and townhome buildings is not anticipated to involve processes that would generate dust.

Construction refueling and periodic maintenance will produce odors, but it will be intermittent and brief. The project is not expected to produce odors unusual for residential use. Odor mediation shall be consistent with applicable state regulations.

Sensitive receptors in the vicinity include the existing park just west of the site, and the

residential areas to the south.

18. Greenhouse Gas (GHG) Emissions/Carbon Footprint:

a. GHG Quantification: For all proposed projects, provide quantification and discussion of project GHG emissions. Include additional rows in the tables as necessary to provide project-specific emission sources. Describe the methods used to quantify emissions. If calculation methods are not readily available to quantify GHG emissions for a source, describe the process used to cometo that conclusion and any GHG emission sources not included in the total calculation.

GHG's are comprised mainly of carbon dioxide (CO2), Methane (CH4), and Nitrous Oxide (N2O). When these gases are released into the atmosphere, they can absorb infrared radiation released from the earth's surface rather than escaping into space. The radiation then becomes trapped resulting in a warming of the atmosphere. This is known as the greenhouse effect. The greenhouse effect can lead to unnatural warming of the earth's climate known as climate change.[14]

GHG's occur from several sources. Scope 1 Direct Emissions occur from sources that are located and controlled by users within the Project area. The apartment and townhome buildings are considered direct emissions. Scope 1 Direct Emissions include both stationary sources and mobile sources. Stationary sources include facilities that burn fuels on-site such as natural gas, fuel oil and diesel fuel for heating systems, boilers, water heaters, air-conditioning, cooling towers, backup generators, and many types of commercial/residential appliances such as stoves, ovens, clothes dryers, etc. It includes air conditioning leakage during use and maintenance and recharging methods. Mobile sources include resident vehicle travel. Although temporary, construction equipment necessary for the construction of the project is included. Items such as cars, trucks, portable generators and heaters, etc. that burn diesel fuel, gasoline, natural and propane gas are included. The burning and consumption of these fuels generates GHG's. The conversion of land use is also considered Scope 1 Emissions. Vegetative land types (forests, grasslands, etc.) are carbon sinks; they sequester carbon. Conversion of vegetative land types to impervious surfaces decreases the carbon sequestration of the Project area.

Scope 2 Indirect Emissions are emissions from energy produced by others yet consumed by the operations and equipment within the Project area. For example, the electricity used by the development is produced by a third-party electric company in which their operation consumes fuels and generates GHG's. Purchased electricity is a large source of indirect GHG emissions, however it can also be a significant opportunity to reduce those emissions.

Scope 3 Indirect Sources are consequences of the activities from the operations located within the Project area. These would include employee travel to and from the commercial building. Other sources include solid waste production. Solid waste produced by the development users must be collected, hauled and disposed of by third party entities. Delivery of supplies require third party suppliers. Delivery of commercial goods and services is becoming more and more common as third-party delivery companies deliver commercial goods every day.

The following estimates the GHG emissions from the proposed development. The quantities are estimated using the USEPA's Simplified GHG Emissions Calculator (SGEC), September, 2024[15] and are included in Appendix E. The SGEC uses various parameters such as building square

[14] Source: Summarized from U.S. EPA, Overview of Greenhouse Gases https://www.epa.gov/ghgemissions/overview-greenhouse-gases

[15] Source: https://www.epa.gov/climateleadership/simplified-ghg-emissions-calculator

footage, number and type of vehicles, etc. to estimate natural gas and electricity usage for building types. GHG emissions is quantified as the CO2 equivalent (CO2e) for CO2, CH4 and N2O. Table 5 shows the results.

Table 5: Green House Gas (GHG) Emissions

Temporary Construction Emissions

Scope	Type of Emission	Emission Sub-type	Project-related CO2e Emissions (mt)	Calculation method(s)
Scope 1	Combustion: Construction	Mobile – Off Road	1,175	SGEC
Scope 1	Combustion: Construction	Mobile – On Road	910	SGEC
TOTAL			2,085	

Operational Emissions

Scope	Type of Emission	Emission Sub-type	Project-related CO2e Emissions (mt/year)	Calculation method(s)
Scope 1	Land-Use Sink	Area	1	Per EQB Guidance (June 2024), Data from EPA
Scope 1	Combustion: Operational	Stationary Equipment	1,148	SGEC
Scope 1	Leakage/ Disposal	AC Equipment Use	5,133	SGEC
Scope 2	Indirect Consumed	Purchased Electricity	2,200	SGEC
Scope 3	Indirect Combustion	Off-Site Waste Management	383	SGEC
TOTAL			8,865	

b. GHG Assessment

i. Describe any mitigation considered to reduce the project's GHG emissions.

Project construction and ultimate uses should provide the opportunity to implement sustainability measures. These may include:

- Energy efficient appliances, equipment and lighting
- Energy efficient building materials
- Implement practices to recycle and compost waste materials
- Building infrastructure designs to accommodate solar and wind for power generation
- Provide electric vehicle ready charging stations
- Landscaping designs to absorb water, provide shade and reduce urban heat islands.

Implementing strategies can be evaluated on a case-by-case basis based upon code requirements, feasibility, availability of materials, schedule, and user considerations.

ii. Describe and quantify reductions from selected mitigation, if proposed to reduce the project's GHG emissions. Explain why the selected mitigation was preferred.

The potential mitigation listed in Item 18 part i above was selected to comply with best management practices for new construction and reduce GHG emissions where practical during operations.

iii. Quantify the proposed projects predicted net lifetime GHG emissions (total tons/# of years) and how those predicted emissions may affect achievement of the Minnesota Next Generation Energy Act goals and/or other more stringent state or local GHG reduction goals.

The expected lifespan of the Project is 50+ years. From the values in section *a.* above the total estimated construction and operational GHG emissions based upon the CO2e is:
(2,085 mt * 3) + (8,864 mt * 50) = 449,455 mt.

The Next Generation Energy Act (NGEA) requires the state of Minnesota to reduce greenhouse gas emissions within the state by 80% between 2005 and 2050, while supporting clean energy, energy efficiency, and supplementing other renewable energy standards in Minnesota.[16] The MPCA's biennial 2023 GHG emissions in Minnesota report noted the three largest sources of GHG emissions: Transportation, Agriculture/Forestry/Land Use and Electricity Generation. These three sources contribute approximately 70% of the total GHG emissions. The next three sources include Industrial, Commercial, and Residential – contributing approximately 29% of the total GHG emissions. Waste products completes the remaining 1%.

Reducing the three biggest sources provides the greatest opportunity to reduce GHG emissions. In the transportation sector, the Project has good potential to reduce vehicle use by the close proximity Central Avenue. Central Avenue has a frequent transit service along its corridor. 53rd Avenue also has a designated bus route with stops adjacent to the project site. Guiding this site towards Transit-Oriented Development land use focuses on higher density residential, commercial, and retail uses with close proximity to transit services. Redevelopment will also provide opportunity for pedestrian and bicycle links to the surrounding properties and other parts of the city.

For the electricity generation source, provide energy efficient appliances and lighting and provide cleaner fuel options with electric charging stations. It can also promote alternative energy sources with solar power generation.

19. Noise:
Describe sources, characteristics, duration, quantities, and intensity of noise generated during project construction and operation. Discuss the effect of noise in the vicinity of the project including 1) existing noise levels/sources in the area, 2) nearby sensitive receptors, 3) conformance to state noise standards, and 4) quality of life. Identify measures that will be taken to minimize or mitigatethe effects of noise.

A Noise Study was conducted for the Project and is included in Appendix F.

The proposed project layout with primary on-site noise sources and sensitive adjacent land uses is shown in Exhibit 1.

[16] Source: https://www.pca.state.mn.us/air-water-land-climate/climate-change-initiatives

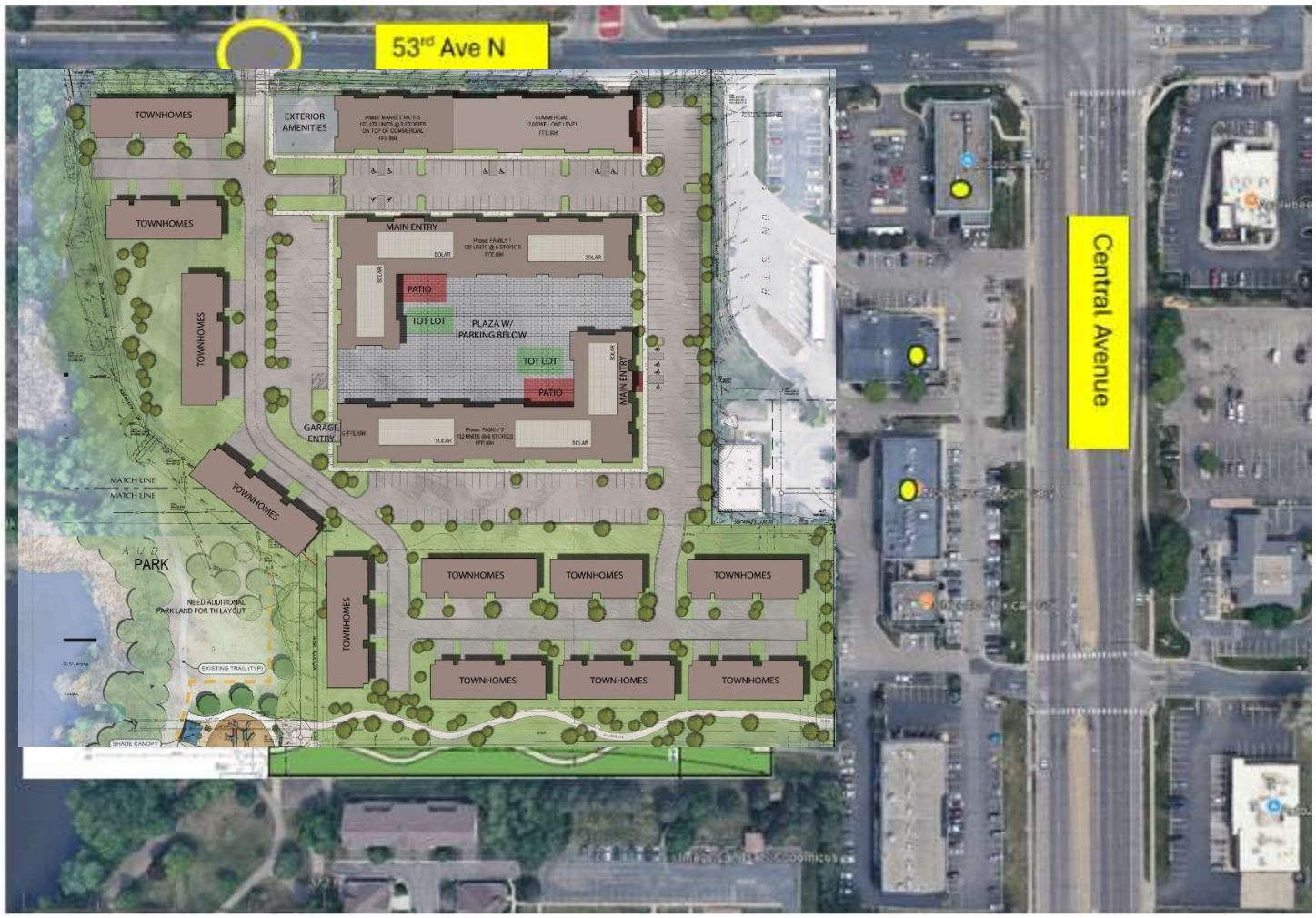


EXHIBIT 1 PROJECT LAYOUT AND ADJACENT NOISE SOURCES

Existing Noise

Traffic on Central Avenue (Minnesota TH 65) east of the project but separated by a row of commercial buildings and higher terrain, is the primary traffic noise source impacting the project. In Minnesota, the nighttime (10 pm to 7 am) noise level standard for traffic is 55 decibels. The model predicts a traffic noise level of 56 decibels at the east end of the apartment buildings at the 2nd and 4th floor levels.

Traffic on 53rd Avenue that borders the project on the north is slowed by a round-about just west of the project and the signalized intersection with Central Avene to the east. The model assumed a speed of 35 mph, but actual speeds are less because of the round-about. Predicted noise levels from 53rd Avenue are below the 55-decibel level.

Noise form commercial rooftop equipment between the project and Central Avenue will impact upper floors at the east end of the apartment buildings. Noise levels are about 5-6 decibels above the standard limits.

Sensitive Noise Receptors and Compliance with Noise Standards

The proposed apartment buildings will be impacted by noise from Central Avenue.

The noise prediction model indicates nighttime (6-7 am) L10 sound levels are expected to exceed the state nighttime noise standards by 1 or 2 decibels.

The upper floors of the apartment buildings will be impacted by noise from rooftop equipment on adjacent commercial buildings east of the site. The noise prediction model indicates nighttime (6-7 am) L50 sound levels are expected to exceed the state nighttime noise standards by 5 or 6 decibels.

The proposed buildings must comply with the Minnesota Residential Noise Standards which are most critical for the 6-7 am "nighttime" period. The nighttime standards are L10 55 dBA and L50 50 dBA. Proposed building wall construction and window treatments are possible remedies to meet the noise level standards. Providing a 30 dBA reduction through building walls will comply with the noise standards. A typical window-to-wall area of 40%, 6-inch stud walls with 3-pcf insulation, and STC 28 rated windows should provide a 30 dBA exterior to interior noise reduction. This should be verified by the Architect upon building design.

The adjacent residential area to the south will be exposed to construction noise from demolition and removals, site grading equipment and building construction. Construction noise will be temporary and construction times will be limited to allowable times as established by the city typically between the hours of 7:00 a.m. and 7:00 p.m., Monday through Friday.

20. Transportation:

a. Describe traffic-related aspects of project construction and operation. Include: 1) existing and proposed additional parking spaces, 2) estimated total average daily traffic generated, 3) estimated maximum peak hour traffic generated and time of occurrence, 4) indicate source of trip generation rates used in the estimates, and 5) availability of transit and/or other alternativetransportation modes.

1) The former 144,000 Medtronic office building currently has approximately 605 parking spaces. The proposed redevelopment would provide a total of approximately 675 spaces (250 surface / 425 garage) parking spaces. None of the existing office building parking spaces would remain.

2) The proposed redevelopment is estimated to generate 3,000 daily (1,500 in / 1,500 out) trips. For comparison, the former 144,000 square foot Medtronic office building is estimated to have the potential to generate 1,560 daily trips (780 in / 780 out).

3) The proposed redevelopment is estimated to generate 239 a.m. peak hour (66 in / 173 out) and 282 p.m. peak hour (165 in / 117 out). For comparison, the former 144,000 square foot Medtronic office building is estimated to have the potential to generate 219 a.m. peak hour (193 in / 26 out) and 207 p.m. peak hour (35 in / 172 out) trips. The a.m. peak hour represents 7:30 to 8:30 a.m. and the p.m. peak hour represents 5 to 6 p.m.; these peaks coincide with the peak hours of the adjacent roadways.

4) The trip generation estimates are based on the *ITE Trip Generation Manual, 11th Edition.* The trip generation for the proposed redevelopment includes a 10% multi-use reduction, which was only applied to the retail portion of the redevelopment, to account for residents that would be expected to patronize the retail uses, as well as a five (5) percent modal reduction applied to all trips to account for people that utilize alternative modes of transportation, such as transit, walk, or bike trips to travel to / from their destinations and

other area businesses.

5) Metro Transit Route 10 runs along 53rd Avenue about every 30-minutes throughout most of the day, which provides connectivity between downtown Minneapolis, Columbia Heights, and the Northtown Transit Center in Blaine. Metro Transit Route 801 runs along University Avenue (Hwy 47) about every 60-minutes between 5 a.m. and 7 p.m., which provides connectivity between Maple Grove, Columbia Heights, Silver Lake, and the Rosedale Transit Center.

There is a multiuse trail along the south side of 53rd Avenue and a sidewalk along the north side of the roadway. The facilities provide connectivity to area businesses, residences, and transit facilities, as well as existing multimodal facilities along Central Avenue (Hwy 65).

b. Discuss the effect on traffic congestion on affected roads and describe any traffic improvements necessary. The analysis must discuss the Project's impact on the regional transportation system. If the peak hour traffic generated exceeds 250 vehicles or the total daily trips exceeds 2,500, a traffic impact study must be prepared as part of the EAW. Use the format and procedures described in the Minnesota Department of Transportation's Access Management Manual, Chapter 5 (available at: http://www.dot.state.mn.us/accessmanagement/resources.html) or a similar local guidance.

A detailed intersection capacity analysis was conducted as part of the *800 53rd Avenue Redevelopment Traffic Study*, which included a review of existing and future year 2030 no build and build conditions. Since the overall daily trip generation of the proposed redevelopment is relatively similar to the former 144,000 square foot Medtronic office building, the overall impact to the regional transportation system is expected to be relatively minimal. In addition, MnDOT recently evaluated the University Avenue (Hwy 47) and Central Avenue (Hwy 65) corridors as part of the *Hwy 47 & Hwy 65 Planning Study*, which is intended to identify the long-term vision for these regional corridors.

Results of the intersection capacity analysis indicate that there are no significant existing issues within the proposed redevelopment area from a level of service and / or queuing perspective; there are some minor queuing issues during the peak hours, but they generally dissipate within one (1) cycle length and do not warrant any mitigation.

With the addition of the proposed redevelopment, all study intersections and approaches are expected to continue to operate at LOS D or better during the peak hours. The overall change in operations between the year 2030 no build and build conditions range from about 2 to 4 seconds without any changes to the existing signal timing. Westbound queues along 53rd Avenue from University Avenue (Hwy 47) are expected to increase by approximately 50' to 75' during the peak periods (i.e., 2 to 4 vehicles) as a result of the proposed redevelopment; these queues are expected to extend up to approximately 375' to 400' during the p.m. peak hour. In addition, there is some minor queuing expected during the p.m. peak hour at a couple site access approaches, but nothing that would warrant any significant changes.

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

The adjacent roadway network can support the proposed redevelopment and no additional infrastructure changes are needed from an intersection capacity perspective. Note that the City recently reconstructed 53rd Avenue in 2023 with an emphasis on safety, multimodal connectivity, and access management.

A review of the proposed site plan identified the following considerations:

- Locate signage and landscaping to avoid creating any sight distance issues.
- Provide multimodal connections throughout the site to ensure connectivity with existing and proposed facilities adjacent to the site.
- Review truck maneuverability to limit potential internal circulation conflicts.
- Align the northern east-west driveway aisles between the northwest townhomes and the multifamily apartments to reduce potential conflicts between movements.
- Preserve the ability to connect the proposed redevelopment with an extension of 52nd Avenue.

21. **Cumulative potential effects:** (Preparers can leave this item blank if cumulative potential effects areaddressed under the applicable EAW Items)
    a. Describe the geographic scales and timeframes of the project related environmental effects thatcould combine with other environmental effects resulting in cumulative potential effects.

Cumulative potential effects would include improvement to property adjacent to the project site. Currently, the surrounding properties to the north, east, and south are developed. Sullivan Lake is adjacent to the west. It is anticipated that full buildout of the development will occur over several years based upon market conditions. Any foreseeable future development would be re-development and would provide an opportunity to review any potential cumulative impacts.

    b. Describe any reasonably foreseeable future projects (for which a basis of expectation has been laid) that may interact with environmental effects of the proposed project within the geographicscales and timeframes identified above.

There are no other known proposed developments surrounding the vicinity of the Project site. Should projects be proposed in the vicinity of the Project the impacts associated with those projects will be assessed as needed. It is not anticipated that future projects will combine with the impacts caused by the Project in this EAW to cause significant cumulative effects.

    c. Discuss the nature of the cumulative potential effects and summarize any other available information relevant to determining whether there is potential for significant environmental effects due to these cumulative effects.

All of the cumulative effects with the project have been accounted for within the responses to the previous questions.

22. **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 environmentwill be affected, and identify measures that will be taken to minimize and mitigate these effects.

No additional environmental effects have been identified.

RGU CERTIFICATION. (The Environmental Quality Board will only accept **SIGNED** Environmental Assessment Worksheets for public notice in the EQB Monitor.)

I hereby certify that:

- The information contained in this document is accurate and complete to the best of my

knowledge.

- The EAW describes the complete project; there are no other projects, stages or components other than those described in this document, which are related to the project as connected actions or phased actions, as defined at Minnesota Rules, parts 4410.0200, subparts 9c and 60, respectively.
- Copies of this EAW are being sent to the entire EQB distribution list.

Signature_____ Date _____

Title _____

FIGURES

ArcGIS Web Map

5/14/2025, 11:01:11 AM

1:4,800

0 225 450 900 ft

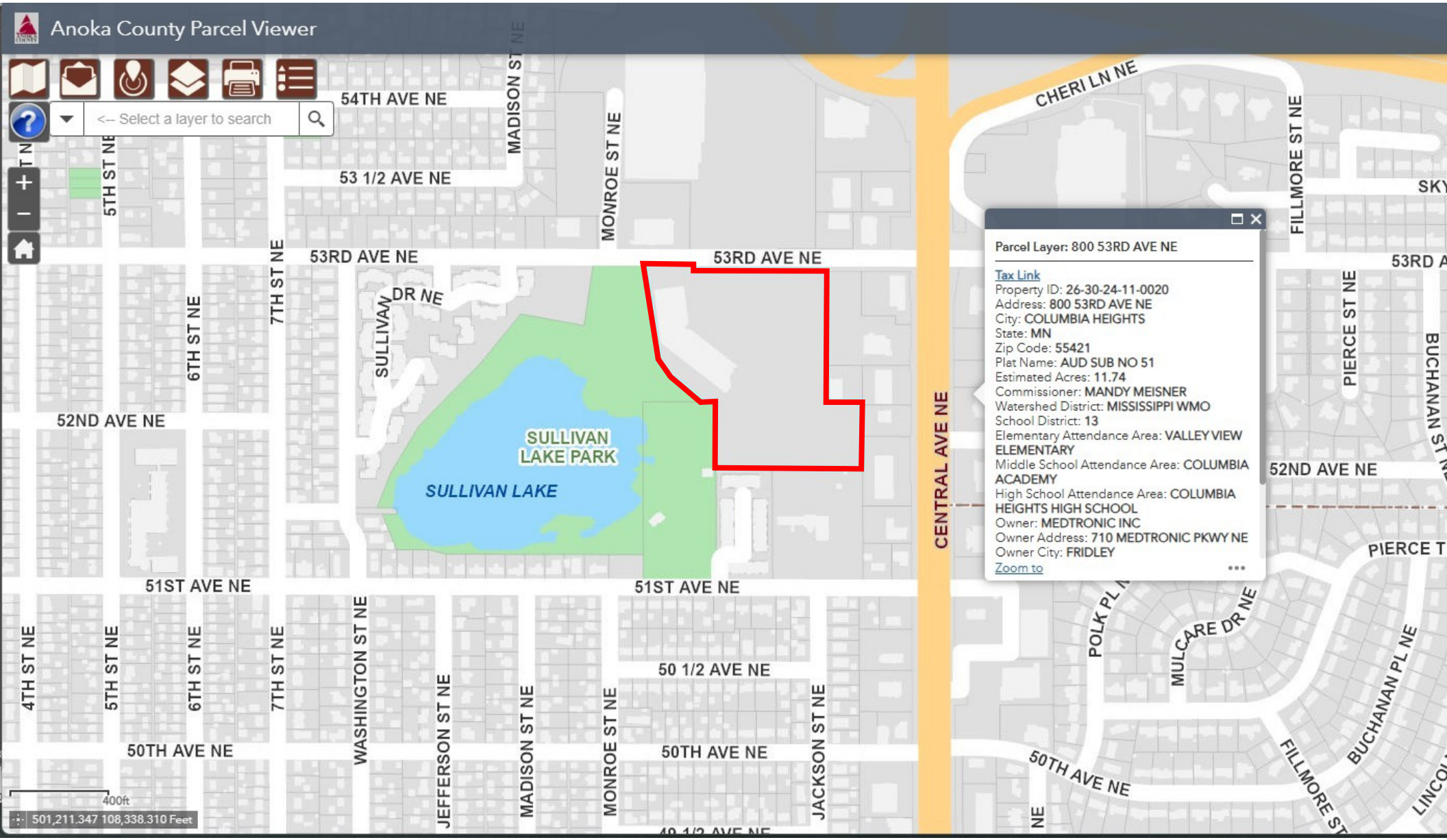
0 65 130 260 m

N

LOCATION MAP

Figure 1

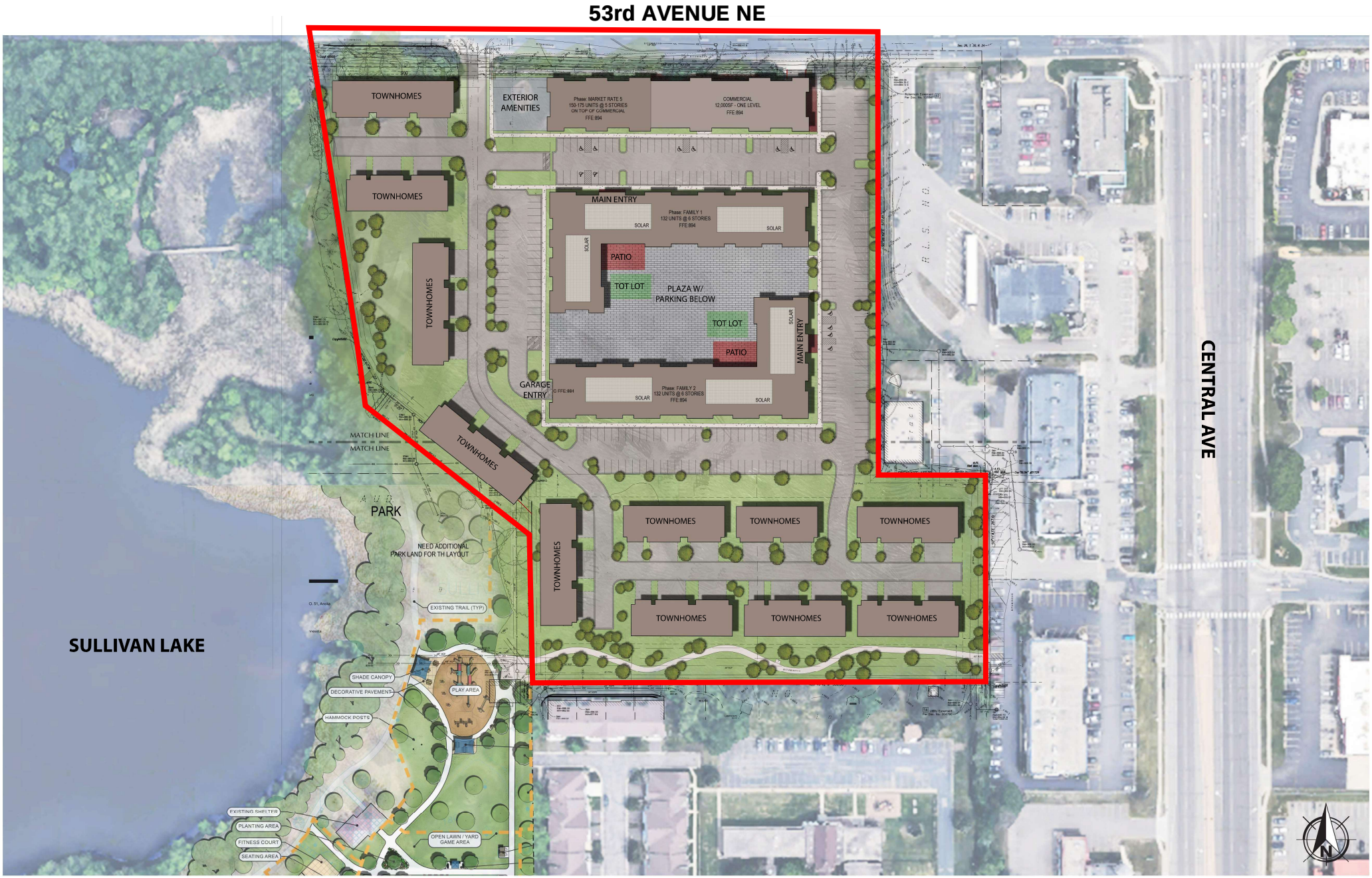
Web AppBuilder for ArcGIS



N

PARCEL MAP

Figure 2



kaas wilson architects

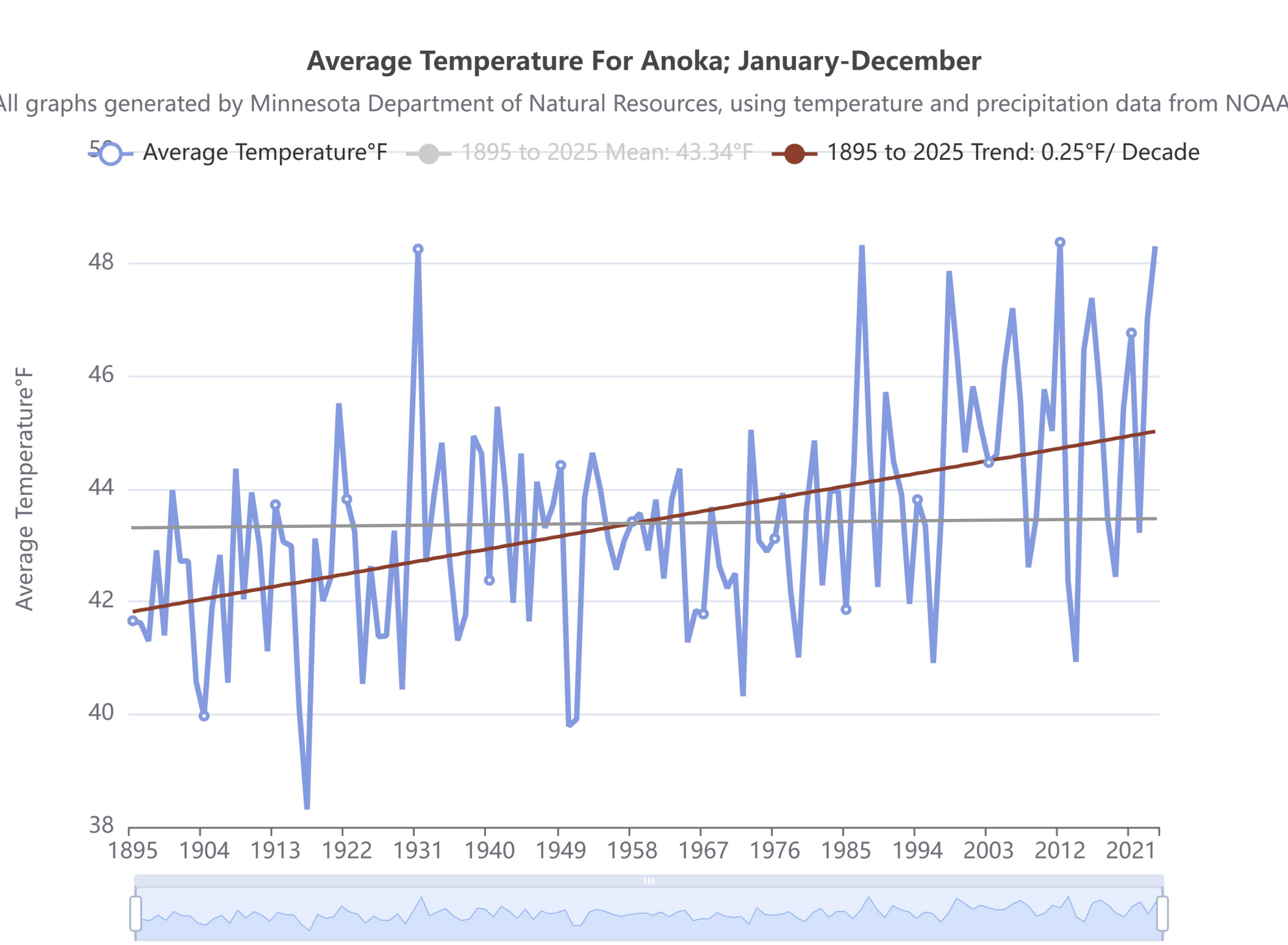
FLOOR PLANS
1"=50'-0"

LAC-Columbia Heights-800 53rd Apts

N

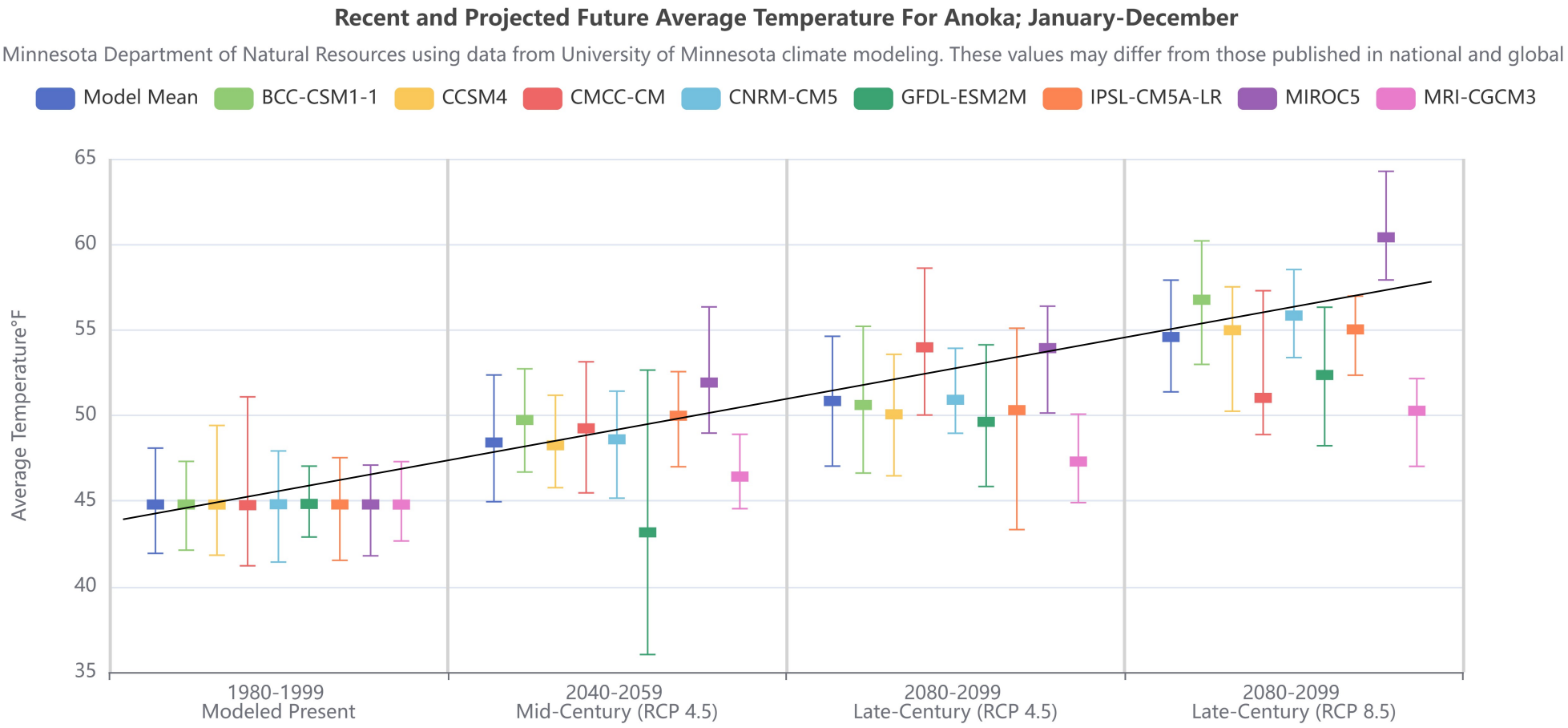
SITE PLAN

Figure 3



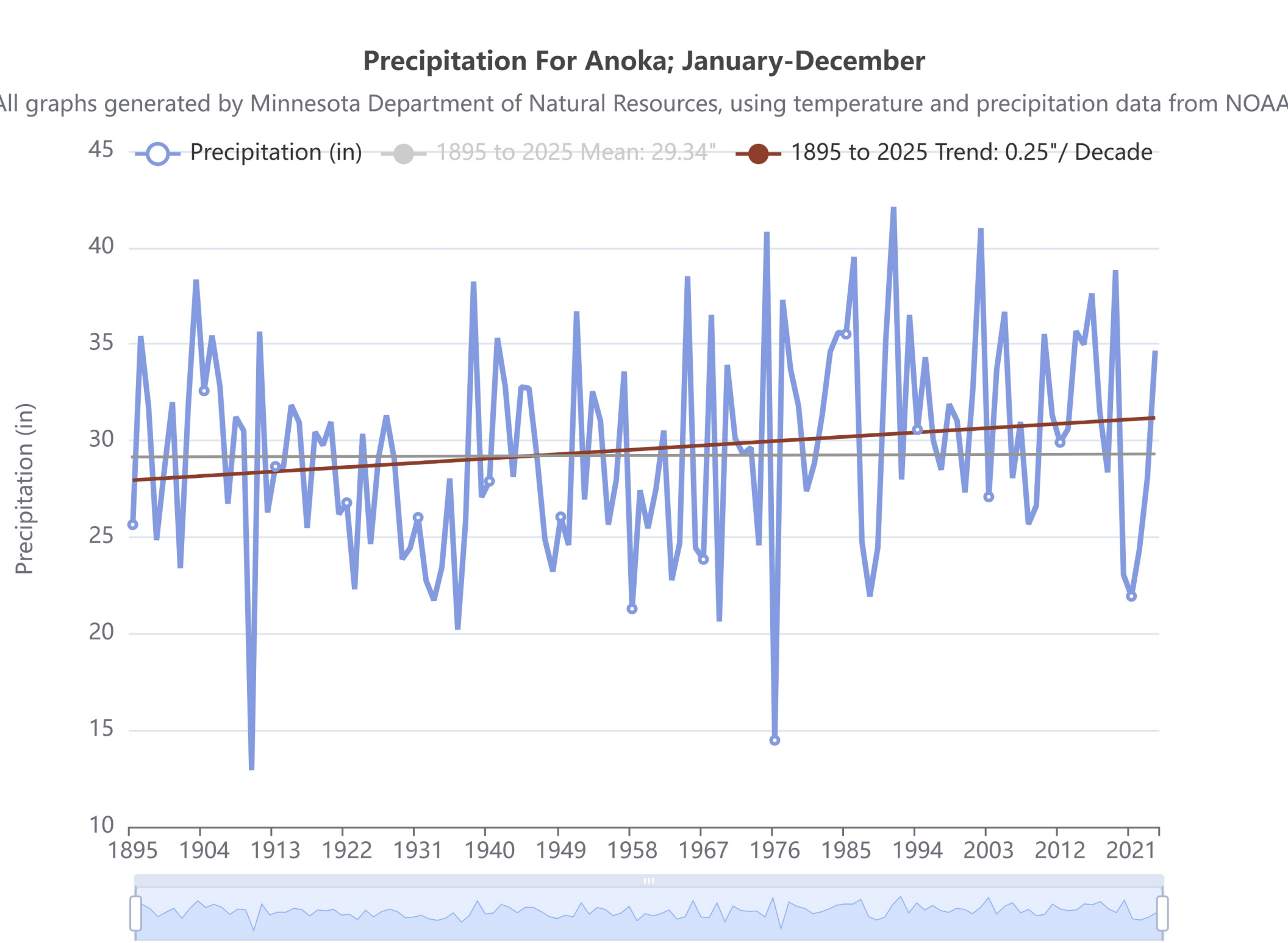
HISTORIC AVERAGE TEMPERATURE FOR ANOKA COUNTY

Figure 4



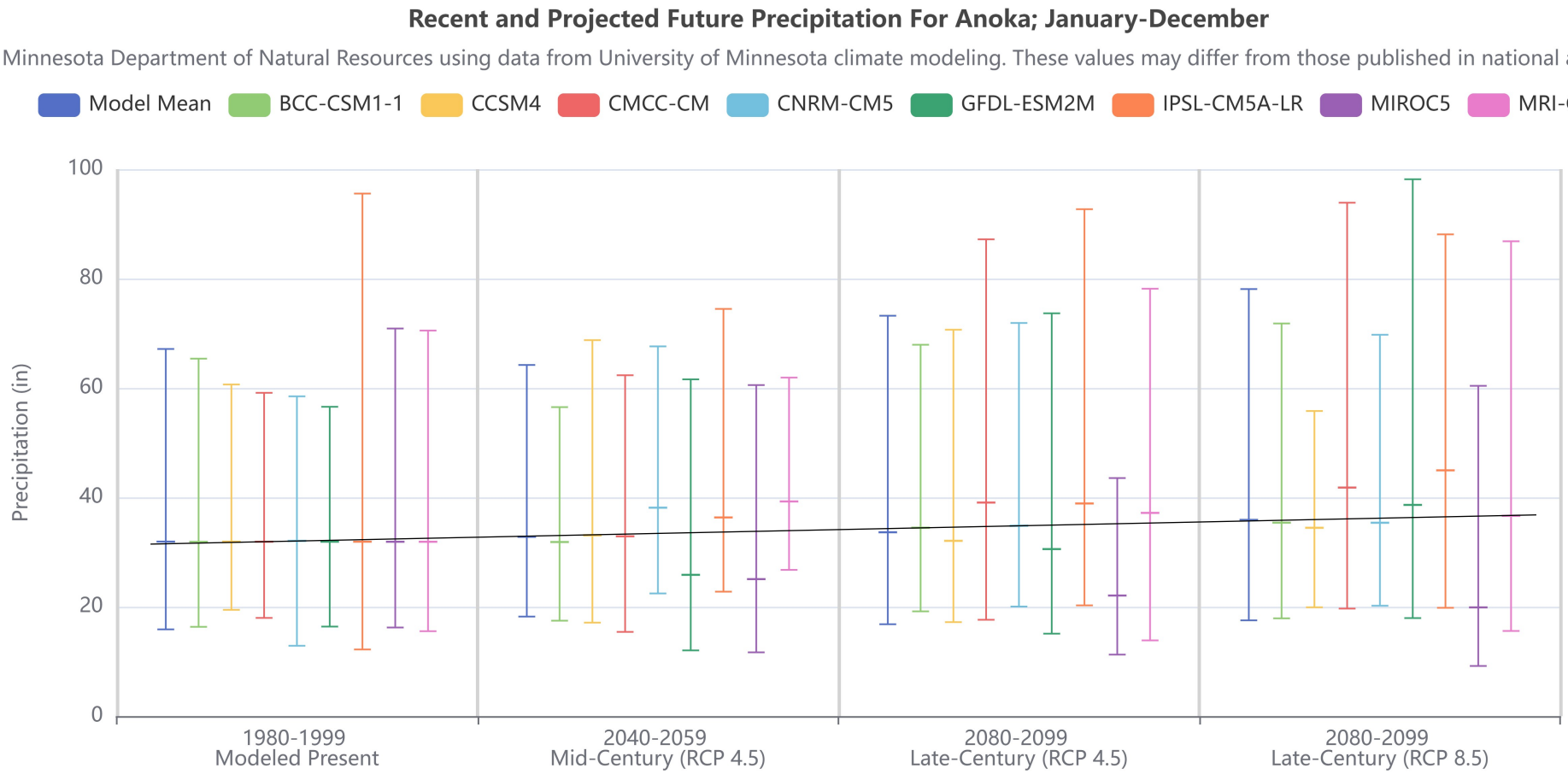
PROJECTED FUTURE AVERAGE TEMPERATURE FOR ANOKA COUNTY

Figure 5



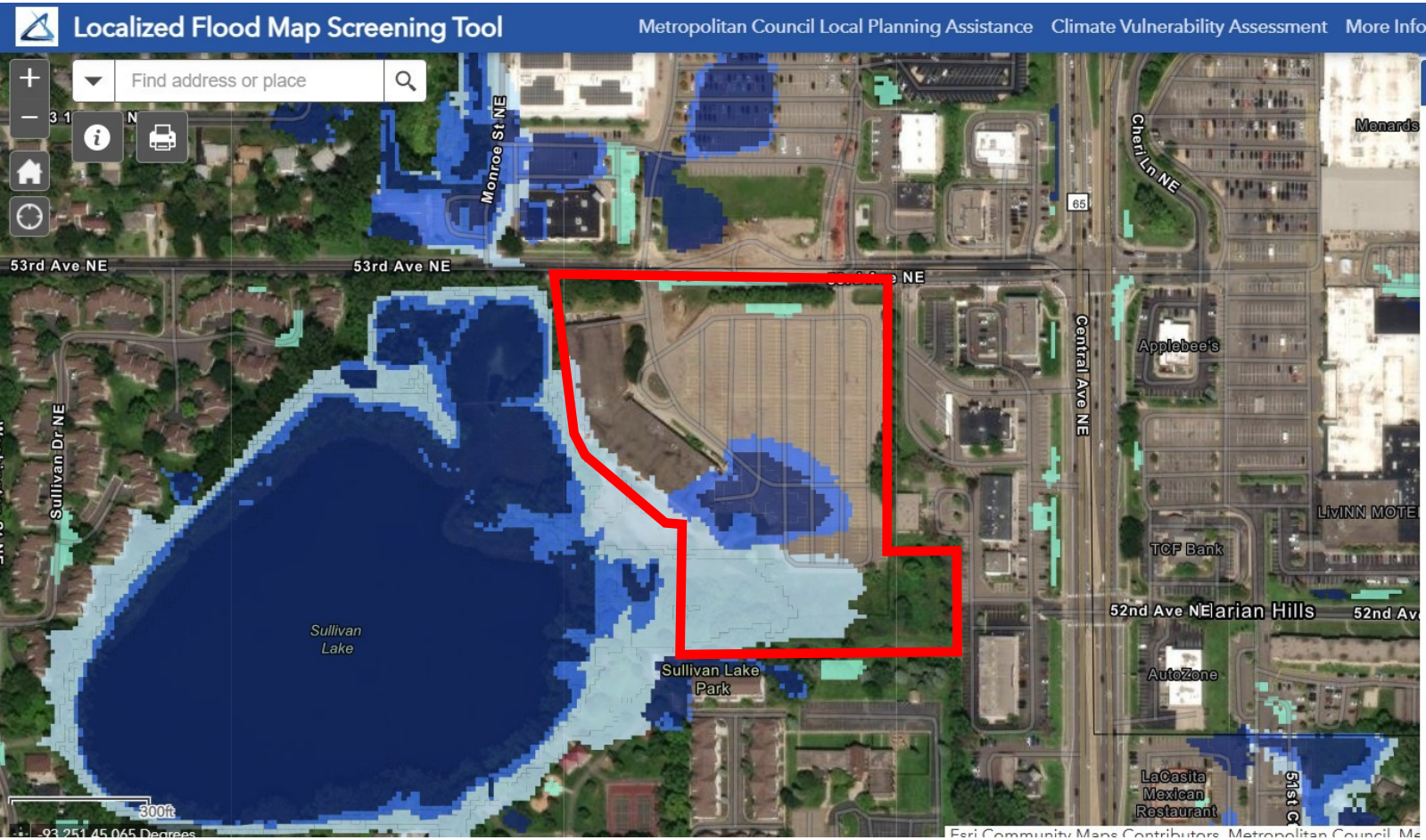
HISTORIC AVERAGE PRECIPITATION FOR ANOKA COUNTY

Figure 6



PROJECTED FUTURE AVERAGE PRECIPITATION FOR ANOKA COUNTY

Figure 7



N

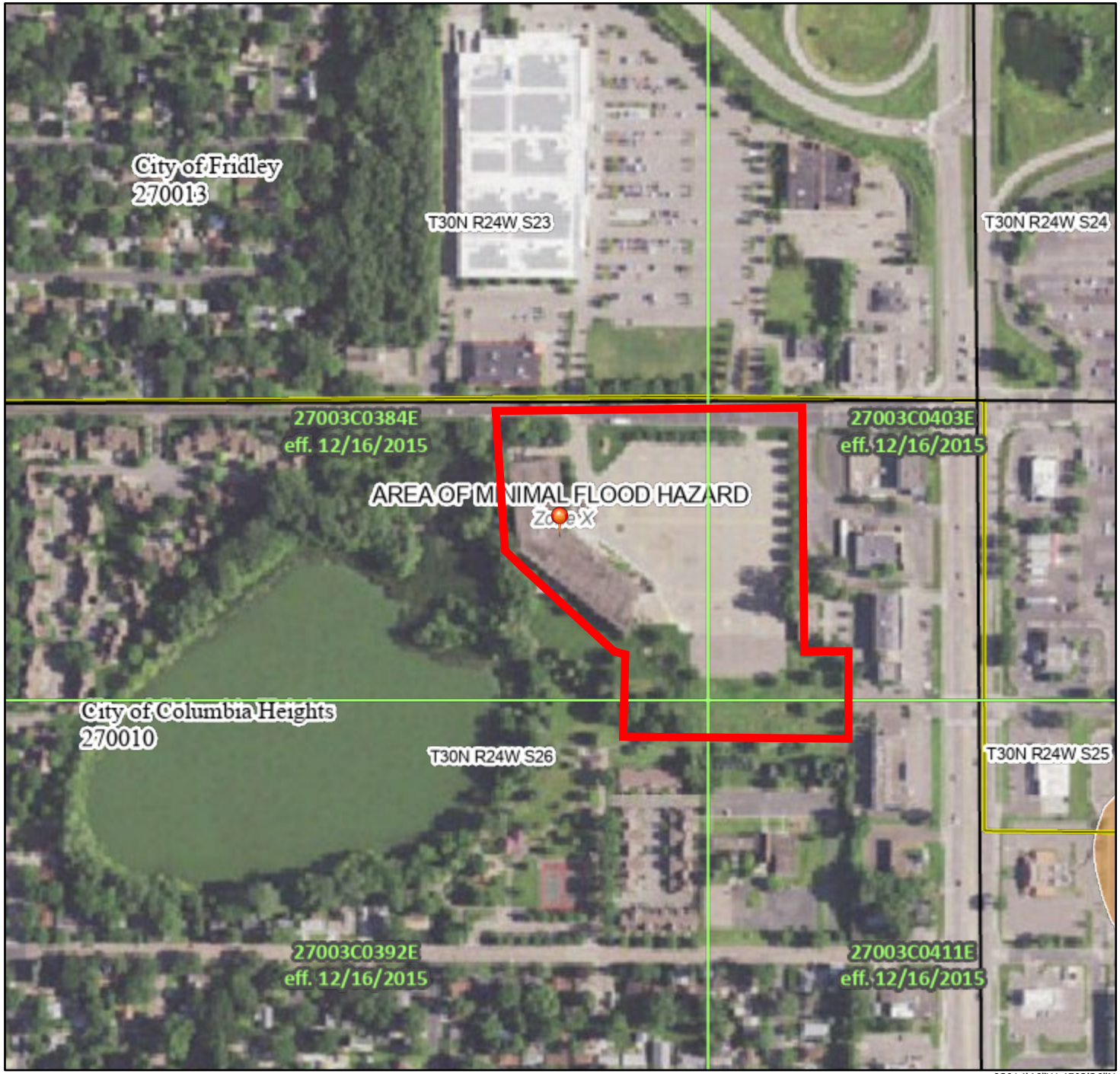
LOCALIZED FLOOD RISK MAP

Figure 8

National Flood Hazard Layer FIRMette

FEMA

93°15'24"W 45°4'2"N



0 250 500 1,000 1,500 2,000 Feet

1:6,000

93°14'46"W 45°3'36"N

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

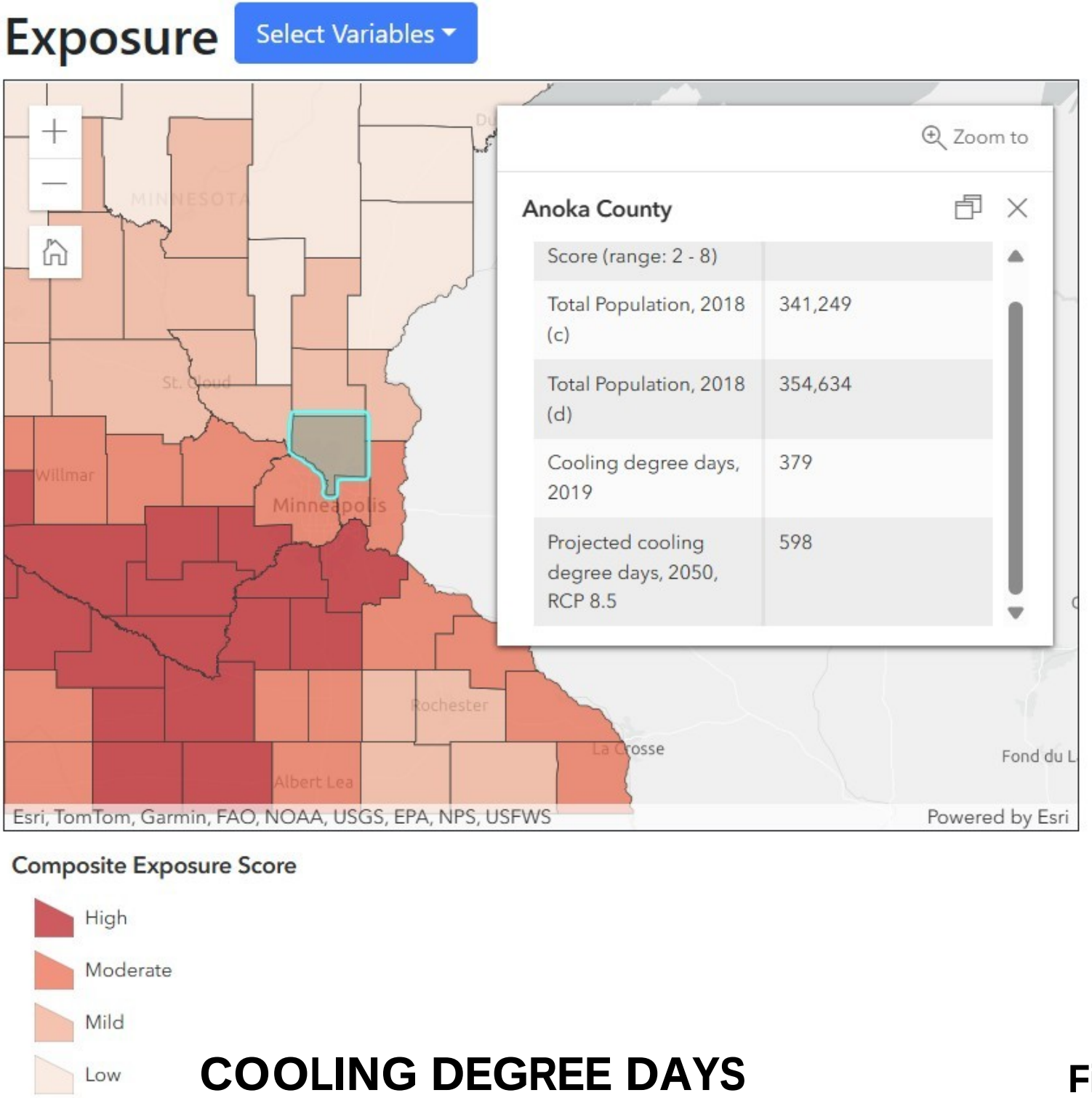
The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 4/7/2025 at 7:42 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

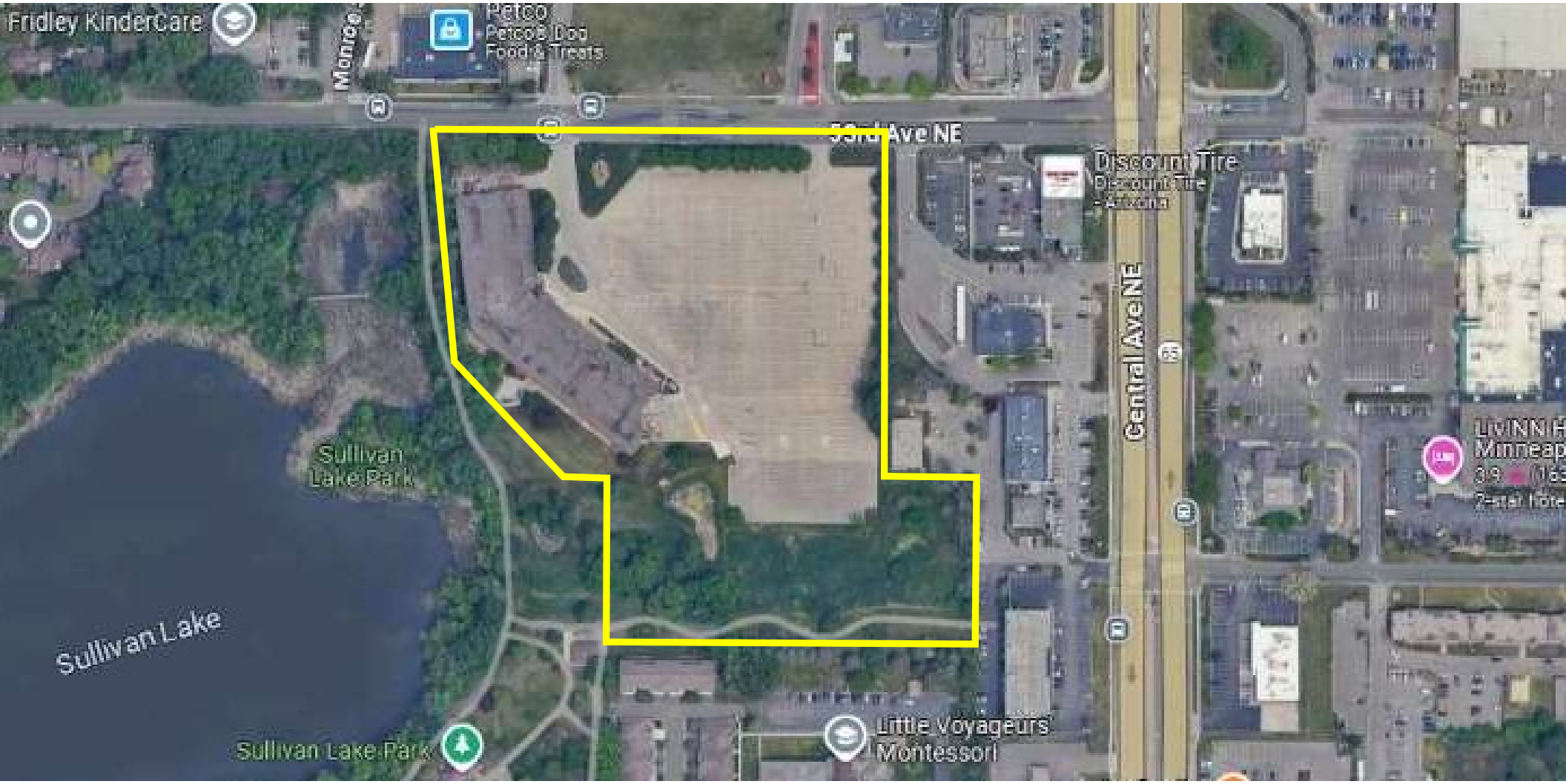
This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Figure 9



COOLING DEGREE DAYS

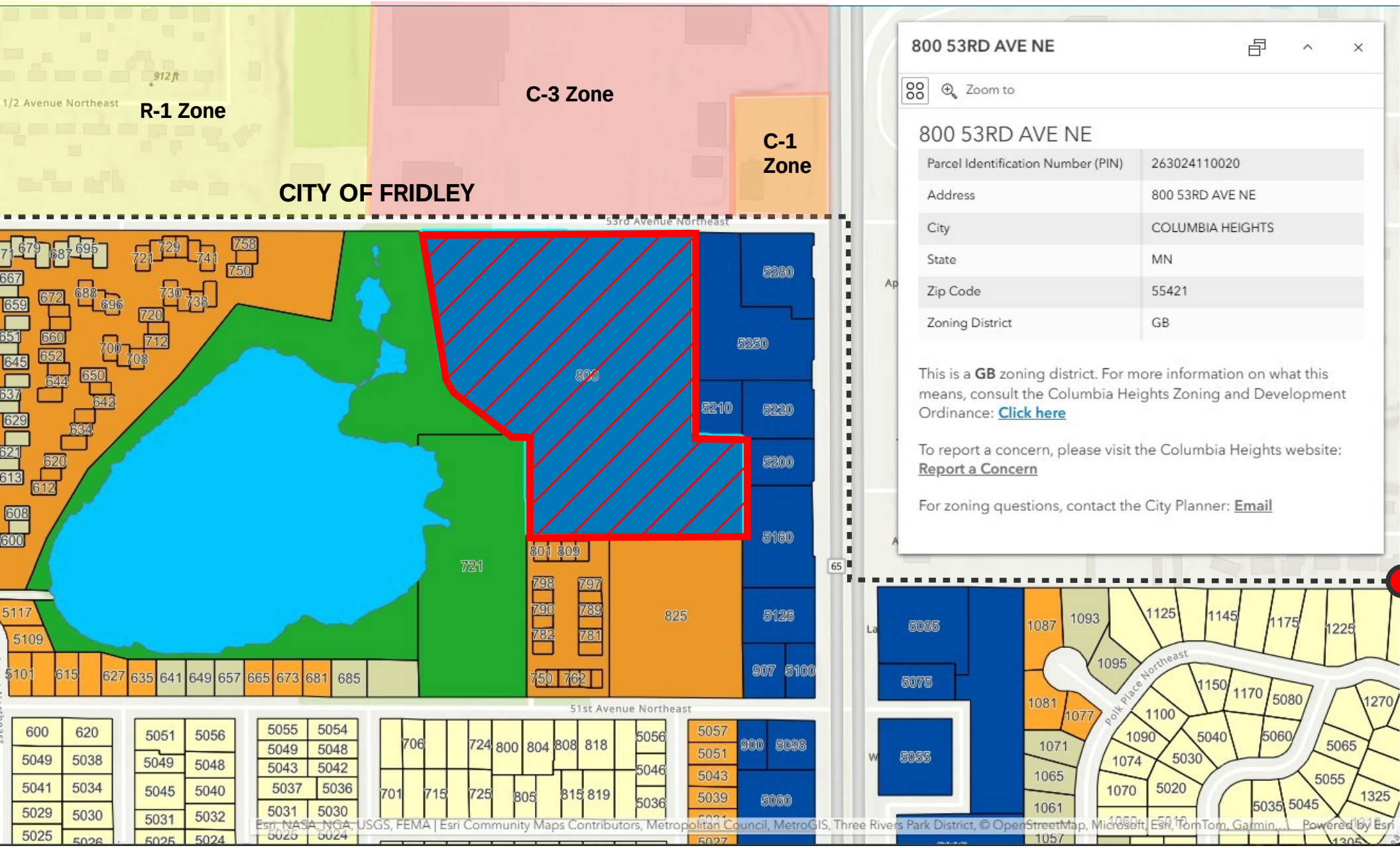
Figure 10



N

EXISTING SITE CONDITIONS

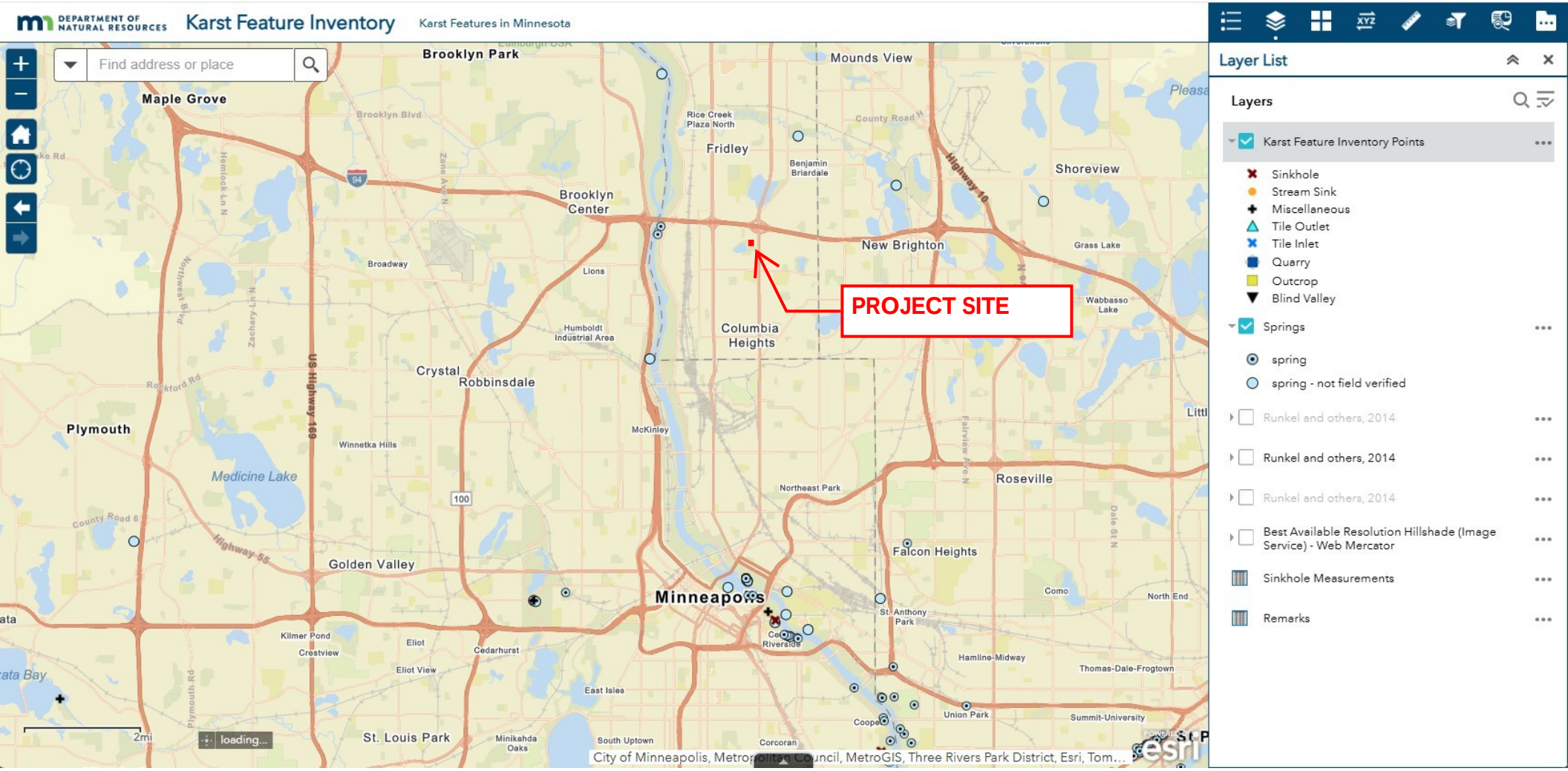
Figure 11



N

ZONING MAP

Figure 12



N

KARST INVENTORY MAP

Figure 13

Soil Map—Anoka County, Minnesota
(800 53rd ave)

Map Scale: 1:1,960 if printed on B landscape (17" x 11") sheet.

N

Meters: 0 25 50 100 150

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Anoka County, Minnesota
Survey Area Data: Version 22, Sep 7, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 29, 2023—Sep 13, 2023

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

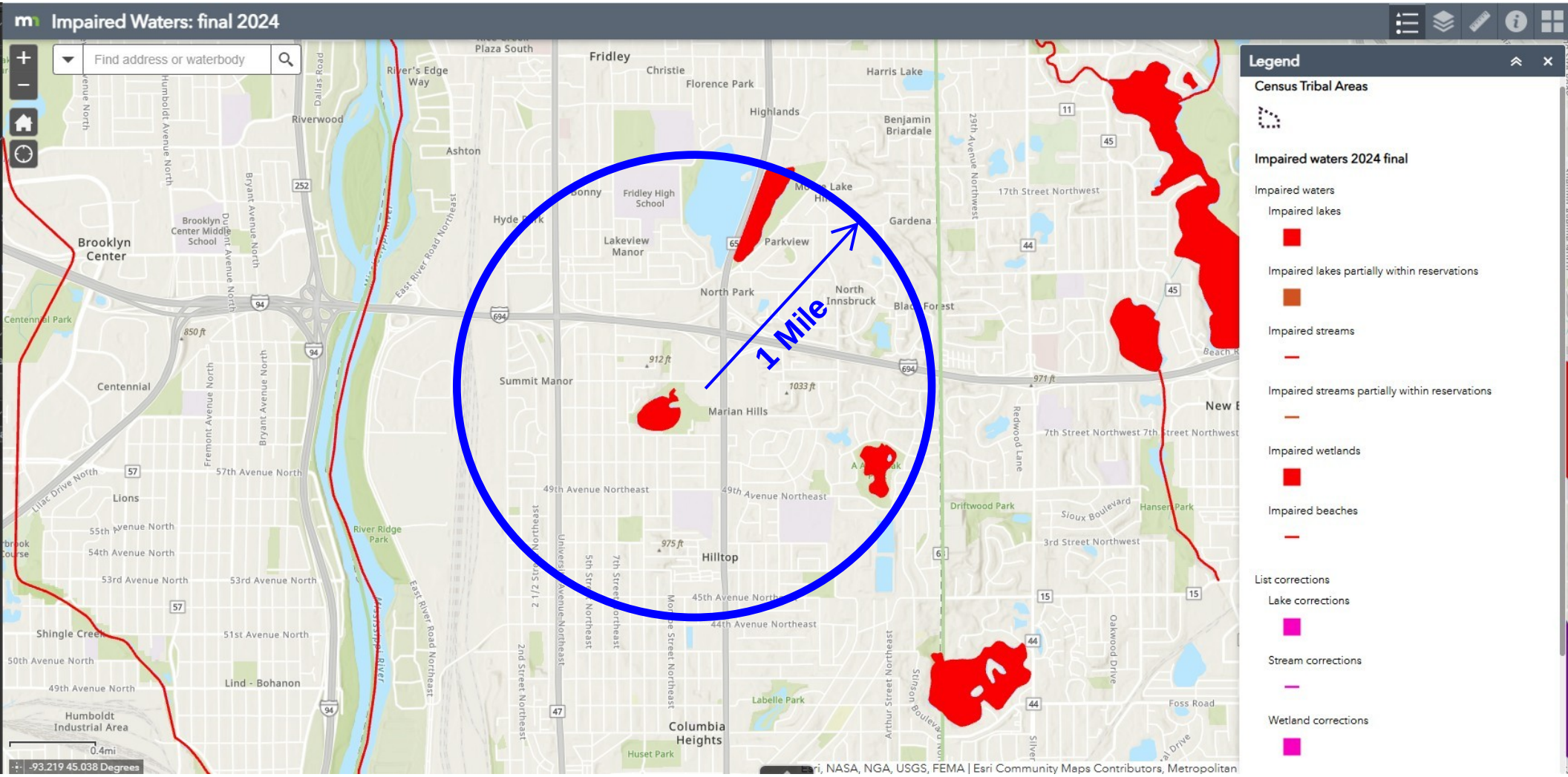
Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
UuB	Urban land-Udorthents (cut and fill land) complex, 0 to 6 percent slopes	27.4	96.6%
W	Water	1.0	3.4%
Totals for Area of Interest		**28.4**	**100.0%**

N

EXISTING TOPOGRAPHY

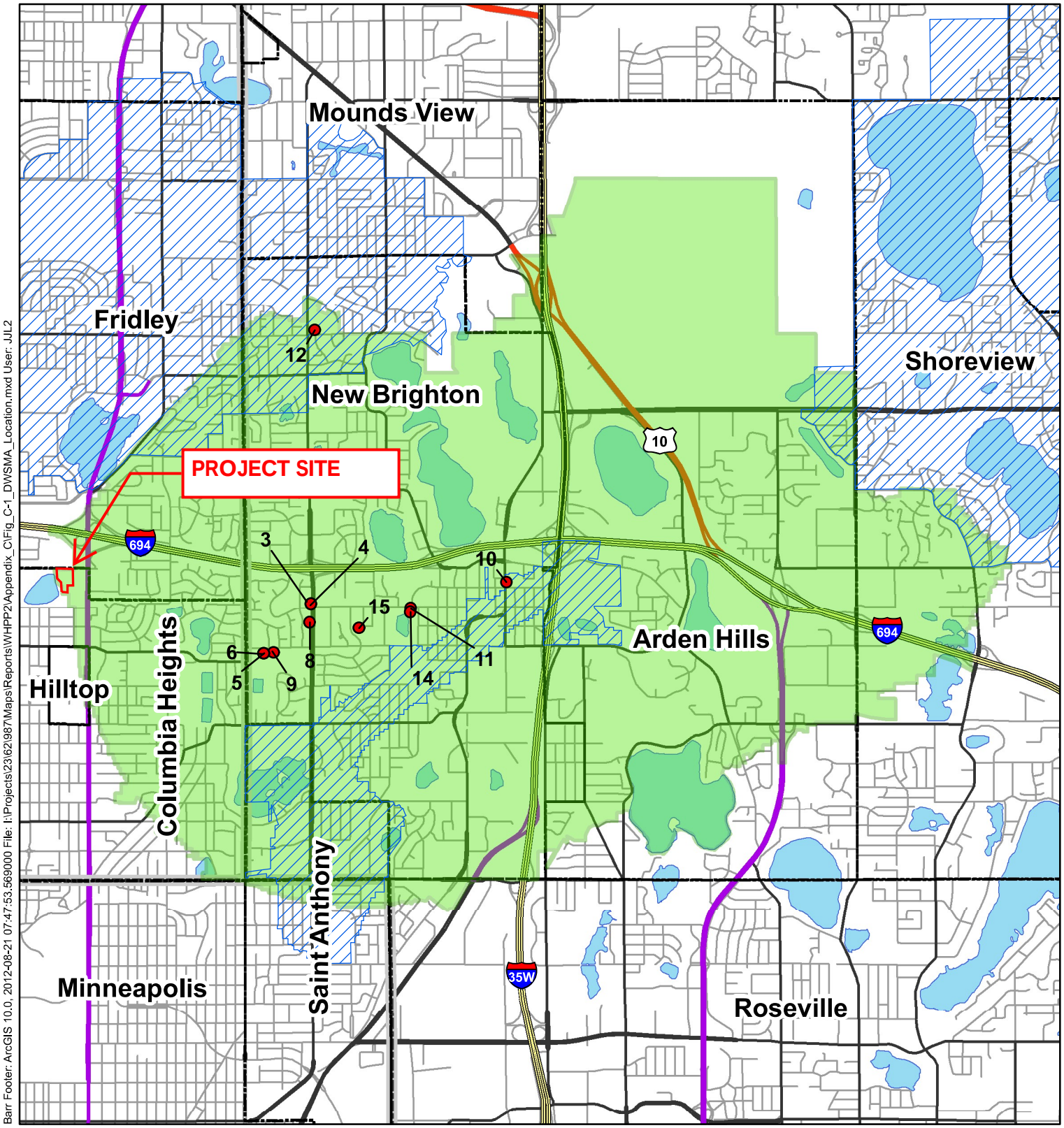
Figure 15



N

IMPAIRED WATERS INVENTORY MAP

Figure 16



New Brighton Supply Well (Active)

New Brighton DWSMA

Municipal Boundaries

County Boundary

Water Body

Overlapping DWSMA Boundary

N

Miles
0 0.5 1

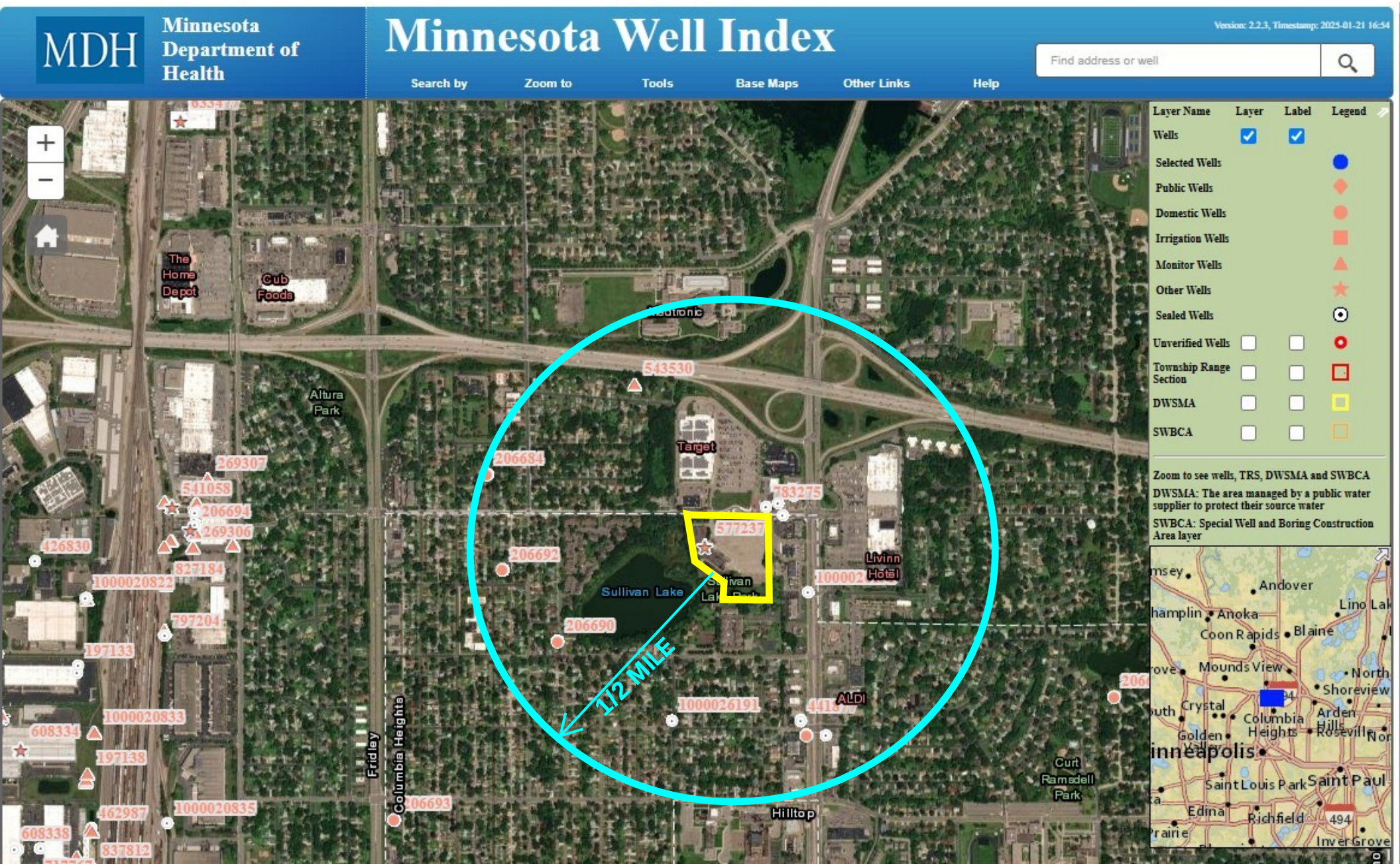
Kilometers
0 1 2

Figure C-1

DWSMA LOCATION
City of New Brighton
Ramsey County, MN

Figure 17

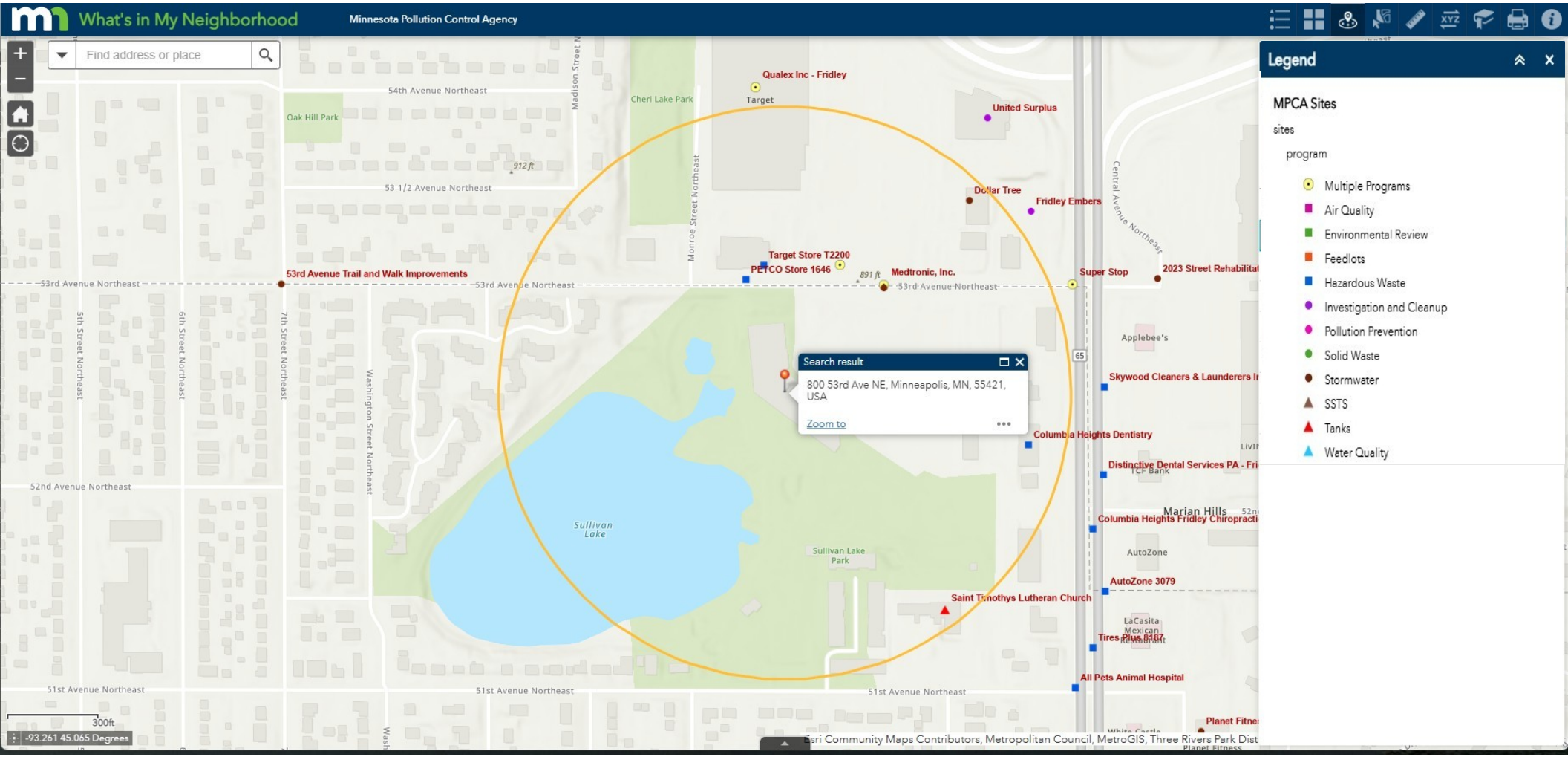
BARR



N

WELL INDEX MAP

Figure 18



WHAT'S IN MY NEIGHBORHOOD

N

Figure 19

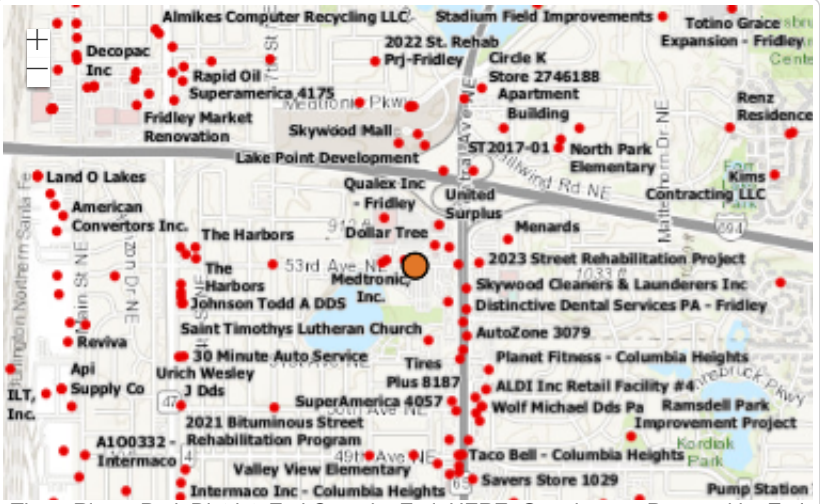
MINNESOTA POLLUTION CONTROL AGENCY

Data

What's in My Neighborhood

Medtronic, Inc.

Location:	800 53rd Ave NE Fridley, MN 55421-1241 Anoka County
Watershed:	Mississippi River - Twin Cities (07010206)
Latitude:	45.0644445
Longitude:	-93.2501573
Coordinate collection method:	Address Matching House Number
Currently active?	Yes
Industry classification:	Electromedical and Electrotherapeutic Apparatus Manufacturing
Institutional controls:	No



Search with a map

Activity overview | MPCA contacts | Alternate names | Owners | Documents (0)

Hazardous Waste

Hazardous Waste - MND982636995 - Very small quantity generator

Status: Active

Hazardous waste includes substances that are corrosive, explosive, toxic and-or fire hazards. Very Small Quantity Generators produce 220 pounds or less of hazardous waste, and less than 2.2 pounds of acute hazardous waste per month. Businesses in this classification require a license.

Less Detail ▲

Events

Event	Start	End
Application/Notification/Registration Received	07/30/2021	07/30/2021
Application/Notification/Registration Received	06/04/2021	06/04/2021
Application/Notification/Registration Received	03/24/2020	03/24/2020
Application/Notification/Registration Received	07/22/2019	07/22/2019
Application/Notification/Registration Received	02/13/2019	02/13/2019
Application/Notification/Registration Received	01/25/2018	01/25/2018
Application/Notification/Registration Received	07/20/2017	07/20/2017
Application/Notification/Registration Received	04/19/2017	04/19/2017
Application/Notification/Registration Received	05/03/2016	05/03/2016
Annual Gen License Report	11/24/2014	
Annual Gen License Report	12/16/2013	
Annual Gen License Report	01/04/2013	
Application/Notification/Registration Received	01/01/2012	01/01/2012
Annual Gen License Report	12/20/2011	

Event	Start	End
Annual Gen License Report	04/19/2010	
Annual Gen License Report	05/07/2009	
Annual Gen License Report	06/12/2008	
Annual Gen License Report	01/28/2008	

Links to additional data sources

HW Generator License Application Data - MND982636995

Stormwater

Industrial Stormwater - MNRNE39YF

Status: Inactive

At industrial sites, stormwater may come into contact with harmful pollutants such as toxic metals, oil, grease and de-icing salts. Industrial stormwater permits are designed to limit the contaminants that reach surface and groundwater.

Less Detail ▲

Events

Event	Start	End
No Exposure Termination	05/05/2021	05/05/2021
No Exposure Exclusion	04/05/2015	03/31/2020

Links to additional data sources

ISW Online Permit Data - MNRNE39YF

Industrial Stormwater - MNRNE34QB

Status: Inactive

At industrial sites, stormwater may come into contact with harmful pollutants such as toxic metals, oil, grease and de-icing salts. Industrial stormwater permits are designed to limit the contaminants that reach surface and groundwater.

Less Detail ▲

Events

Event	Start	End
No Exposure Exclusion	07/16/2010	04/04/2015
No Exposure Exclusion	01/24/2008	04/04/2010
No Exposure Exclusion	04/19/2004	01/23/2008

Links to additional data sources

ISW Online Permit Data - MNRNE34QB

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- Ask us a question
- Glossary of terms

MPCA website policies and disclaimers

Register to vote

MINNESOTA POLLUTION CONTROL AGENCY

Data

What's in My Neighborhood

North Star Beverages

Location:	785 53rd Ave NE Fridley, MN 55421-1240 Anoka County
Watershed:	Mississippi River - Twin Cities (07010206)
Latitude:	45.0646228
Longitude:	-93.2507106
Coordinate collection method:	Address Matching House Number
Currently active?	**No**
Institutional controls:	No

Search with a map

Activity overview | MPCA contacts | Alternate names | Owners | Documents (1)

Hazardous Waste

Hazardous Waste - MND086571601
Status: Inactive

Less Detail ▲

Events

Event	Start	End
Application/Notification/Registration Received	01/01/1985	01/01/1985

Links to additional data sources

HW Generator License Application Data - MND086571601

Investigation and Cleanup

Petroleum Remediation - LS0015047 - Leak Site
Status: Inactive

Leak sites are locations where a release of petroleum products has occurred from a tank system. Leak sites can occur from aboveground or underground tank systems as well as from spills at tank facilities.

Less Detail ▲

Events

Event	Start	End
Site Closed	10/25/2006	10/25/2006
Limited Site Investigation Reviewed	10/11/2006	10/25/2006
Technical Review of Limited Site Investigation Report Completed	10/11/2006	10/18/2006
Application Completeness Determined	10/11/2006	10/11/2006
Responsible Party Determined	11/27/2002	11/27/2002
Standard Letter Issued	11/27/2002	11/27/2002
Leak Discovered	11/21/2002	11/21/2002
Leak Reported	11/21/2002	11/21/2002

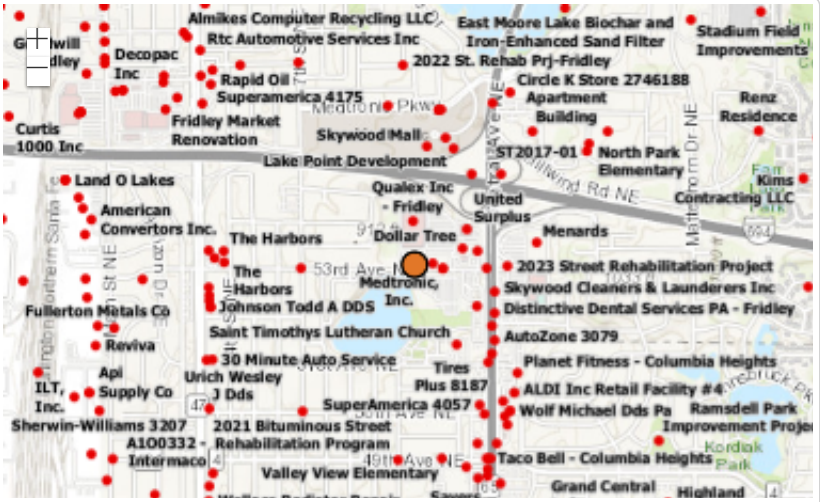
MINNESOTA POLLUTION CONTROL AGENCY

Data

What's in My Neighborhood

Target Store T2200

Location:	755 53rd Ave NE Fridley, MN 55421-1240 Anoka County
Watershed:	Mississippi River - Twin Cities (07010206)
Latitude:	45.064618
Longitude:	-93.2516745
Coordinate collection method:	Address Matching House Number
Currently active?	Yes
Industry classification:	Department Stores Department Stores
Institutional controls:	No



Search with a map

Activity overview | MPCA contacts | Alternate names

Owners | Documents (0)

Hazardous Waste

Hazardous Waste - MND120016480 - Small quantity generator
Status: Active

Hazardous waste includes substances that are corrosive, explosive, toxic and/or fire hazards. Small Quantity Generators produce between 220 and 2,200 pounds of hazardous waste per month, and less than 2.2 pounds of waste classified as acute hazardous waste. Businesses in this classification require a license.

Less Detail ▲

Events

Event	Start	End
Application/Notification/Registration Received	02/05/2025	02/05/2025
Application/Notification/Registration Received	10/11/2024	10/11/2024
Application/Notification/Registration Received	09/19/2023	09/19/2023
Application/Notification/Registration Received	10/12/2022	10/12/2022
Application/Notification/Registration Received	06/04/2021	06/04/2021
Application/Notification/Registration Received	02/05/2021	02/05/2021
Application/Notification/Registration Received	05/21/2020	05/21/2020
Application/Notification/Registration Received	03/24/2020	03/24/2020
Application/Notification/Registration Received	02/13/2019	02/13/2019
Application/Notification/Registration Received	01/25/2018	01/25/2018
Application/Notification/Registration Received	04/19/2017	04/19/2017
Application/Notification/Registration Received	05/03/2016	05/03/2016

Event	Start	End
Annual Gen License Report	11/24/2014	
Annual Gen License Report	12/16/2013	
Annual Gen License Report	01/04/2013	
Application/Notification/Registration Received	02/20/2012	02/20/2012
Annual Gen License Report	12/20/2011	
Annual Gen License Report	04/19/2010	
Annual Gen License Report	05/07/2009	

Inspections and field work

Type	Date
HW Compliance Evaluation Inspection	06/10/2014

Links to additional data sources

HW Generator License Application Data - MND120016480

MINNESOTA POLLUTION CONTROL AGENCY

Data

What's in My Neighborhood

Saint Timothys Lutheran Church

Location:	825 51st Ave NE Columbia Heights, MN 55421 Anoka County
Watershed:	Mississippi River - Twin Cities (07010206)
Latitude:	45.061549
Longitude:	-93.2493844
Coordinate collection method:	Digitized - MPCA internal map
Currently active?	**No**
Institutional controls:	No

Search with a map

Activity overview | MPCA contacts | Alternate names | Owners | Documents (0)

Tanks

Underground Tanks - TS0013988
Status: Inactive

An underground storage tank site has at least one tank of a certain size on the premises. A tank site may have multiple tanks and these tanks may contain food products, petroleum products or other substances.

Less Detail ▲

Events

Event	Start	End
Registration Received	12/08/1992	12/08/1992
Notice Received	11/25/1992	11/25/1992
Registration Received	07/09/1990	07/09/1990

Links to additional data sources

Tank Data - TS0013988

MINNESOTA POLLUTION CONTROL AGENCY

Data

What's in My Neighborhood

PETCO Store 1646

Location:	753 53rd Ave NE Fridley, MN 55421 Anoka County
Watershed:	Mississippi River - Twin Cities (07010206)
Latitude:	45.0644914
Longitude:	-93.2519005
Coordinate collection method:	Address Matching House Number
Currently active?	Yes
Industry classification:	Pet and Pet Supplies Retailers
Institutional controls:	No

Search with a map

Activity overview | MPCA contacts | Alternate names | Owners | Documents (0)

Hazardous Waste

Hazardous Waste - MNS000193102 - Very small quantity generator
Status: Active

Hazardous waste includes substances that are corrosive, explosive, toxic and-or fire hazards. Very Small Quantity Generators produce 220 pounds or less of hazardous waste, and less than 2.2 pounds of acute hazardous waste per month. Businesses in this classification require a license.

Less Detail ▲

Events

Event	Start	End
Application/Notification/Registration Received	08/05/2013	08/05/2013

Links to additional data sources

HW Generator License Application Data - MNS000193102

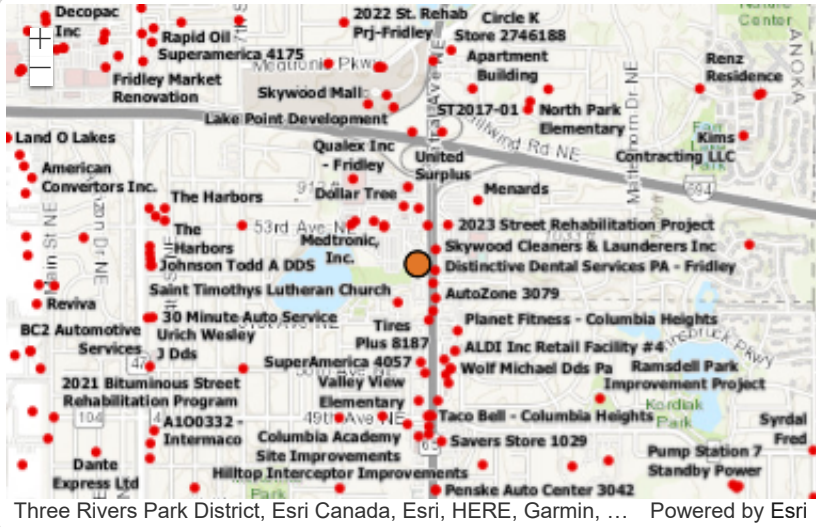
MINNESOTA POLLUTION CONTROL AGENCY

Data

What's in My Neighborhood

Columbia Heights Dentistry

Location:	5220 Central Ave NE Ste 240 Columbia Heights, MN 55421-1823 Anoka County
Watershed:	Mississippi River - Twin Cities (07010206)
Latitude:	45.06301832
Longitude:	-93.24833188
Coordinate collection method:	Address Matching House Number
Currently active?	Yes
Industry classification:	Offices of Dentists
Institutional controls:	No



Search with a map

Activity overview | MPCA contacts | Alternate names | Owners | Documents (0)

Hazardous Waste

Hazardous Waste - MNS000328696 - Minimal quantity generator
Status: Active

Hazardous waste includes substances that are corrosive, explosive, toxic and-or fire hazards. Minimal Quantity Generators generate less than 100 pounds per year, none of which is classified as an acute hazardous waste.

Less Detail ▲

Events

Event	Start	End
Application/Notification/Registration Received	04/12/2019	04/12/2019

Links to additional data sources

HW Generator License Application Data - MNS000328696

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Tools

- Assistance (How can we help?)
- Ask us a question
- Glossary of terms

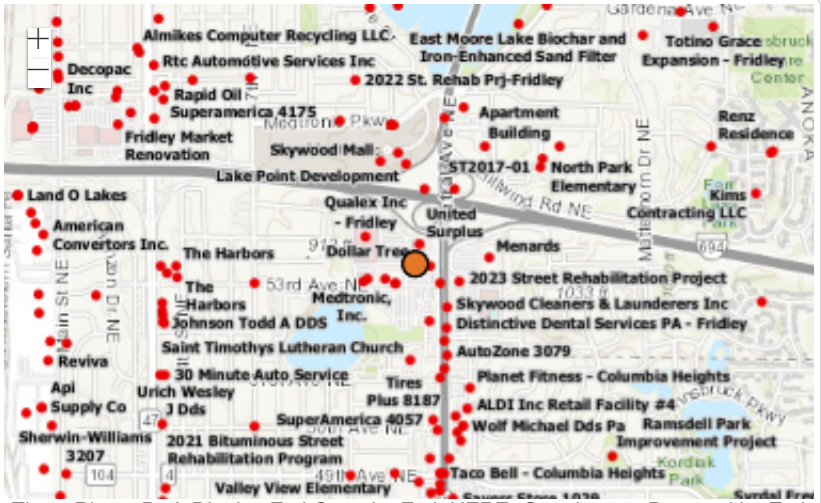
MINNESOTA POLLUTION CONTROL AGENCY

Data

What's in My Neighborhood

Dollar Tree

Location:	775 53rd Ave NE Fridley, MN 55421-1240 Anoka County
Watershed:	Mississippi River - Twin Cities (07010206)
Latitude:	45.065196
Longitude:	-93.249078
Coordinate collection method:	Digitized - MPCA online map
Currently active?	Yes
Institutional controls:	No



Search with a map

Activity overview | MPCA contacts | Alternate names | Owners | Documents (2)

Stormwater

Construction Stormwater - C00060468
Status: Active

When stormwater drains off a construction site, it can carry sediment and pollutants that harm lakes, streams and wetlands. Stormwater permit requirements are designed to control erosion and limit pollution during and after construction.

Less Detail ▲

Events

Event	Start	End
Coverage Issuance	05/21/2021	05/21/2025

Links to additional data sources

CSW Online Permit Data - C00060468

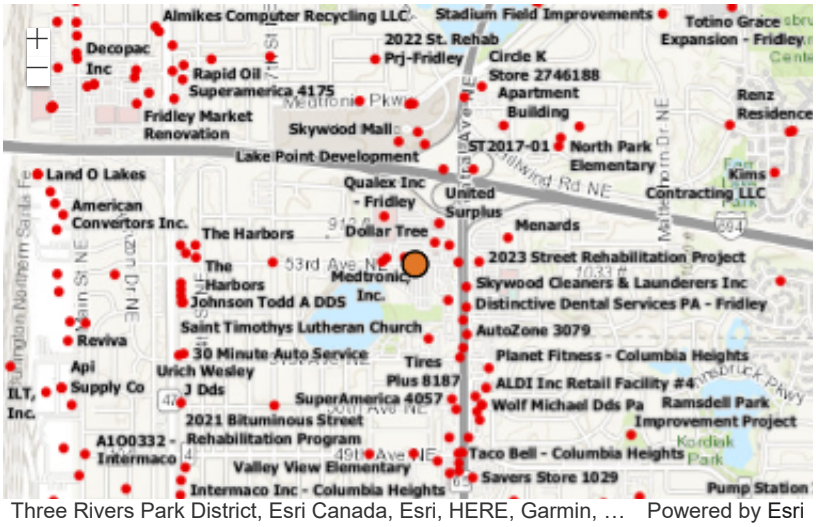
MINNESOTA POLLUTION CONTROL AGENCY

Data

What's in My Neighborhood

S.P. 127-319-006, S.P. 113-118-004

Location:	
	Anoka County
Watershed:	Mississippi River - Twin Cities (07010206)
Latitude:	45.064417
Longitude:	-93.250158
Coordinate collection method:	Digitized - MPCA online map
Currently active?	Yes
Institutional controls:	No



Search with a map

Activity overview | MPCA contacts | Alternate names | Owners | Documents (2)

Stormwater

Construction Stormwater - C00067294

Status: Inactive

When stormwater drains off a construction site, it can carry sediment and pollutants that harm lakes, streams and wetlands. Stormwater permit requirements are designed to control erosion and limit pollution during and after construction.

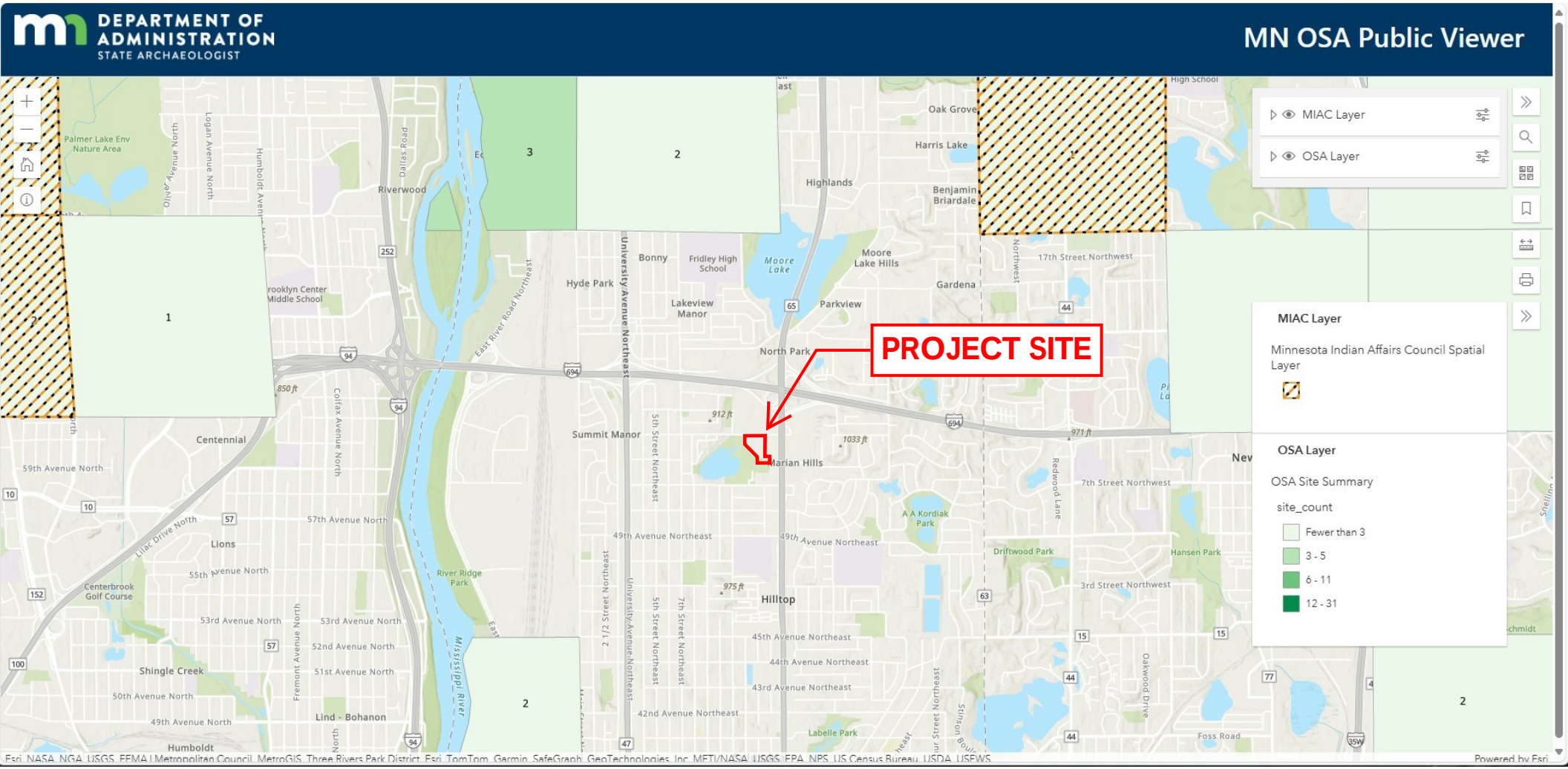
Less Detail ▲

Events

Event	Start	End
Coverage Termination	11/05/2024	11/05/2024
Coverage Issuance	07/11/2023	11/05/2024

Links to additional data sources

CSW Online Permit Data - C00067294



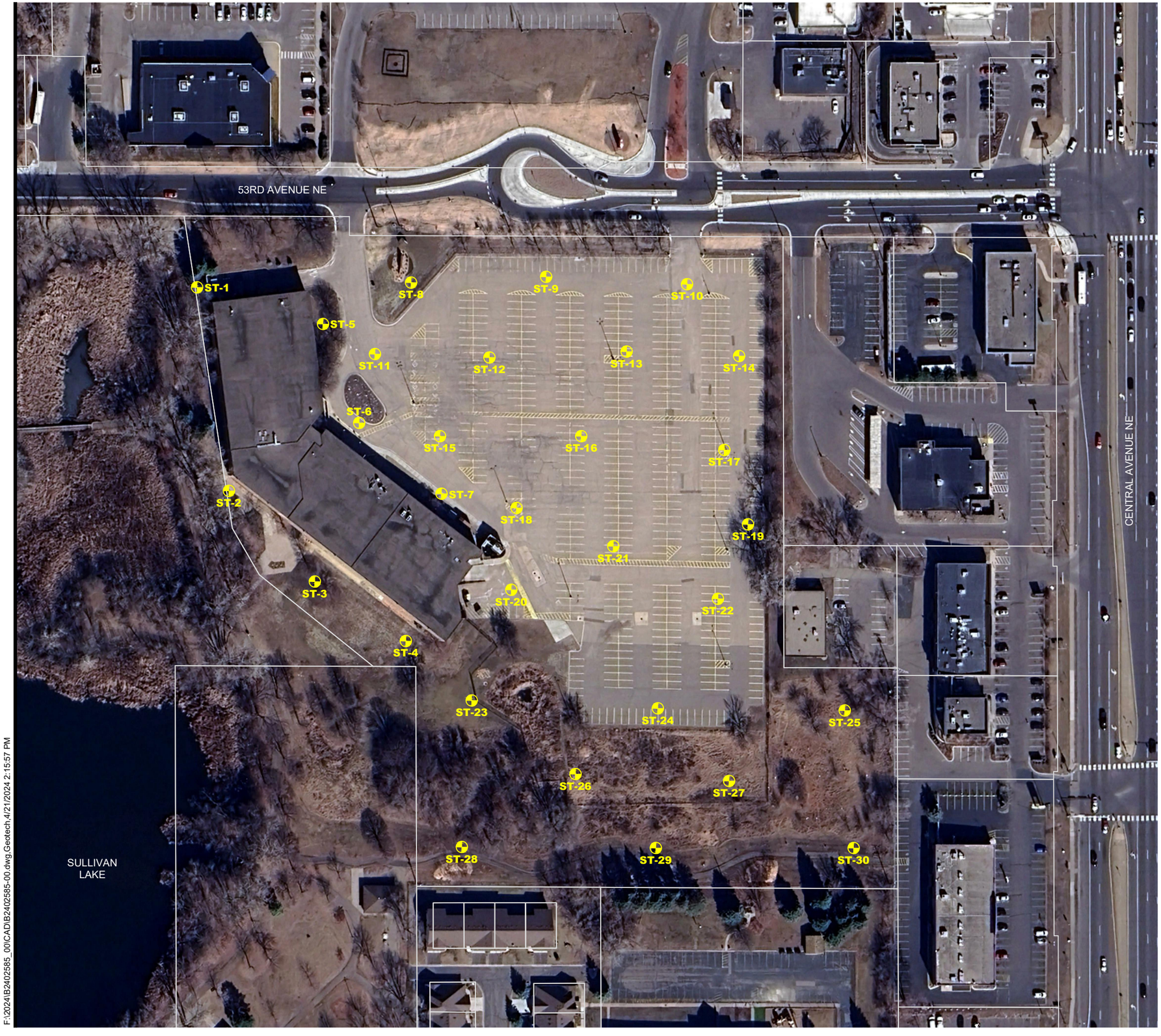
N

STATE ARCHAEOLOGY SURVEY
MN OSA MAP

Figure 20

APPENDIX A

Preliminary Soil Borings
Braun Intertec



DENOTES APPROXIMATE LOCATION OF STANDARD PENETRATION TEST BORING

60' 0 120'

SCALE: 1"= 120'

F:\2024\B2402585_00\CAD\B2402585-00.dwg,Geotech,4/21/2024 2:15:57 PM

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11001 Hampshire Avenue S
Minneapolis, MN 55438
952.995.2000
braunintertec.com

Drawing Information

Project No:	B2402585.00
Drawing No:	B2402585-00
Drawn By:	JAG
Date Drawn:	4/7/24
Checked By:	IB
Last Modified:	4/21/24

Project Information

Columbia Heights Master Development

800 53rd Avenue NE

Columbia Heights, Minnesota

Soil Boring Location Sketch

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LOG OF BORING

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2402585.00
Geotechnical Evaluation
Columbia Heights Master Development
800 53rd Avenue Northeast
Columbia Heights, Minnesota

BORING: **ST-1**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Anoka (US Feet)
NORTHING: 110497.5 EASTING: 503799.4
DRILLER: G. Scallon LOGGED BY: I. Becket START DATE: 04/18/24 END DATE: 04/18/24
SURFACE ELEVATION: 890.4 ft RIG: 7505 METHOD: 3 1/4" HSA SURFACING: Grass WEATHER: Sunny

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
889.9		CLAYEY SAND (SC), with roots, black, moist (TOPSOIL FILL)					
0.5		FILL: SILTY SAND (SM), fine-grained, non to slightly organic, dark brown, moist		2-3-4 (7) 16"		15	OC=2%
886.4							
4.0		SANDY LEAN CLAY (CL), brown, moist, soft (ALLUVIUM) *Trace roots at 5 feet*	5	2-2-2 (4) 15"		20	
883.4							
7.0		CLAYEY SAND (SC), trace Gravel, brown, moist, medium to very stiff (GLACIAL TILL)		2-4-5 (9) 16"	2	14	
			10	3-3-5 (8) 18"	1.5		
				3-6-7 (13) 18"	2.5		
			15	5-5-8 (13) 18"	3.5		
		With Gravel at 20 feet	20	8-8-15 (23) 9"			
869.4							
21.0		END OF BORING					Water not observed while drilling.
		Boring then grouted					
			25				
			30				

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Project Number B2402585.00
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Columbia Heights, Minnesota

BORING: **ST-2**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Anoka (US Feet)
NORTHING: 110267.8 EASTING: 503838.1
DRILLER: G. Scallon LOGGED BY: I. Becket START DATE: 04/18/24 END DATE: 04/18/24
SURFACE ELEVATION: 887.7 ft RIG: 7505 METHOD: 3 1/4" HSA SURFACING: Grass WEATHER: Sunny

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
887.2							
0.5		CLAYEY SAND (SC), with roots, dark brown, moist (TOPSOIL)					
		LEAN CLAY with SAND (CL), reddish brown, moist, stiff (GLACIOFLUVIUM)		4-6-7 (13) 15"	2.5	23	
			5	4-11-12 (23) 17"	>4.5		
				50/6" (REF) 2"			Cobbles and Boulders possible at 8 feet
878.7							
9.0		SILTY SAND (SM), fine to medium-grained, trace Gravel, reddish brown, moist, medium dense to very dense (GLACIAL TILL)	10	36-16-13 (29) 15"			
				50/5" (REF) 0"			Cobbles and Boulders possible at 12 feet
			15	50/6" (REF) 3"			
868.7							
19.0		CLAYEY SAND (SC), trace Gravel, reddish brown, moist, very stiff (GLACIAL TILL)	20	44-10-20 (30) 15"	4		
866.7							
21.0		END OF BORING					Water not observed while drilling.
		Boring then grouted					
			25				
			30				

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Project Number B2402585.00
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Columbia Heights, Minnesota

BORING: **ST-3**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Anoka (US Feet)
NORTHING: 110157.3 EASTING: 503942.6
DRILLER: G. Scallon LOGGED BY: I. Becket START DATE: 04/18/24 END DATE: 04/18/24
SURFACE ELEVATION: 886.9 ft RIG: 7505 METHOD: 3 1/4" HSA SURFACING: Grass WEATHER: Partly Sunny

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
~~886.6~~ 0.3		CLAYEY SAND (SC), with roots, black, moist (TOPSOIL)					
882.9		SANDY LEAN CLAY (CL), trace Gravel, reddish brown, moist, stiff (ALLUVIUM)		4-4-6 (10) 12"		16	
4.0		CLAYEY SAND (SC), trace Gravel, reddish brown, moist, medium to very stiff (GLACIAL TILL)	5	4-3-3 (6) 12"	1	12	
877.9				7-9-9 (18) 18"	4		
9.0		SILTY SAND (SM), fine to medium-grained, trace Gravel, reddish brown, moist, medium dense (GLACIAL TILL)	10	8-10-10 (20) 18"			
874.9							
12.0		LEAN CLAY with GRAVEL (CL), reddish brown, moist, very stiff (GLACIOFLUVIUM)		7-12-12 (24) 14"			
			15	6-9-12 (21) 16"	>4.5		
867.9							
19.0		SILTY SAND (SM), fine to medium-grained, trace Gravel, reddish brown, moist, dense (GLACIAL TILL)	20	6-13-18 (31) 12"			
865.9							
21.0		END OF BORING					Water not observed while drilling.
		Boring then grouted					
			25				
			30				

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Project Number B2402585.00
Geotechnical Evaluation
Columbia Heights Master Development
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Columbia Heights, Minnesota

BORING: **ST-4**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Anoka (US Feet)
NORTHING: 110085.0 EASTING: 504053.4
DRILLER: G. Scallon LOGGED BY: I. Becket START DATE: 04/18/24 END DATE: 04/18/24
SURFACE ELEVATION: 887.1 ft RIG: 7505 METHOD: 3 1/4" HSA SURFACING: Grass WEATHER: Partly Cloudy

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
886.6							
0.5		SANDY LEAN CLAY (CL), with roots, dark brown, moist (TOPSOIL FILL)					
		FILL: SANDY LEAN CLAY (CL), trace Gravel, brown and gray, moist		4-3-3 (6) 12"		12	
883.1							
4.0		CLAYEY SAND (SC), trace roots, brown and gray, moist, soft to medium (ALLUVIUM)	5	1-1-1 (2) 16"		20	
	▼			2-3-4 (7) 12"		24	
			10	1-2-3 (5) 15"	1	23	
875.1							
12.0		LEAN CLAY with SAND (CL), reddish brown, moist, medium to stiff (GLACIOFLUVIUM)		5-5-7 (12) 16"	3		
873.1							
14.0		CLAYEY SAND (SC), trace Gravel, reddish brown, moist, stiff (GLACIAL TILL)	15	6-6-7 (13) 16"	2.5		
	▽						
869.1							
18.0		POORLY GRADED SAND (SP), fine to medium-grained, trace Gravel, brown, wet, medium dense (GLACIAL OUTWASH)	20	4-8-10 (18) 12"			
866.1							
21.0		END OF BORING					Water observed at 16.0 feet while drilling.
		Boring then grouted					Water observed at 8.2 feet in temporary piezometer when rechecked on 05/08/2024.
			25				
			30				

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BORING: **ST-5**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Anoka (US Feet)
NORTHING: 110471.0 EASTING: 503952.7
DRILLER: G. Scallon LOGGED BY: I. Becket START DATE: 04/18/24 END DATE: 04/18/24
SURFACE ELEVATION: 901.6 ft RIG: 7505 METHOD: 3 1/4" HSA SURFACING: Grass WEATHER: Sunny

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
~~901.2~~ 0.4		CLAYEY SAND (SC), with roots, black, moist (TOPSOIL FILL)					
		FILL: SILTY SAND (SM), fine to medium-grained, trace Gravel, brown, gray and dark brown, moist		2-2-2 (4) 8"		12	
			5	3-5-6 (11) 10"			
894.6 7.0		FILL: CLAYEY SAND (SC), trace Gravel, non to slightly organic, brown, gray and dark brown, moist		2-2-7 (9) 11"		13	
			10	1-2-3 (5) 10"			
887.6 14.0		SILTY SAND (SM), fine to medium-grained, brown, moist, medium dense (GLACIAL TILL)		2-6-2 (8) 5"		14	
			15	4-10-6 (16) 9"			
882.6 19.0		CLAYEY SAND (SC), trace Gravel, brown, moist, stiff to very stiff (GLACIAL TILL)					
			20	4-5-6 (11) 16"			
				4-11-11 (22) 18"			
877.1 24.5		END OF BORING Boring then grouted	25				Water not observed while drilling.
			30				

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BORING: **ST-6**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Anoka (US Feet)
NORTHING: 110350.5 EASTING: 503991.8
DRILLER: C. McClain LOGGED BY: I. Becket START DATE: 04/17/24 END DATE: 04/17/24
SURFACE ELEVATION: 896.6 ft RIG: 7514 METHOD: 3 1/4" HSA SURFACING: Bituminous WEATHER: Overcast

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
895.2		PAVEMENT, 6 inches of bituminous over 10 inches of apparent aggregate base					
1.4 892.6		FILL: SILTY SAND (SM), fine to medium-grained, trace Gravel, dark brown, moist		2-7-6 (13) 8"			
4.0 889.6		FILL: CLAYEY SAND (SC), trace Gravel, grayish brown, moist	5	2-2-7 (9) 12"		13	
7.0 884.6		FILL: SILTY SAND (SM), fine to medium-grained, gray, moist *Asphalt debris at 8 feet* *ORGANIC CLAY layer at 10 feet*		10-12-13 (25) 18"			
			10	10-4-3 (7) 14"		18	P200=39%
12.0 878.6		SANDY LEAN CLAY (CL), trace Gravel, brownish brown (ALLUVIUM)		3-3-3 (6) 14"			
			15	2-2-4 (6) 12"			
18.0 868.6		SILTY SAND (SM), fine to medium-grained, with Sand seams, brown and gray, moist, medium dense (GLACIAL OUTWASH)	20	3-6-6 (12) 14"			
			25	6-7-8 (15) 16"			
28.0 864.6	▽	POORLY GRADED SAND with SILT (SP-SM), fine to medium-grained, with Clay seams, brown, wet, medium dense (GLACIAL OUTWASH)	30	2-6-10 (16) 18"			
32.0		Continued on next page					

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Project Number B2402585.00
Geotechnical Evaluation
Columbia Heights Master Development
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Columbia Heights, Minnesota

BORING: **ST-6**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Anoka (US Feet)
NORTHING: 110350.5 EASTING: 503991.8
DRILLER: C. McClain LOGGED BY: I. Becket START DATE: 04/17/24 END DATE: 04/17/24
SURFACE ELEVATION: 896.6 ft RIG: 7514 METHOD: 3 1/4" HSA SURFACING: Bituminous WEATHER: Overcast

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
		SANDY LEAN CLAY (CL), trace Gravel, reddish brown, moist, very stiff to hard (GLACIAL TILL)	35	6-7-10 (17) 18"			
			40	35-19-20 (39) 10"			
855.6 41.0		END OF BORING Boring then grouted					Water observed at 30.0 feet while drilling.
			45				
			50				
			55				
			60				

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Columbia Heights, Minnesota

BORING: **ST-7**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Anoka (US Feet)
NORTHING: 110264.5 EASTING: 504096.9
DRILLER: M. Takada LOGGED BY: I. Becket START DATE: 04/19/24 END DATE: 04/19/24
SURFACE ELEVATION: 892.2 ft RIG: 7505 METHOD: 3 1/4" HSA SURFACING: Grass WEATHER: Cloudy/Sun

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
891.5		CLAYEY SAND (SC), trace roots, dark brown, moist (TOPSOIL FILL)					
0.7		FILL: SILTY SAND (SM), fine to medium-grained, trace Gravel, brown to dark brown, moist		1-3-4 (7) 15"			
		Black CLAY layer at 5 feet	5	7-7-7 (14) 16"		13	OC=2%
				5-6-15 (21) 14"			
		With Limestone fragments at 10 feet	10	6-6-11 (17) 10"		14	
878.2				2-3-3 (6) 0"			No recovery
14.0		LEAN CLAY (CL), light gray, moist, stiff (ALLUVIUM)	15	3-5-5 (10) 16"	0.5	26	
874.2							
18.0		CLAYEY SAND (SC), trace Gravel, brown, wet, soft (ALLUVIUM)	20	1-1-2 (3) 18"		19	
870.2							
22.0		CLAYEY SAND (SC), trace Gravel, reddish brown, moist, stiff (GLACIAL TILL)		3-5-7 (12) 16"			
867.7							
24.5		END OF BORING	25				Water not observed while drilling.
		Boring then grouted					
			30				

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Project Number B2402585.00
Geotechnical Evaluation
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Columbia Heights, Minnesota

BORING: **ST-8**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Anoka (US Feet)
NORTHING: 110521.4 EASTING: 504060.0
DRILLER: M. Takada LOGGED BY: I. Becket START DATE: 04/19/24 END DATE: 04/19/24
SURFACE ELEVATION: 894.9 ft RIG: 7505 METHOD: 3 1/4" HSA SURFACING: Grass WEATHER: Cloudy/Snow

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
894.4							
0.5		CLAYEY SAND (SC), with roots, dark brown, moist (TOPSOIL FILL)					
		FILL: CLAYEY SAND (SC), trace Gravel, non to slightly organic, dark brown, moist		3-3-4 (7) 15"			
5				4-4-4 (8) 16"		17	OC=3%
				5-7-6 (13) 16"			
10				6-7-7 (14) 16"		15	OC=3%
882.9							
12.0		FILL: SILTY SAND (SM), fine-grained, trace Gravel, dark brown, moist		10-8-9 (17) 16"			
880.9							
14.0		FILL: SANDY LEAN CLAY (CL), trace Gravel, brown to dark brown, moist *Trace brick fragments at 15 feet*		10-10-9 (19) 12"		26	
20				7-8-10 (18) 0"			No recovery Possible cobbles below 20 feet
				9-9-10 (19) 3"			
870.4							
24.5		END OF BORING Boring then grouted	25				Water not observed while drilling.
			30				

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Project Number B2402585.00
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BORING: **ST-9**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Anoka (US Feet)
NORTHING: 110528.4 EASTING: 504224.3
DRILLER: C. McClain LOGGED BY: I. Becket START DATE: 04/15/24 END DATE: 04/15/24
SURFACE ELEVATION: 893.4 ft RIG: 7514 METHOD: 3 1/4" HSA SURFACING: Bituminous WEATHER: Clear

Elev./ Depth ft	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
892.4	PAVEMENT, 4 1/2 inches of bituminous over 8 inches of apparent aggregate base					
1.0	FILL: SILTY SAND (SM), fine to medium-grained, brown, moist		3-6-3 (9) 10"			
889.4						
4.0	FILL: LEAN CLAY (CL), trace roots, slightly organic, black, wet	5	1-2-2 (4) 12"		23	OC=4%
886.4						
7.0	CLAYEY SAND (SC), trace Gravel, grayish brown, moist, medium (GLACIAL TILL)		2-2-3 (5) 14"		16	
		10	2-3-4 (7) 16"			
881.4						
12.0	SILTY SAND (SM), fine to medium-grained, trace Gravel, reddish brown, moist, loose to medium dense (GLACIAL TILL)		4-4-5 (9) 14"			
	CLAY layer at 15 feet	15	4-5-15 (20) 14"			
875.4						
18.0	LEAN CLAY (CL), reddish brown, moist, very stiff (GLACIOFLUVIUM)	20	4-7-9 (16) 18"			
871.4						
22.0	POORLY GRADED SAND (SP), fine to medium-grained, brown, moist, medium dense (GLACIAL OUTWASH)		8-12-14 (26) 18"			
868.9						
24.5	END OF BORING	25				Water not observed while drilling.
	Boring then grouted					
		30				

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See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2402585.00
Geotechnical Evaluation
Columbia Heights Master Development
800 53rd Avenue Northeast
Columbia Heights, Minnesota

BORING: **ST-10**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Anoka (US Feet)
NORTHING: 110519.3 EASTING: 504395.9
DRILLER: C. McClain LOGGED BY: I. Becket START DATE: 04/15/24 END DATE: 04/15/24
SURFACE ELEVATION: 893.6 ft RIG: 7514 METHOD: 3 1/4" HSA SURFACING: Bituminous WEATHER: Clear

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
892.4		PAVEMENT, 4 1/2 inches of bituminous over 10 inches of apparent aggregate base					
1.2		FILL: POORLY GRADED SAND with SILT (SP-SM), fine to medium-grained, trace Gravel, brown, moist		2-3-3 (6) 12"			
889.6							
4.0		LEAN CLAY (CL), with Sand, and roots, grayish brown, moist, medium (ALLUVIUM)	5	1-2-4 (6) 12"	1.5	27	
886.6							
7.0		SILTY SAND (SM), fine-grained, trace Gravel, reddish brown, moist, medium dense (GLACIAL TILL)		4-7-13 (20) 14"			
884.6							
9.0		LEAN CLAY (CL), brown, moist, stiff to very stiff (GLACIOFLUVIUM)	10	6-8-8 (16) 14"		22	
		Sand seams at 13 feet		2-6-9 (15) 16"			
			15	3-5-5 (10) 14"			
875.6							
18.0	▽	POORLY GRADED SAND with SILT (SP-SM), fine to medium-grained, trace Gravel, brown to reddish brown, wet, medium dense (GLACIAL OUTWASH)	20	5-13-12 (25) 12"			
				6-8-8 (16) 16"			
869.1							
24.5		END OF BORING	25				Water observed at 18.0 feet while drilling.
		Boring then grouted					
			30				

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Project Number B2402585.00
Geotechnical Evaluation
Columbia Heights Master Development
800 53rd Avenue Northeast
Columbia Heights, Minnesota

BORING: **ST-11**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Anoka (US Feet)
NORTHING: 110434.5 EASTING: 504015.9
DRILLER: C. McClain LOGGED BY: I. Becket START DATE: 04/17/24 END DATE: 04/17/24
SURFACE ELEVATION: 895.7 ft RIG: 7514 METHOD: 3 1/4" HSA SURFACING: Bituminous WEATHER: Overcast

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
894.5		PAVEMENT, 5 inches of bituminous over 9 inches of apparent aggregate base					
1.2		FILL: SILTY SAND (SM), fine to medium-grained, trace Gravel, dark brown, moist		6-10-10 (20) 14"		8	
891.7							
4.0		FILL: CLAYEY SAND (SC), trace Gravel, non to slightly organic, dark brown, moist	5	13-8-8 (16) 14"		12	OC=2%
888.7							
7.0		FILL: SILTY SAND (SM), fine to medium-grained, trace to with Gravel, brown to gray, moist		10-12-11 (23) 12"			
			10	26-13-14 (27) 0"			Possible cobbles at 10 feet No recovery
				5-4-5 (9) 16"			
881.7							
14.0		SILTY SAND (SM), fine to medium-grained, with Clay seams, trace Gravel, brown, moist, loose (GLACIAL TILL)	15	2-4-6 (10) 18"			
876.7							
19.0		POORLY GRADED SAND with SILT (SP-SM), fine to medium-grained, with Gravel, light brown, moist, medium dense (GLACIAL OUTWASH)	20	6-10-13 (23) 12"			
873.7							
22.0		SILTY SAND (SM), fine to medium-grained, with Clay lenses, trace Gravel, brown, moist, medium dense (GLACIAL TILL)		9-9-11 (20) 18"			
871.2							
24.5		END OF BORING Boring then grouted	25				Water not observed while drilling.
			30				

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LOG OF BORING

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2402585.00
Geotechnical Evaluation
Columbia Heights Master Development
800 53rd Avenue Northeast
Columbia Heights, Minnesota

BORING: **ST-12**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Anoka (US Feet)
NORTHING: 110430.1 EASTING: 504155.2
DRILLER: C. McClain LOGGED BY: I. Becket START DATE: 04/15/24 END DATE: 04/15/24
SURFACE ELEVATION: 894.2 ft RIG: 7514 METHOD: 3 1/4" HSA SURFACING: Bituminous WEATHER: Clear

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
892.9		PAVEMENT, 2 1/2 inches of bituminous over 13 inches of apparent aggregate base					
1.3		FILL: CLAYEY SAND (SC), with Gravel, dark brown, moist		3-6-9 (15) 14"		8	
890.2							
4.0		FILL: SILTY SAND (SM), fine to medium-grained, trace Gravel, brown to dark brown, moist	5	6-7-12 (19) 14"		9	P200=28%
				5-6-11 (17) 16"		11	
885.2							
9.0		FILL: CLAYEY SAND (SC), trace Gravel, dark brown, moist	10	3-5-6 (11) 18"			
				4-6-8 (14) 16"		9	
880.2							
14.0		SANDY LEAN CLAY (CL), brown, moist, stiff (GLACIOFLUVIUM)	15	2-4-7 (11) 16"	2.5		
876.2							
18.0		SANDY LEAN CLAY (CL), trace Gravel, brown to gray, moist, stiff to very stiff (GLACIAL TILL)	20	3-4-5 (9) 18"			
				5-6-13 (19) 18"			
869.7							
24.5		END OF BORING Boring then grouted	25				Water not observed while drilling.
			30				

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See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2402585.00
Geotechnical Evaluation
Columbia Heights Master Development
800 53rd Avenue Northeast
Columbia Heights, Minnesota

BORING: **ST-13**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Anoka (US Feet)
NORTHING: 110432.4 EASTING: 504322.2
DRILLER: C. McClain LOGGED BY: I. Becket START DATE: 04/15/24 END DATE: 04/15/24
SURFACE ELEVATION: 893.4 ft RIG: 7514 METHOD: 3 1/4" HSA SURFACING: Bituminous WEATHER: Clear

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
892.2		PAVEMENT, 5 inches of bituminous over 11 inches of apparent aggregate base					
1.2		FILL: CLAYEY SAND (SC), non to slightly organic, dark brown, moist		2-4-7 (11) 12"		12	OC=3%
889.4							
4.0		FILL: SILTY SAND (SM), fine to medium-grained, trace Gravel, reddish brown, moist	5	9-6-8 (14) 12"		12	
886.4							
7.0		POORLY GRADED SAND with SILT (SP-SM), fine to medium-grained, trace Gravel, brown, moist to wet, medium dense to dense (GLACIAL OUTWASH)		12-10-11 (21) 14"			
		CLAY layers at 10 feet	10	7-6-10 (16) 14"			
				10-18-17 (35) 16"		6	P200=10%
	▽	*Wet at 15 feet*	15	11-8-11 (19) 14"			
875.4							
18.0		CLAYEY SAND (SC), trace Gravel, reddish brown, moist, very stiff (GLACIAL TILL)	20	10-11-13 (24) 16"			
870.4							
23.0		LEAN CLAY (CL), with Sand seams, reddish brown, moist, hard (GLACIOFLUVIUM)	25	10-15-20 (35) 18"			
865.4							
28.0		SILTY SAND (SM), fine to medium-grained, trace Gravel, reddish brown, moist to wet, medium dense to very dense (GLACIAL TILL)	30	12-14-12 (26) 14"			

Continued on next page

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See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2402585.00
Geotechnical Evaluation
Columbia Heights Master Development
800 53rd Avenue Northeast
Columbia Heights, Minnesota

BORING: **ST-13**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Anoka (US Feet)
NORTHING: 110432.4 EASTING: 504322.2
DRILLER: C. McClain LOGGED BY: I. Becket START DATE: 04/15/24 END DATE: 04/15/24
SURFACE ELEVATION: 893.4 ft RIG: 7514 METHOD: 3 1/4" HSA SURFACING: Bituminous WEATHER: Clear

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
		SILTY SAND (SM), fine to medium-grained, trace Gravel, reddish brown, moist to wet, medium dense to very dense (GLACIAL TILL)	35	10-12-14 (26) 12"			
		Wet at 40 feet	40	50/4" (REF) 2"			
852.4							
41.0		END OF BORING					Water observed at 15.0 feet while drilling.
		Boring then grouted					
			45				
			50				
			55				
			60				

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Project Number B2402585.00
Geotechnical Evaluation
Columbia Heights Master Development
800 53rd Avenue Northeast
Columbia Heights, Minnesota

BORING: **ST-14**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Anoka (US Feet)
NORTHING: 110431.9 EASTING: 504459.2
DRILLER: C. McClain LOGGED BY: I. Becket START DATE: 04/16/24 END DATE: 04/16/24
SURFACE ELEVATION: 892.9 ft RIG: 7514 METHOD: 3 1/4" HSA SURFACING: Bituminous WEATHER: Overcast/Rain

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
891.7		PAVEMENT, 4 inches of bituminous over 10 inches of apparent aggregate base					
1.2		FILL: POORLY GRADED SAND with SILT (SP-SM), fine to medium-grained, brown, moist		4-5-5 (10) 12"			
888.9							
4.0		FILL: LEAN CLAY (CL), trace Gravel, and roots, slightly organic, black, moist	5	2-4-6 (10) 14"		15	OC=3%
885.9							
7.0		SILTY SAND (SM), fine to medium-grained, trace Gravel, brown, moist, loose (GLACIAL TILL)		3-4-5 (9) 12"		11	
883.9							
9.0	▽	POORLY GRADED SAND with SILT (SP-SM), fine to medium-grained, trace Gravel, brown, moist to wet, loose (GLACIAL OUTWASH) *Clay seams at 10 feet*	10	2-3-6 (9) 14"			
				3-6-4 (10) 12"		12	Wet at 12 feet
			15	4-4-3 (7) 12"			
874.9							
18.0		CLAYEY SAND (SC), trace Gravel, reddish brown, moist, very stiff to hard (GLACIAL TILL)	20	7-10-13 (23) 16"			
				50/5" (REF) 4"			
868.4							
24.5		END OF BORING Boring then grouted	25				Water observed at 12.0 feet while drilling.
			30				

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Project Number B2402585.00
Geotechnical Evaluation
Columbia Heights Master Development
800 53rd Avenue Northeast
Columbia Heights, Minnesota

BORING: **ST-15**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Anoka (US Feet)
NORTHING: 110334.3 EASTING: 504095.2
DRILLER: C. McClain LOGGED BY: I. Becket START DATE: 04/17/24 END DATE: 04/17/24
SURFACE ELEVATION: 893.6 ft RIG: 7514 METHOD: 3 1/4" HSA SURFACING: Bituminous WEATHER: Overcast

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
892.9		PAVEMENT, 4 inches of bituminous over 4.5 inches of apparent aggregate base					
0.7		FILL: SILTY SAND (SM), fine to medium-grained, trace roots, non to slightly organic, dark brown and brown, moist		2-5-7 (12) 12"			
			5	9-9-10 (19) 18"		9	
		Clay seams and trace roots at 8 feet		8-8-7 (15) 18"		14	OC=2%
			10	3-6-7 (13) 16"			
881.1				2-3-5 (8) 18"			
12.5		LEAN CLAY (CL), with Sand, brown, moist, medium (ALLUVIUM)					
879.6							
14.0		CLAYEY SAND (SC), trace Gravel, gray and brown, moist, medium to stiff (GLACIAL TILL)	15	3-3-3 (6) 16"			
			20	2-3-6 (9) 16"			
871.6							
22.0		SILTY SAND (SM), fine to medium-grained, trace Gravel, reddish brown, moist, medium dense (GLACIAL TILL)		6-10-14 (24) 18"			
869.1							
24.5		END OF BORING	25				Water not observed while drilling.
		Boring then grouted					
			30				

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Project Number B2402585.00
Geotechnical Evaluation
Columbia Heights Master Development
800 53rd Avenue Northeast
Columbia Heights, Minnesota

BORING: **ST-16**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Anoka (US Feet)
NORTHING: 110334.4 EASTING: 504267.2
DRILLER: C. McClain LOGGED BY: I. Becket START DATE: 04/17/24 END DATE: 04/17/24
SURFACE ELEVATION: 891.3 ft RIG: 7514 METHOD: 3 1/4" HSA SURFACING: Bituminous WEATHER: Overcasr

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
890.0		PAVEMENT, 4 inches of bituminous over 12 inches of apparent aggregate base					
1.3		FILL: SILTY SAND (SM), fine to medium-grained, trace Gravel, brown to dark brown, moist		6-8-11 (19) 16"		8	
		Clay seams at 5 feet	5	3-8-11 (19) 14"			
884.3							
7.0		FILL: SANDY LEAN CLAY (CL), brown and gray, moist		4-4-7 (11) 16"			
882.3							
9.0		CLAYEY SAND (SC), with Sand seams, light gray, moist (GLACIAL TILL)	10	4-5-6 (11) 18"		16	
879.3							
12.0		SILTY SAND (SM), fine to medium-grained, with Clay seams, brown, moist, medium dense (GLACIAL TILL)		5-12-17 (29) 18"			
877.3							
14.0		CLAYEY SAND (SC), trace Gravel, reddish brown, moist, stiff to very stiff (GLACIAL TILL)	15	5-7-11 (18) 18"			
			20	6-6-5 (11) 14"			
				10-10-5 (15) 18"			
866.8							
24.5		END OF BORING Boring then grouted	25				Water not observed while drilling.
			30				

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Project Number B2402585.00
Geotechnical Evaluation
Columbia Heights Master Development
800 53rd Avenue Northeast
Columbia Heights, Minnesota

BORING: **ST-17**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Anoka (US Feet)
NORTHING: 110325.7 EASTING: 504441.3
DRILLER: C. McClain LOGGED BY: I. Becket START DATE: 04/16/24 END DATE: 04/16/24
SURFACE ELEVATION: 891.5 ft RIG: 7514 METHOD: 3 1/4" HSA SURFACING: Bituminous WEATHER: Overcast/Rain

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
890.2		PAVEMENT, 5 inches of bituminous over 10 inches of apparent aggregate base					
1.3		FILL: SILTY SAND (SM), fine to medium-grained, non to slightly organic, black, moist		4-7-6 (13) 14"		10	OC=2%
			5	6-12-10 (22) 6"			
884.5							
7.0		SANDY LEAN CLAY (CL), trace Gravel, grayish brown, moist, stiff (GLACIAL TILL)		3-5-4 (9) 14"		18	
882.5							
9.0		CLAYEY SAND (SC), trace Gravel, reddish brown, moist, stiff (GLACIAL TILL)	10	2-5-5 (10) 12"		13	
879.5							
12.0		SILTY SAND (SM), fine to medium-grained, trace Gravel, reddish brown, moist, loose to very dense (GLACIAL TILL)		2-4-6 (10) 14"			
			15	7-8-8 (16) 14"			
			20	50/5" (REF) 2"			
				20-20-17 (37) 16"			
867.0							
24.5		END OF BORING Boring then grouted	25				Water not observed while drilling.
			30				

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LOG OF BORING

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2402585.00
Geotechnical Evaluation
Columbia Heights Master Development
800 53rd Avenue Northeast
Columbia Heights, Minnesota

BORING: **ST-18**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Anoka (US Feet)
NORTHING: 110265.0 EASTING: 504188.3
DRILLER: C. McClain LOGGED BY: I. Becket START DATE: 04/17/24 END DATE: 04/17/24
SURFACE ELEVATION: 889.1 ft RIG: 7514 METHOD: 3 1/4" HSA SURFACING: Bituminous WEATHER: Overcast

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
888.1		PAVEMENT, 4 1/2 inches of bituminous over 8 inches of apparent aggregate base					
1.0		FILL: SILTY SAND (SM), fine to medium-grained, trace Gravel, brown, moist		4-8-10 (18) 16"		6	
			5	15-12-11 (23) 0"			
882.1							
7.0		SANDY LEAN CLAY (CL), trace Gravel, brown, moist, stiff (GLACIAL TILL)		5-6-5 (11) 14"			
			10	4-5-9 (14) 16"		12	
877.1							
12.0		SILTY SAND (SM), fine-grained, trace Gravel, reddish brown, moist, medium dense (GLACIAL TILL)		7-11-10 (21) 18"			
875.1							
14.0		LEAN CLAY (CL), with Sand, and Silt lenses, brown, moist, very stiff (GLACIOFLUVIUM)	15	5-10-10 (20) 16"			
	▽						
870.1							
19.0		POORLY GRADED SAND (SP), fine to medium-grained, brown, wet, loose (GLACIAL OUTWASH)	20	1-5-5 (10) 16"			
867.1							
22.0		SILTY SAND (SM), fine-grained, trace Gravel, reddish brown, wet, loose (GLACIAL TILL)		2-4-6 (10) 18"			
864.6							
24.5		END OF BORING	25				Water observed at 17.0 feet while drilling.
		Boring then grouted					
			30				

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Project Number B2402585.00
Geotechnical Evaluation
Columbia Heights Master Development
800 53rd Avenue Northeast
Columbia Heights, Minnesota

BORING: **ST-19**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Anoka (US Feet)
NORTHING: 110227.0 EASTING: 504470.1
DRILLER: C. McClain LOGGED BY: I. Becket START DATE: 04/16/24 END DATE: 04/16/24
SURFACE ELEVATION: 891.0 ft RIG: 7514 METHOD: 3 1/4" HSA SURFACING: Bituminous WEATHER: Rain

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
890.0		PAVEMENT, 4 1/2 inches of bituminous over 8 inches of apparent aggregate base					
1.0		FILL: CLAYEY SAND (SC), trace Gravel, non to slightly organic, dark brown, moist		5-5-6 (11) 14"		12	OC=2%
887.0							
4.0		CLAYEY SAND (SC), with Sand seams, trace Gravel, brown, moist, stiff to very stiff (GLACIAL TILL)	5	6-5-6 (11) 12"			
				6-9-9 (18) 16"		14	
882.0							
9.0		SILTY SAND (SM), fine to medium-grained, trace Gravel, reddish brown, moist, medium dense to dense (GLACIAL TILL) *Clay seams at 10 feet*	10	6-12-20 (32) 16"			
				11-11-12 (23) 14"			
			15	6-8-10 (18) 16"			
872.0							
19.0		POORLY GRADED SAND with SILT (SP-SM), fine to medium-grained, trace Gravel, reddish brown, moist, medium dense to dense (GLACIAL OUTWASH)	20	10-14-12 (26) 16"			
				10-20-15 (35) 16"			
866.5							
24.5		END OF BORING Boring then grouted	25				Water not observed while drilling.
			30				

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See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2402585.00
Geotechnical Evaluation
Columbia Heights Master Development
800 53rd Avenue Northeast
Columbia Heights, Minnesota

BORING: **ST-20**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Anoka (US Feet)
NORTHING: 110147.4 EASTING: 504181.9
DRILLER: M. Takada LOGGED BY: I. Becket START DATE: 04/19/24 END DATE: 04/19/24
SURFACE ELEVATION: 886.3 ft RIG: 7505 METHOD: 3 1/4" HSA SURFACING: Bituminous WEATHER: Cloudy

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
~~885.9~~		PAVEMENT, 5 inches of bituminous					
0.4		FILL: SILTY SAND (SM), fine to medium-grained, trace Gravel, dark brown, moist		3-9-12 (21) 16"			
		Asphalt debris at 3 feet					
		Slightly organic at 5 feet	5	1-2-2 (4) 15"		19	OC=3%
879.3							
7.0		CLAYEY SAND (SC), trace Gravel, reddish brown, moist, stiff (GLACIAL TILL)		4-5-6 (11) 16"	2		
			10	8-7-8 (15) 0"			
873.8	▽			3-4-5 (9) 14"			Wet at 12 feet
12.5		POORLY GRADED SAND with SILT (SP-SM), fine to medium-grained, brown, wet, loose to medium dense (GLACIAL OUTWASH)	15	15-10-8 (18) 0"			
			20	3-9-5 (14) 12"			
864.3							
22.0		SILTY SAND (SM), fine to medium-grained, trace Gravel, reddish brown, moist, loose (GLACIAL TILL)		3-4-4 (8) 18"			
861.8							
24.5		END OF BORING	25				Water observed at 12.5 feet while drilling.
		Boring then grouted					
			30				

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See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2402585.00
Geotechnical Evaluation
Columbia Heights Master Development
800 53rd Avenue Northeast
Columbia Heights, Minnesota

BORING: **ST-21**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Anoka (US Feet)
NORTHING: 110200.5 EASTING: 504306.2
DRILLER: K. Caudill LOGGED BY: I. Becket START DATE: 04/19/24 END DATE: 04/19/24
SURFACE ELEVATION: 888.2 ft RIG: 75011 METHOD: 3 1/4" HSA SURFACING: Bituminous WEATHER: Cloudy

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
886.9		PAVEMENT, 4 inches of bituminous over 12 inches of apparent aggregate base					
1.3		FILL: SILTY SAND (SM), fine-grained, grayish brown to dark brown, moist		11-8-9 (17) 12"			
			5	2-2-5 (7) 12"		13	
				3-3-3 (6) 4"		12	OC=2%
879.2							
9.0		POORLY GRADED SAND (SP), fine to medium-grained, trace Gravel, brown, moist to wet, loose (GLACIAL OUTWASH)	10	4-4-6 (10) 12"			
	▽			2-2-4 (6) 12"		11	Wet at 13 feet
		Clay seams at 13 feet					
874.2							
14.0		SILTY SAND (SM), fine to medium-grained, trace Gravel, reddish brown, moist, medium dense (GLACIAL TILL)	15	6-8-8 (16) 12"			
869.2							
19.0		POORLY GRADED SAND with SILT (SP-SM), fine to medium-grained, trace Gravel, Clay seams and layers, brown, moist, medium dense (GLACIAL OUTWASH)	20	10-10-11 (21) 14"			
				6-9-10 (19) 12"			
863.7							
24.5		END OF BORING	25				Water observed at 13.0 feet while drilling.
		Boring then grouted					
			30				

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Project Number B2402585.00
Geotechnical Evaluation
Columbia Heights Master Development
800 53rd Avenue Northeast
Columbia Heights, Minnesota

BORING: **ST-22**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Anoka (US Feet)
NORTHING: 110136.3 EASTING: 504433.4
DRILLER: C. McClain LOGGED BY: I. Becket START DATE: 04/16/24 END DATE: 04/16/24
SURFACE ELEVATION: 889.4 ft RIG: 7514 METHOD: 3 1/4" HSA SURFACING: Bituminous WEATHER: Rain

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
888.5		PAVEMENT, 4 inches of bituminous over 7 inches of apparent aggregate base					
0.9		FILL: SANDY LEAN CLAY (CL), trace roots, and Gravel, slightly organic, dark brown, moist		2-3-4 (7) 12"			
			5	4-3-2 (5) 14"		20	OC=2%
882.4							
7.0		FILL: SANDY LEAN CLAY (CL), with Sand seams, gray, moist		2-2-3 (5) 12"		19	
880.4							
9.0		SILTY SAND (SM), fine to medium-grained, trace Gravel, reddish brown, moist, medium dense (GLACIAL TILL)	10	3-10-7 (17) 14"			
		Sand seams at 10 feet		7-10-12 (22) 14"			
			15	6-10-8 (18) 16"			
870.4							
19.0		POORLY GRADED SAND with SILT (SP-SM), fine to medium-grained, trace Gravel, reddish brown, moist to wet, medium dense (GLACIAL OUTWASH)	20	6-11-10 (21) 14"			
	▽	*Wet at 23 feet*		5-10-8 (18) 18"			
864.9							
24.5		END OF BORING	25				Water observed at 23.0 feet while drilling.
		Boring then grouted					
			30				

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LOG OF BORING

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2402585.00
Geotechnical Evaluation
Columbia Heights Master Development
800 53rd Avenue Northeast
Columbia Heights, Minnesota

BORING: **ST-23**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Anoka (US Feet)
NORTHING: 110012.7 EASTING: 504133.8
DRILLER: G. Scallon LOGGED BY: I. Becket START DATE: 04/18/24 END DATE: 04/18/24
SURFACE ELEVATION: 887.1 ft RIG: 7505 METHOD: 3 1/4" HSA SURFACING: Grass WEATHER: Cloudy

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
886.4		CLAYEY SAND (SC), trace Gravel, dark brown, moist (TOPSOIL FILL)					
0.7		FILL: CLAYEY SAND (SC), trace Gravel, dark brown to gray, moist		2-3-4 (7) 15"		14	
		Asphalt debris at 5 feet	5	1-2-2 (4) 12"			
880.1							
7.0		FILL: SILTY SAND (SM), fine to medium-grained, with Gravel, brown, moist		10-9-9 (18) 3"		10	
878.1							
9.0		CLAYEY SAND (SC), trace Gravel, brown, moist (ALLUVIUM)	10	2-3-3 (6) 12"	0.5		
875.1							
12.0	▽	SILTY SAND (SM), fine to medium-grained, trace to with Gravel, brown to reddish brown, wet, medium dense to very dense (GLACIAL TILL)		7-7-8 (15) 12"			Wet at 12 feet
			15	2-5-8 (13) 14"		20	P200=26%
			20	4-8-6 (14) 16"			
				33-38-19 (57) 12"			
862.6							
24.5		END OF BORING Boring then grouted	25				Water observed at 12.5 feet while drilling.
			30				

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Geotechnical Evaluation
Columbia Heights Master Development
800 53rd Avenue Northeast
Columbia Heights, Minnesota

BORING: **ST-24**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Anoka (US Feet)
NORTHING: 110003.0 EASTING: 504360.3
DRILLER: K. Caudill LOGGED BY: I. Becket START DATE: 04/19/24 END DATE: 04/19/24
SURFACE ELEVATION: 887.9 ft RIG: 75011 METHOD: 3 1/4" HSA SURFACING: Bituminous WEATHER: Cloudy

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
886.9		PAVEMENT, 2 1/2 inches of bituminous over 10 inches of apparent aggregate base					
1.0		ORGANIC CLAY (OL), black, wet (SWAMP DEPOSIT)		1-2-4 (6) 12"		62	
883.9							
4.0		PEAT (PT), black, wet (SWAMP DEPOSIT)	5	2-1-2 (3) 14"			
880.9							
7.0		CLAYEY SAND (SC), with Sand seams, trace Gravel, reddish brown, moist, stiff (GLACIAL TILL)		3-5-7 (12) 14"		11	
			10	5-7-12 (19) 14"			
875.9							
12.0		SILTY SAND (SM), fine to medium-grained, trace Gravel, reddish brown, moist, medium dense to dense (GLACIAL TILL)		7-13-14 (27) 14"		9	
			15	7-14-18 (32) 12"			
			20	10-7-9 (16) 14"			
865.9							
22.0		POORLY GRADED SAND with SILT (SP-SM), fine to coarse-grained, trace Gravel, reddish brown, wet, dense (GLACIAL OUTWASH)		8-15-17 (32) 14"			
863.4							
24.5		END OF BORING	25				Water not observed while drilling.
		Boring then grouted					
			30				

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Geotechnical Evaluation
Columbia Heights Master Development
800 53rd Avenue Northeast
Columbia Heights, Minnesota

BORING: **ST-25**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Anoka (US Feet)
NORTHING: 110000.4 EASTING: 504587.9
DRILLER: K. Caudill LOGGED BY: I. Becket START DATE: 04/18/24 END DATE: 04/18/24
SURFACE ELEVATION: 894.0 ft RIG: 75011 METHOD: 3 1/4" HSA SURFACING: Grass WEATHER: Cloudy

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
893.2		LEAN CLAY (CL), with roots, black, moist (TOPSOIL)					
0.8		CLAYEY SAND (SC), trace Gravel, brown, moist, medium (GLACIAL TILL) *Trace roots at 2 1/2 feet*		1-2-3 (5) 14"		16	
			5	2-3-5 (8) 12"	0.75		
				5-3-4 (7) 12"		11	
		Sand seams at 10 feet	10	2-3-5 (8) 14"	1		
882.0							
12.0		SILTY SAND (SM), fine to medium-grained, reddish brown, moist, medium dense (GLACIAL TILL)		3-12-13 (25) 12"			
			15	10-10-12 (22) 12"			
875.0							
19.0		POORLY GRADED SAND (SP), fine to medium-grained, trace Gravel, brown, moist, medium dense (GLACIAL OUTWASH)	20	4-8-11 (19) 10"			
872.0							
22.0		SILTY SAND (SM), fine to medium-grained, with Gravel, reddish brown, moist, medium dense (GLACIAL TILL)		9-14-15 (29) 12"			
869.5							
24.5		END OF BORING	25				Water not observed while drilling.
		Boring then grouted					
			30				

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Project Number B2402585.00
Geotechnical Evaluation
Columbia Heights Master Development
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Columbia Heights, Minnesota

BORING: **ST-26**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Anoka (US Feet)
NORTHING: 109923.1 EASTING: 504260.0
DRILLER: K. Caudill LOGGED BY: I. Becket START DATE: 04/18/24 END DATE: 04/18/24
SURFACE ELEVATION: 886.4 ft RIG: 75011 METHOD: 3 1/4" HSA SURFACING: Grass WEATHER: Cloudy

Elev./ Depth ft	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
884.4	ORGANIC CLAY (OL), black, moist (TOPSOIL)					
2.0 882.4	ORGANIC CLAY (OL), black, wet (SWAMP DEPOSIT)		2-2-2 (4) 10"		85	OC=16%
4.0 879.4	POORLY GRADED SAND with SILT (SP-SM), fine to medium-grained, brown, moist, loose (ALLUVIUM)	5	3-3-4 (7) 12"		14	
7.0 872.4	SILTY SAND (SM), fine to medium-grained, trace Gravel, reddish brown, moist, medium dense to dense (GLACIAL TILL)		8-12-14 (26) 12"			
		10	8-10-14 (24) 14"		10	
			12-17-18 (35) 14"			
14.0 868.4	POORLY GRADED SAND (SP), fine to medium-grained, trace Gravel, brown, dry, medium dense (GLACIAL OUTWASH)	15	9-12-17 (29) 14"			
18.0 861.9	SILTY SAND (SM), fine to medium-grained, trace Gravel, reddish brown, moist, medium dense to dense (GLACIAL TILL)	20	7-8-8 (16) 12"			
			12-15-17 (32) 8"			
24.5	END OF BORING Boring then grouted	25				Water not observed while drilling.
		30				

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Project Number B2402585.00
Geotechnical Evaluation
Columbia Heights Master Development
800 53rd Avenue Northeast
Columbia Heights, Minnesota

BORING: **ST-27**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Anoka (US Feet)
NORTHING: 109914.6 EASTING: 504447.0
DRILLER: M. Takada LOGGED BY: I. Becket START DATE: 04/18/24 END DATE: 04/18/24
SURFACE ELEVATION: 889.5 ft RIG: 75011 METHOD: 3 1/4" HSA SURFACING: Grass WEATHER: Cloudy

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
888.2		CLAYEY SAND (SC), with roots, dark brown, moist (TOPSOIL FILL)					
1.3		FILL: SANDY LEAN CLAY (CL), trace Gravel, brown to dark brown, moist		1-2-4 (6) 14"		15	
885.5							
4.0		PEAT (PT), black, wet (SWAMP DEPOSIT)	5	2-2-3 (5) 12"			
				2-1-2 (3) 14"		138	OC=28%
880.5							
9.0	▽	POORLY GRADED SAND with SILT (SP-SM), fine to medium-grained, with Gravel, brown, dry to moist, loose to medium dense (GLACIAL OUTWASH)	10	19-13-11 (24) 10"		4	P200=8%
				3-5-5 (10) 14"			Wet at 12 1/2 feet
			15	12-9-8 (17) 14"			
870.5							
19.0		SILTY SAND (SM), fine to medium-grained, trace Gravel, reddish brown, moist, medium dense to very dense (GLACIAL TILL)	20	5-8-15 (23) 12"			
		Clay seams at 25 feet	25	10-12-13 (25) 14"			
			30	18-23-28 (51) 14"			

Continued on next page

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Project Number B2402585.00
Geotechnical Evaluation
Columbia Heights Master Development
800 53rd Avenue Northeast
Columbia Heights, Minnesota

BORING: **ST-27**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Anoka (US Feet)
NORTHING: 109914.6 EASTING: 504447.0
DRILLER: M. Takada LOGGED BY: I. Becket START DATE: 04/18/24 END DATE: 04/18/24
SURFACE ELEVATION: 889.5 ft RIG: 75011 METHOD: 3 1/4" HSA SURFACING: Grass WEATHER: Cloudy

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
		SILTY SAND (SM), fine to medium-grained, trace Gravel, reddish brown, moist, medium dense to very dense (GLACIAL TILL)					
			35	10-27-30 (57)			
			40	17-30-50/5" (REF)			
848.5							
41.0		END OF BORING					Water observed at 12.5 feet while drilling.
		Boring then grouted					
			45				
			50				
			55				
			60				

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Project Number B2402585.00
Geotechnical Evaluation
Columbia Heights Master Development
800 53rd Avenue Northeast
Columbia Heights, Minnesota

BORING: **ST-28**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Anoka (US Feet)
NORTHING: 109834.3 EASTING: 504121.7
DRILLER: M. Takada LOGGED BY: I. Becket START DATE: 04/18/24 END DATE: 04/18/24
SURFACE ELEVATION: 887.4 ft RIG: 75011 METHOD: 3 1/4" HSA SURFACING: Grass WEATHER: Cloudy

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
886.2		LEAN CLAY (CL), with roots, dark brown, moist (TOPSOIL FILL)					
1.2		FILL: SANDY LEAN CLAY (CL), trace Gravel, non to slightly organic, brown and dark brown, moist		2-1-3 (4) 10"		14	OC=2%
883.4							
4.0		ORGANIC CLAY with SAND (OL), black, wet (SWAMP DEPOSIT)	5	2-2-3 (5) 12"			
880.4							
7.0		SILTY SAND (SM), fine to medium-grained, trace Gravel, reddish brown, moist, medium dense (GLACIAL TILL)		5-7-12 (19) 14"		10	
			10	12-13-15 (28) 14"			
				7-7-11 (18) 14"			
			15	8-6-7 (13) 16"			
869.4							
18.0	▽	POORLY GRADED SAND with SILT (SP-SM), fine to medium-grained, with Clay lenses, reddish brown, wet, medium dense (GLACIAL OUTWASH)	20	4-7-10 (17) 14"			
				8-12-34 (46) 14"			
862.9							
24.5		END OF BORING Boring then grouted	25				Water observed at 20.0 feet while drilling.
			30				

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See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2402585.00
Geotechnical Evaluation
Columbia Heights Master Development
800 53rd Avenue Northeast
Columbia Heights, Minnesota

BORING: **ST-29**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Anoka (US Feet)
NORTHING: 109833.0 EASTING: 504357.8
DRILLER: M. Takada LOGGED BY: I. Becket START DATE: 04/18/24 END DATE: 04/18/24
SURFACE ELEVATION: 889.7 ft RIG: 7514 METHOD: 3 1/4" HSA SURFACING: Grass WEATHER: Cloudy

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
889.0		SILTY SAND (SM), fine-grained, with roots, dark brown, wet (TOPSOIL)					
0.7		POORLY GRADED SAND (SP), fine-grained, gray, wet (SWAMP DEPOSIT)		1-2-3 (5) 12"		23	P200=5%
885.7							
4.0		PEAT (PT), with roots, black, wet (SWAMP DEPOSIT)	5	1-1-2 (3) 12"		181	OC=31%
881.7				0-2-3 (5) 12"			
8.0		POORLY GRADED SAND (SP), fine to medium-grained, brown to reddish brown, moist, loose (ALLUVIUM)					
879.7			10	3-5-8 (13) 14"			
10.0		SILTY SAND (SM), fine to medium-grained, trace Gravel, reddish brown, moist, medium dense (GLACIAL TILL)		4-8-11 (19) 14"			
	▼		15	7-9-13 (22) 14"			Temporary piezometer installed to 14 1/2 feet
870.7							
19.0		POORLY GRADED SAND with SILT (SP-SM), fine to medium-grained, trace Gravel, reddish brown, wet, medium dense (GLACIAL OUTWASH)	20	4-6-9 (15) 12"			
867.7							
22.0		SILTY SAND (SM), fine to medium-grained, with Gravel, reddish brown, wet, dense (GLACIAL TILL)		5-9-37 (46) 14"			
865.2							
24.5		END OF BORING	25				Water not observed while drilling.
		Boring then grouted					Water observed at 14.1 feet in temporary piezometer when rechecked on 05/08/2024.
			30				

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See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2402585.00
Geotechnical Evaluation
Columbia Heights Master Development
800 53rd Avenue Northeast
Columbia Heights, Minnesota

BORING: **ST-30**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Anoka (US Feet)
NORTHING: 109833.0 EASTING: 504598.6
DRILLER: M. Takada LOGGED BY: I. Becket START DATE: 04/18/24 END DATE: 04/18/24
SURFACE ELEVATION: 894.1 ft RIG: 75011 METHOD: 3 1/4" HSA SURFACING: Grass WEATHER: Cloudy

Elev./ Depth ft	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
893.6						
0.5	SILTY SAND (SM), fine to medium-grained, with roots, dark brown, moist (TOPSOIL FILL)					
	FILL: SANDY LEAN CLAY (CL), trace Gravel, non to slightly organic, light brown to dark brown, moist		1-3-4 (7) 12"		17	OC=3%
		5	2-3-5 (8) 12"		19	
887.1						
7.0	PEAT (PT), with roots, brown, wet (SWAMP DEPOSIT)		2-2-3 (5) 12"			
		10	1-2-3 (5) 12"		105	OC=21%
882.1						
12.0	SILTY SAND (SM), fine to medium-grained, trace Gravel, brown to reddish brown, moist, medium dense (GLACIAL TILL)		3-4-8 (12) 12"			
	Clay seams at 15 feet	15	9-10-11 (21) 14"			
875.1						
19.0	POORLY GRADED SAND with SILT (SP-SM), fine-grained, reddish brown, wet, very dense (GLACIAL OUTWASH)	20	14-22-29 (51) 12"			
872.1						
22.0	SILTY SAND (SM), fine to medium-grained, with Gravel, reddish brown, moist, medium dense (GLACIAL TILL)		9-11-13 (24) 12"			
869.6						
24.5	END OF BORING	25				Water not observed while drilling.
	Boring then grouted					
		30				

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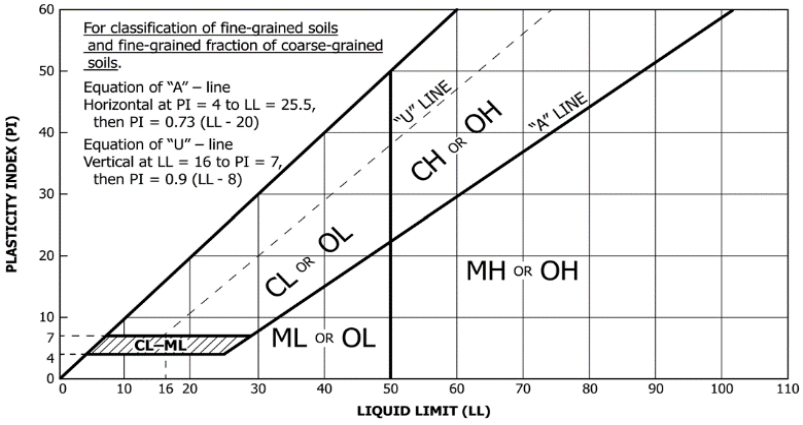
Descriptive Terminology of Soil

Based on Standards ASTM D2487/2488
(Unified Soil Classification System)

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests[A]				Soil Classification	
				Group Symbol	Group Name[B]
Coarse-grained Soils (more than 50% retained on No. 200 sieve)	Gravels (More than 50% of coarse fraction retained on No. 4 sieve)	Clean Gravels (Less than 5% fines[C])	$C_u \geq 4$ and $1 \leq C_c \leq 3^D$	GW	Well-graded gravel[E]
			$C_u < 4$ and/or ($C_c < 1$ or $C_c > 3$)[D]	GP	Poorly graded gravel[E]
		Gravels with Fines (More than 12% fines[C])	Fines classify as ML or MH	GM	Silty gravel[E F G]
			Fines Classify as CL or CH	GC	Clayey gravel[E F G]
	Sands (50% or more coarse fraction passes No. 4 sieve)	Clean Sands (Less than 5% fines[H])	$C_u \geq 6$ and $1 \leq C_c \leq 3^D$	SW	Well-graded sand[I]
			$C_u < 6$ and/or ($C_c < 1$ or $C_c > 3$)[D]	SP	Poorly graded sand[I]
		Sands with Fines (More than 12% fines[H])	Fines classify as ML or MH	SM	Silty sand[F G I]
			Fines classify as CL or CH	SC	Clayey sand[F G I]
Fine-grained Soils (50% or more passes the No. 200 sieve)	Silts and Clays (Liquid limit less than 50)	Inorganic	PI > 7 and plots on or above "A" line[J]	CL	Lean clay[K L M]
			PI < 4 or plots below "A" line[J]	ML	Silt[K L M]
		Organic	Liquid Limit – oven dried / Liquid Limit – not dried <0.75	OL	Organic clay[K L M N] / Organic silt[K L M O]
	Silts and Clays (Liquid limit 50 or more)	Inorganic	PI plots on or above "A" line	CH	Fat clay[K L M]
			PI plots below "A" line	MH	Elastic silt[K L M]
		Organic	Liquid Limit – oven dried / Liquid Limit – not dried <0.75	OH	Organic clay[K L M P] / Organic silt[K L M Q]
Highly Organic Soils		Primarily organic matter, dark in color, and organic odor		PT	Peat

A. Based on the material passing the 3-inch (75-mm) sieve.
B. If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.
C. Gravels with 5 to 12% fines require dual symbols:
   GW-GM well-graded gravel with silt
   GW-GC well-graded gravel with clay
   GP-GM poorly graded gravel with silt
   GP-GC poorly graded gravel with clay
D. $C_u = D_{60} / D_{10}$ $C_c = (D_{30})^2 / (D_{10} \times D_{60})$
E. If soil contains ≥ 15% sand, add "with sand" to group name.
F. If fines classify as CL-ML, use dual symbol GC-GM or SC-SM.
G. If fines are organic, add "with organic fines" to group name.
H. Sands with 5 to 12% fines require dual symbols:
   SW-SM well-graded sand with silt
   SW-SC well-graded sand with clay
   SP-SM poorly graded sand with silt
   SP-SC poorly graded sand with clay
I. If soil contains ≥ 15% gravel, add "with gravel" to group name.
J. If Atterberg limits plot in hatched area, soil is CL-ML, silty clay.
K. If soil contains 15 to < 30% plus No. 200, add "with sand" or "with gravel", whichever is predominant.
L. If soil contains ≥ 30% plus No. 200, predominantly sand, add "sandy" to group name.
M. If soil contains ≥ 30% plus No. 200 predominantly gravel, add "gravelly" to group name.
N. PI ≥ 4 and plots on or above "A" line.
O. PI < 4 or plots below "A" line.
P. PI plots on or above "A" line.
Q. PI plots below "A" line.



Laboratory Tests

DD	Dry density, pcf	**q_p**	Pocket penetrometer strength, tsf
WD	Wet density, pcf	**q_U**	Unconfined compression test, tsf
P200	% Passing #200 sieve	**LL**	Liquid limit
MC	Moisture content, %	**PL**	Plastic limit
OC	Organic content, %	**PI**	Plasticity index

Particle Size Identification

Boulders..... over 12"
Cobbles..... 3" to 12"
Gravel
  Coarse..... 3/4" to 3" (19.00 mm to 75.00 mm)
  Fine..... No. 4 to 3/4" (4.75 mm to 19.00 mm)
Sand
  Coarse..... No. 10 to No. 4 (2.00 mm to 4.75 mm)
  Medium..... No. 40 to No. 10 (0.425 mm to 2.00 mm)
  Fine..... No. 200 to No. 40 (0.075 mm to 0.425 mm)
Silt..... No. 200 (0.075 mm) to .005 mm
Clay..... < .005 mm

Relative Proportions[L, M]

trace..... 0 to 5%
little..... 6 to 14%
with..... ≥ 15%

Inclusion Thicknesses

lens..... 0 to 1/8"
seam..... 1/8" to 1"
layer..... over 1"

Apparent Relative Density of Cohesionless Soils

Very loose ..... 0 to 4 BPF
Loose ..... 5 to 10 BPF
Medium dense..... 11 to 30 BPF
Dense..... 31 to 50 BPF
Very dense..... over 50 BPF

Consistency of Cohesive Soils	Blows Per Foot	Approximate Unconfined Compressive Strength
Very soft	0 to 1 BPF	< 0.25 tsf
Soft	2 to 4 BPF	0.25 to 0.5 tsf
Medium	5 to 8 BPF	0.5 to 1 tsf
Stiff	9 to 15 BPF	1 to 2 tsf
Very Stiff	16 to 30 BPF	2 to 4 tsf
Hard	over 30 BPF	> 4 tsf

Moisture Content:

Dry: Absence of moisture, dusty, dry to the touch.
Moist: Damp but no visible water.
Wet: Visible free water, usually soil is below water table.

Drilling Notes:

Blows/N-value: Blows indicate the driving resistance recorded for each 6-inch interval. The reported N-value is the blows per foot recorded by summing the second and third interval in accordance with the Standard Penetration Test, ASTM D1586.

Partial Penetration: If the sampler could not be driven through a full 6-inch interval, the number of blows for that partial penetration is shown as #/x" (i.e. 50/2"). The N-value is reported as "REF" indicating refusal.

Recovery: Indicates the inches of sample recovered from the sampled interval. For a standard penetration test, full recovery is 18", and is 24" for a thinwall/shelby tube sample.

WOH: Indicates the sampler penetrated soil under weight of hammer and rods alone; driving not required.

WOR: Indicates the sampler penetrated soil under weight of rods alone; hammer weight and driving not required.

Water Level: Indicates the water level measured by the drillers either while drilling (▽), at the end of drilling (▼), or at some time after drilling (▼).

Sample Symbols

Standard Penetration Test
Modified California (MC)
Auger
Grab Sample
Rock Core
Thinwall (TW)/Shelby Tube (SH)
Texas Cone Penetrometer
Dynamic Cone Penetrometer

APPENDIX B

Wetland Delineation Report
Kjolhaug Environmental

KJOLHAUG ENVIRONMENTAL SERVICES COMPANY

Providing Sound, Balanced, Comprehensive Natural Resource Solutions

Memorandum

Date: May 16, 2025

To: Andrew Boucher, City of Columbia Heights (LGU)

CC: Todd McLouth, Loucks, Inc.

From: Faith Holaday, Kjolhaug Environmental Services (KES)

Re: Site Assessment and No-Loss/Incidental Determination
800 53RD AVENUE NE, COLUMBIA HEIGHTS KES# 2025-052

The 11.7-acre site at 800 53rd Avenue NE was inspected on April 22, 2025 for the presence and extent of wetlands by Kjolhaug Environmental Services (KES). No wetlands were identified or delineated on the property.

The site was located in Section 26, Township 30 North, Range 24 West, City of Columbia Heights, Anoka County, Minnesota. The site was situated approximately 1500 ft south of I-694, 300 ft west of Central Avenue NE/MN 65, and adjacent to and south of 53rd Avenue NE (**Figure 1**). The site boundaries corresponded to Anoka County PID 26-30-24-11-0020.

The site consisted of a parking lot, office building, meadow, lawn, and planted trees. The topography at the site sloped from a high of 898-ft MSL in the northwest and northeast portions of the site to a low of 886-ft MSL in the central and southeast portions of the site. Surrounding land use was commercial and residential. Existing conditions are shown on **Figure 2**.

Appendix A of this memo includes a Joint Application Form for Activities Affecting Water Resources in Minnesota, which is submitted to the City of Columbia Heights to request concurrence with the No-Loss/Incidental determinations under the Minnesota Wetland Conservation Act (WCA).

Wetland Delineation Methodology

Wetlands were identified using the Routine Determination method described in the Corps of Engineers Wetlands Delineation Manual (Waterways Experiment Station, 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0) as required under Section 404 of the Clean Water Act and the Minnesota Wetland Conservation Act.

Wetland boundaries were identified as the upper-most extent of wetland that met criteria for hydric soils, hydrophytic vegetation, and wetland hydrology. Wetland-upland boundaries were marked with pin flags that were located with a sub-meter accuracy GPS unit.

Soils, vegetation, and hydrology were documented at a representative location along the wetland-upland boundary. Plant species dominance was estimated based on the percent aerial or basal coverage visually estimated within a 30-foot radius for trees and vines, a 15-foot radius for the shrub layer, and a 5-foot radius for the herbaceous layer within the community type sampled.

Soils were characterized to a minimum depth of 24 inches (unless otherwise noted) using a Munsell Soil Color Book and standard soil texturing methodology. Hydric soil indicators used are from Field Indicators of Hydric Soils in the United States (USDA Natural Resources Conservation Service (NRCS) in cooperation with the National Technical Committee for Hydric Soils, Version 8.2, 2010).

Mapped soils are separated into five classes based on the composition of hydric components and the Hydric Rating by Map Unit color classes utilized on Web Soil Survey. The five classes include Hydric (100 percent hydric components), Predominantly Hydric (66 to 99 percent hydric components), Partially Hydric (33 to 65 percent hydric components), Predominantly Non-Hydric (1 to 32 percent hydric components), and Non-Hydric (less than one percent hydric components).

Plants were identified using standard regional plant keys. Taxonomy and indicator status of plant species was taken from the 2020 National Wetland Plant List (U.S. Army Corps of Engineers 2020. National Wetland Plant List, version 3.3, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH).

Review of NWI, Soils, DNR, and NHD Information

The National Wetlands Inventory (NWI) (Minnesota Geospatial Commons 2009-2014 and U.S. Fish and Wildlife Service) showed a PEM1C/PUBG wetland approximately 100 ft west of the site (**Figure 3**).

The Soil Survey (USDA NRCS 2015) did not show any hydric or predominantly hydric soils within the site boundaries. Soil types mapped on or near the property are listed in **Table 2** and a map showing soil types is included in **Figure 4**.

Table 2. Soil types present on the 800 53rd Avenue site.

Symbol	Soil Name	Acres in AOI	Percent of AOI	% Hydric	Hydric Category
UuB	Urban land-Udorthents (cut and fill land) complex, 0 to 6 percent slopes	11.7	100	0	Non-hydric

The Minnesota DNR Public Waters Inventory (Minnesota Department of Natural Resources 2015) showed DNR Public Water Basin 02008000 P (Sandy) approximately 100 ft west of the site boundaries (**Figure 5**).

The National Hydrography Dataset (U.S. Geological Survey 2015) showed one pipeline within site boundaries along the southern site boundary. The dataset also showed a lake/pond feature corresponding to the DNR Public Water Basin and several HYDRO NET Junctions approximately 100 to the west of the site (**Figure 6**).

No-Wetland/Incidental Determination

The site was examined on April 22, 2025 for potential wetlands. At the time of the visit, climatic conditions were atypical (wet) according to the Antecedent Precipitation Tool **(Appendix C)**. Buds on most trees and shrubs had burst and early vegetation was actively growing at the time of the site visit.

Area A (**Figure 2**) located just south of the parking lot contained a wet spot dominated by bulrush. The area met all three wetland parameters. A ***storm pond*** dominated by narrow-leaved cattail and open water was also observed west of Area A. This pond also met all three wetland parameters. However, review of historic aerial photographs shows that the wet spot within Area A and the stormwater pond were incidentally within former upland when parking lot expansion occurred 2015-2016. Recent aerial photos are provided in **Appendix B**.

Per Mn WCA Rules 8420.0105 SCOPE. Subp. 2. Applicability.

> *D. This chapter does not regulate impacts to incidental wetlands. "Incidental wetlands" are wetland areas that the landowner can demonstrate, to the satisfaction of the local government unit, were created in nonwetland areas solely by actions, the purpose of which was not to create the wetland. Incidental wetlands include drainage ditches, impoundments, or excavations constructed in nonwetlands solely for the purpose of effluent treatment, containment of waste material, storm water retention or detention, drainage, soil and water conservation practices, and water quality improvements and not as part of a wetland replacement process that may, over time, take on wetland characteristics.*

The aerial photos from 2010 and 2015 show that no wetlands or water features were present in the area of the storm pond or in Area A. By 2016, the parking lot expansion appeared to be complete, standing water and erosion blankets were visible in the storm pond, and wetness was visible within Area A. Wetness within Area A (from parking lot runoff) has remained and wetland vegetation has developed through the most recent photographs (2023).

Based on soil survey information (non-hydric mapped soils) and aerial photo review, it appears that Area A was created in upland through the parking lot expansion and grading activities from 2015-2016, which have caused water to gather and prevented the area from draining as it had prior to the construction. Based on the same information, it appears that the storm pond was excavated in upland for stormwater purposes between 2015 and 2016. **Appendix A** requests formal WCA concurrence with the No-Loss/Incidental determination.

Requested Approvals
No wetlands were identified or delineated on the 800 53rd Avenue NE property.

Appendix A of this memo includes a Joint Application Form for Activities Affecting Water Resources in Minnesota, which is submitted to the City of Columbia Heights to request concurrence with No-Loss/Incidental determination under the Minnesota Wetland Conservation Act (WCA).

Certificate of Delineation
The procedures utilized in the described delineation are based on the U.S. Army Corps of Engineers 1987 Wetlands Delineation Manual as required under Section 404 of the Clean Water Act and the Minnesota Wetland Conservation Act. This wetland delineation and report were prepared in compliance with the regulatory standards in place at the time the work was performed. Site boundaries indicated on figures within this report are approximate and do not constitute an official survey product.

Delineation completed by: Faith Holaday, Wetland/Soil Specialist
Minnesota Certified Wetland Professional In-Training No. 5526

Report prepared by: Faith Holaday, Wetland/Soil Specialist
Minnesota Certified Wetland Professional In-Training No. 5526

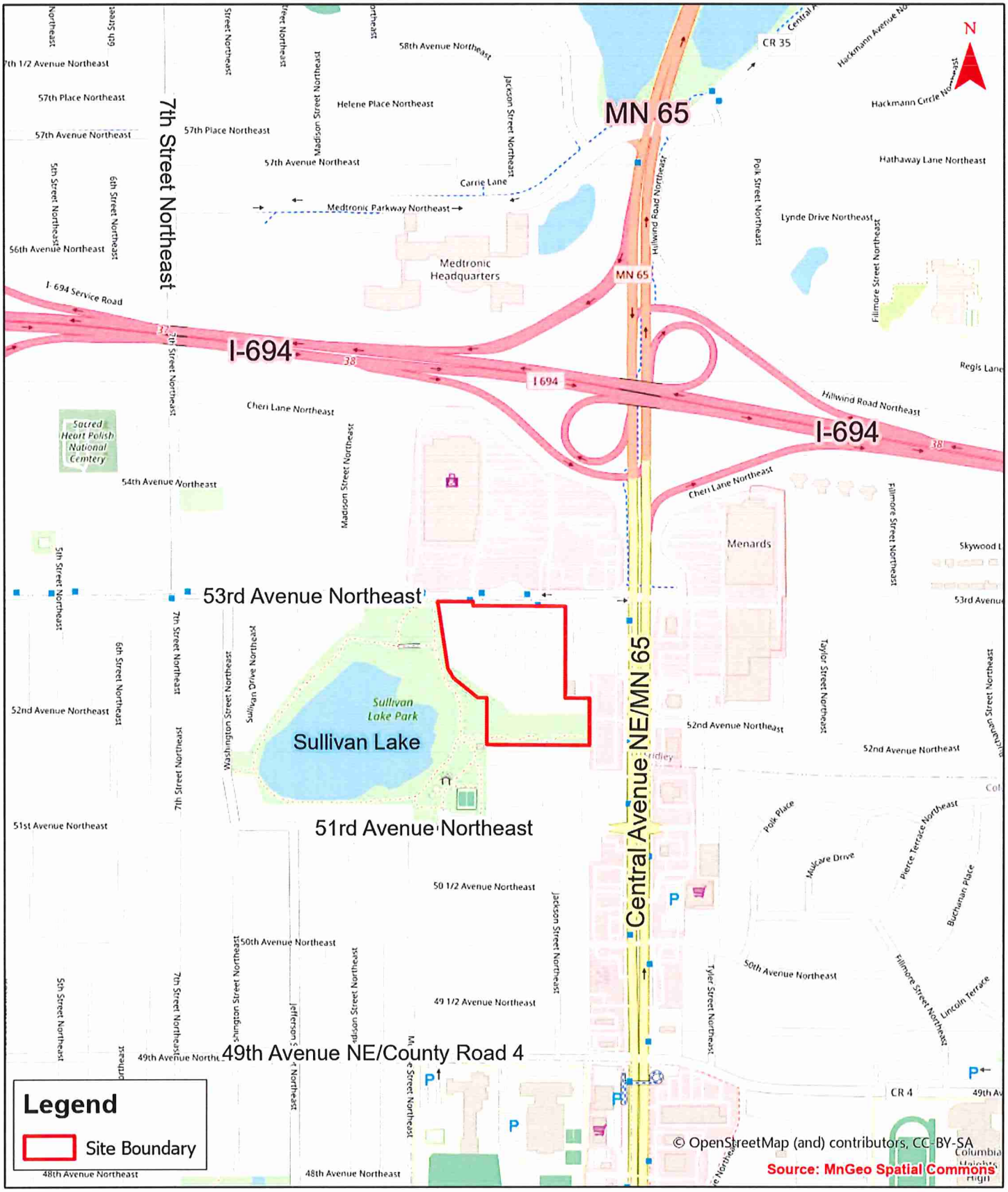
Report reviewed by: _____ Date: May 16, 2025
Mark Kjolhaug, Professional Wetland Scientist No. 000845

800 53RD AVENUE NE

No Wetland Determination

Figures:

Figure 1 – Site Location Map
Figure 2 – Existing Conditions Map
Figure 3 – NWI Map
Figure 4 – Soil Survey Map
Figure 5 – DNR Public Waters Map
Figure 6 – National Hydrography Dataset Map



KJOLHAUG ENVIRONMENTAL

0 2,000 Feet

Figure 1 - Site Location

800 53rd Avenue NE (KES 2025-052)
Columbia Heights, Minnesota

Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.

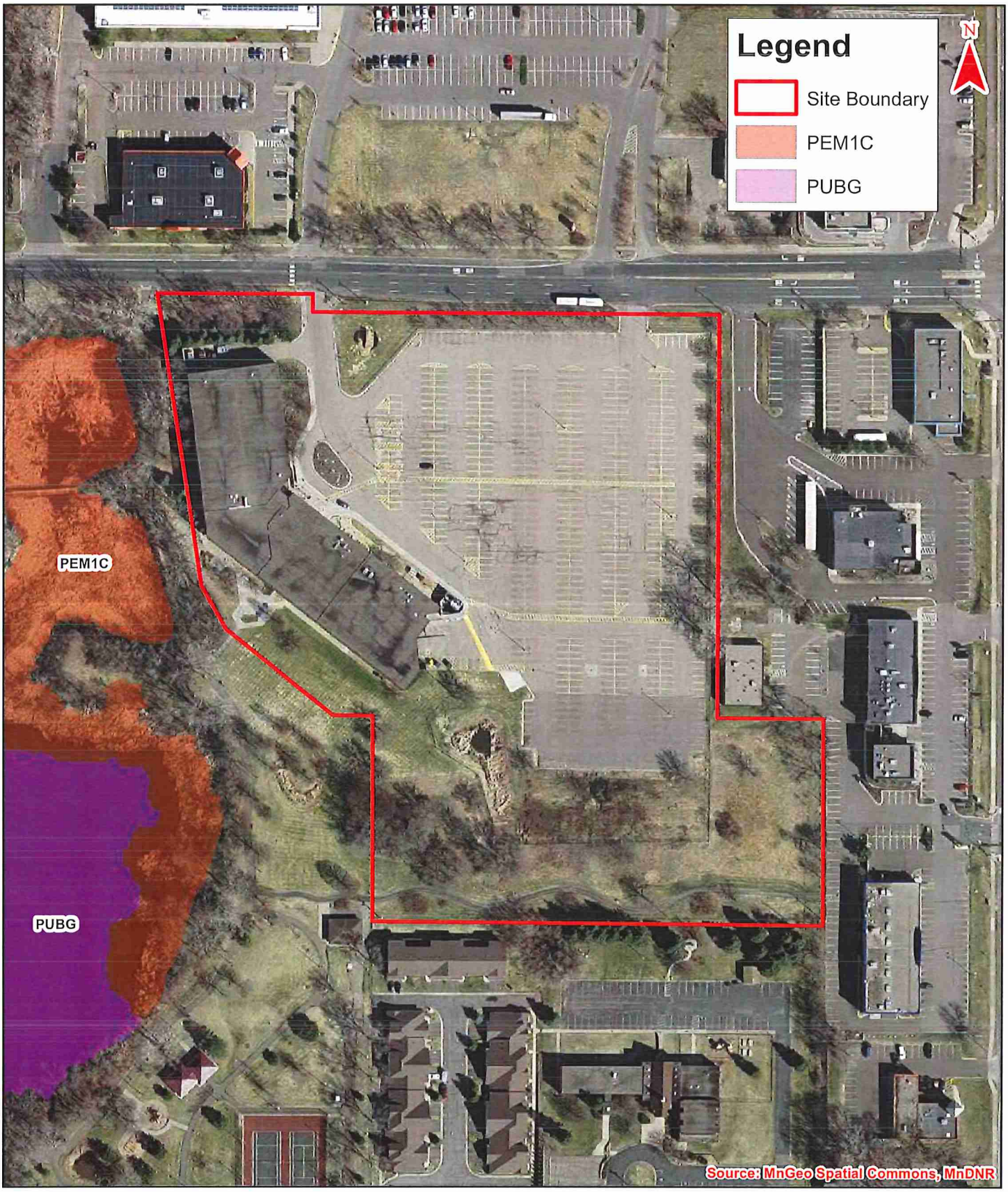
Figure 2 - Existing Conditions (2020 TC Metro Photo)

800 53rd Avenue NE (KES 2025-052)
Columbia Heights, Minnesota

KJOLHAUG ENVIRONMENTAL

0 300 Feet

Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.



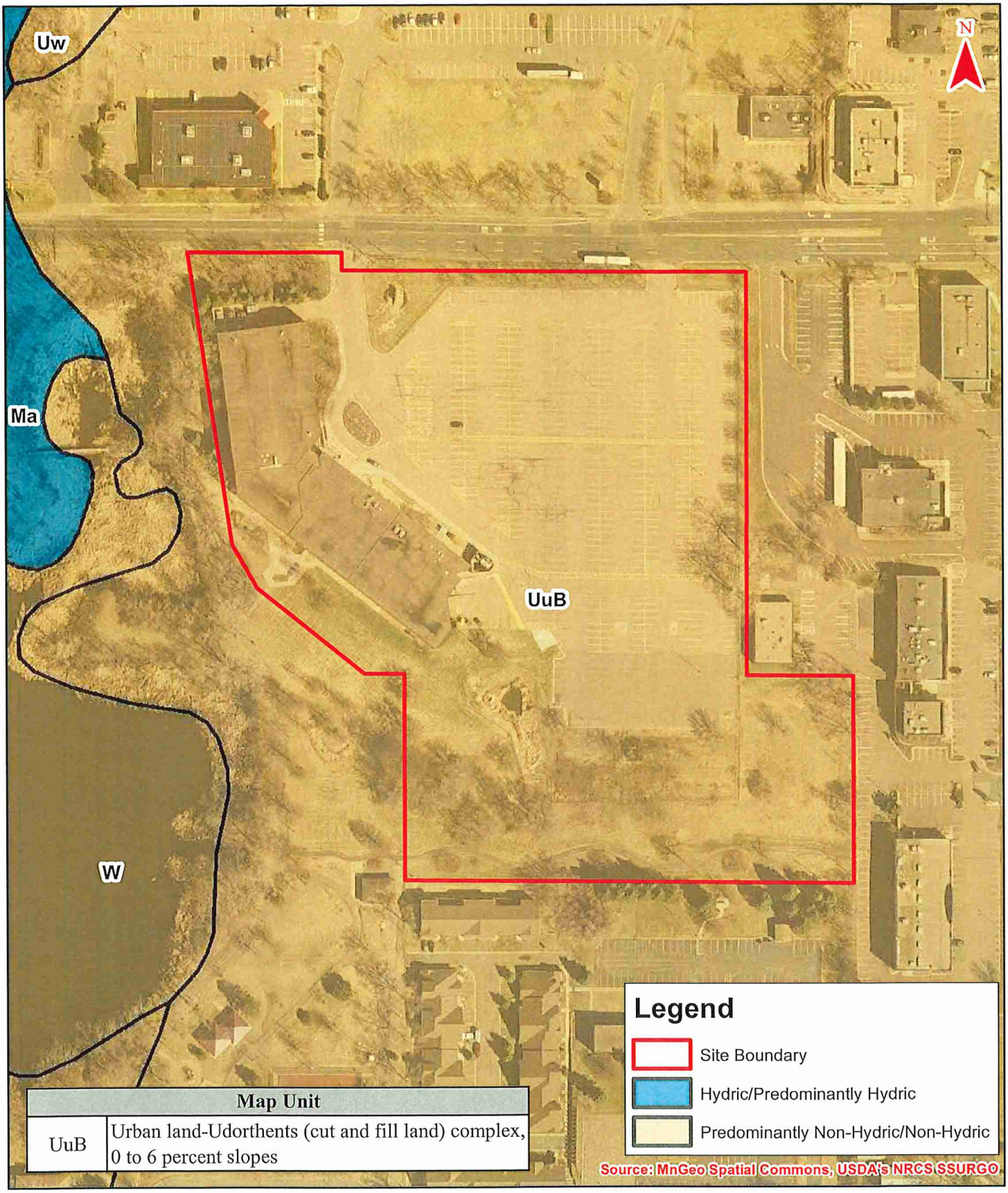
KJOLHAUG ENVIRONMENTAL

0 500 Feet

Figure 3 - MnDNR National Wetlands Inventory Update

800 53rd Avenue NE (KES 2025-052)
Columbia Heights, Minnesota

Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.



Map Unit	
UuB	Urban land-Udorthents (cut and fill land) complex, 0 to 6 percent slopes

KJOLHAUG ENVIRONMENTAL

0 350 Feet

Figure 4 - Soil Survey

800 53rd Avenue NE (KES 2025-052)
Columbia Heights, Minnesota

Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.

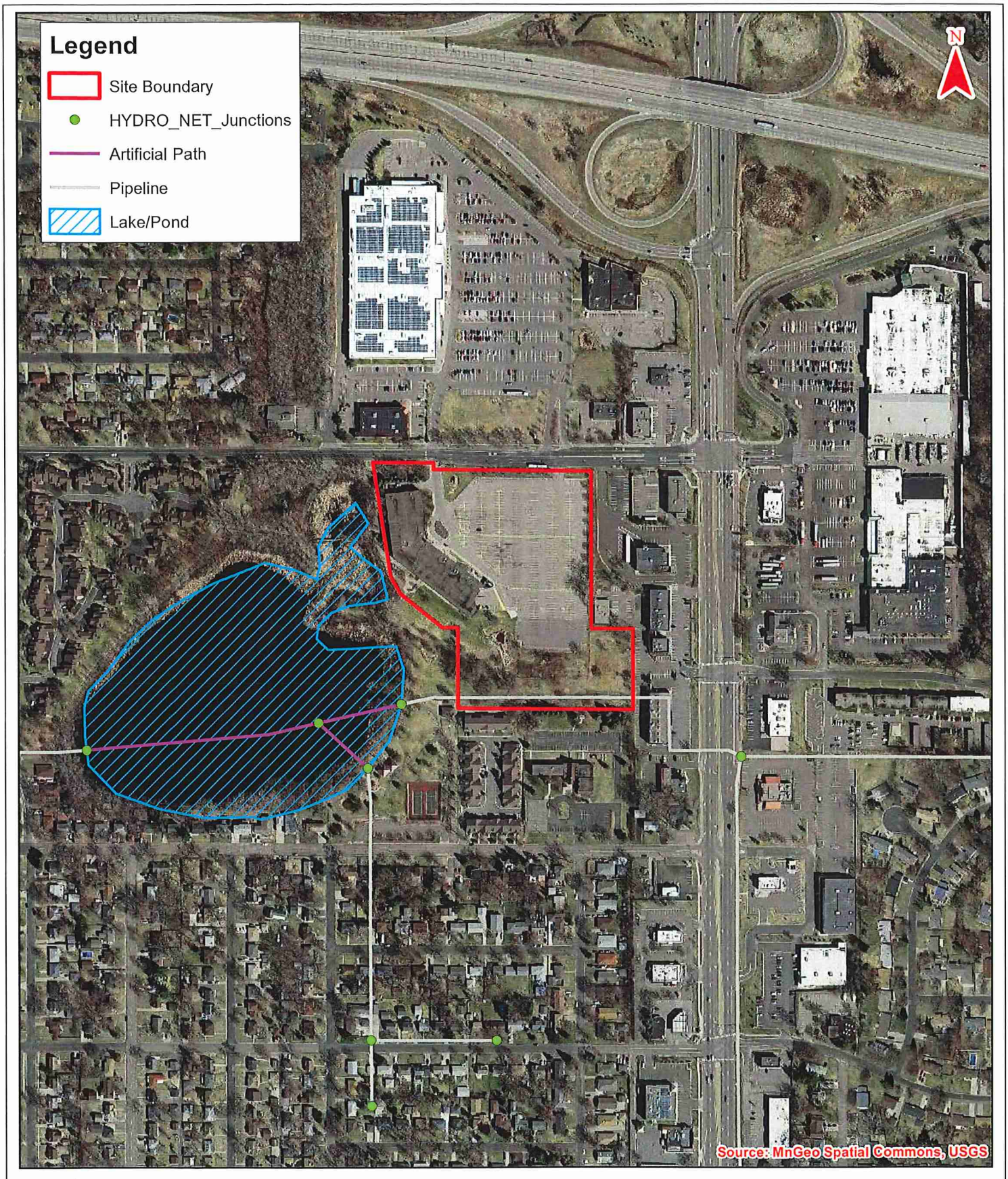
KJOLHAUG ENVIRONMENTAL

0 1,000 Feet

Figure 5 - DNR Public Waters Inventory

800 53rd Avenue NE (KES 2025-052)
Columbia Heights, Minnesota

Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.



KJOLHAUG ENVIRONMENTAL

0 1,000 Feet

Figure 6 - National Hydrography Dataset

800 53rd Avenue NE (KES 2025-052)
Columbia Heights, Minnesota

Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.

800 53RD AVENUE NE
No Wetland Determination

Appendix A

Joint Application Form for Activities Affecting Water Resources in Minnesota

PART ONE: Applicant Information

If applicant is an entity (company, government entity, partnership, etc.), an authorized contact person must be identified. If the applicant is using an agent (consultant, lawyer, or other third party) and has authorized them to act on their behalf, the agent's contact information must also be provided.

Applicant/Landowner Name: Lincoln Avenue Communities; c/o Kyle Brasser
Mailing Address:
Phone: 612-351-3411
E-mail Address: kbrasser@lincolnavenue.com

Authorized Contact (do not complete if same as above): Loucks, Inc.; c/o Todd McLouth
Mailing Address:
Phone: 763.496.6742
E-mail Address: TMcLouth@loucksinc.com

Agent Name: Kjolhaug Environmental Services; c/o Faith Holaday
Mailing Address: 2500 Shadywood Road Orono, MN 55331
Phone: (608) 852-2337
E-mail Address: faith@kjolhaugenv.com

PART TWO: Site Location Information

County: Anoka **City/Township: Columbia Heights**
Parcel ID and/or Address: 800 53rd Avenue NE, Columbia Heights, MN (PID: 26-30-24-11-0020)
Legal Description (Section, Township, Range): SEC 26, TWP 30N, RNG 24W
Lat/Long (decimal degrees):
Attach a map showing the location of the site in relation to local streets, roads, highways.
Approximate size of site (acres) or if a linear project, length (feet): 11.7 acres

If you know that your proposal will require an individual Permit from the U.S. Army Corps of Engineers, you must provide the names and addresses of all property owners adjacent to the project site. This information may be provided by attaching a list to your application or by using block 25 of the Application for Department of the Army permit which can be obtained at:

http://www.mvp.usace.army.mil/Portals/57/docs/regulatory/RegulatoryDocs/engform_4345_2012oct.pdf

PART THREE: General Project/Site Information

If this application is related to a delineation approval, exemption determination, jurisdictional determination, or other correspondence submitted ***prior to*** this application then describe that here and provide the Corps of Engineers project number.

Describe the project that is being proposed, the project purpose and need, and schedule for implementation and completion. The project description must fully describe the nature and scope of the proposed activity including a description of all project elements that effect aquatic resources (wetland, lake, tributary, etc.) and must also include plans and cross section or profile drawings showing the location, character, and dimensions of all proposed activities and aquatic resource impacts.

No-Loss/Incidental concurrence.

PART FOUR: Aquatic Resource Impact[1] Summary

If your proposed project involves a direct or indirect impact to an aquatic resource (wetland, lake, tributary, etc.) identify each impact in the table below. Include all anticipated impacts, including those expected to be temporary. Attach an overhead view map, aerial photo, and/or drawing showing all of the aquatic resources in the project area and the location(s) of the proposed impacts. Label each aquatic resource on the map with a reference number or letter and identify the impacts in the following table.

Aquatic Resource ID (as noted on overhead view)	**Aquatic Resource Type** (wetland, lake, tributary etc.)	**Type of Impact** (fill, excavate, drain, or remove vegetation)	**Duration of Impact** Permanent (P) or Temporary (T)[1]	**Size of Impact**[2]	**Overall Size of Aquatic Resource** [3]	**Existing Plant Community Type(s)** in Impact Area[4]	**County, Major Watershed #, and Bank Service Area #** of Impact Area[5]

[1]If impacts are temporary; enter the duration of the impacts in days next to the "T". For example, a project with a temporary access fill that would be removed after 220 days would be entered "T (220)".
[2]Impacts less than 0.01 acre should be reported in square feet. Impacts 0.01 acre or greater should be reported as acres and rounded to the nearest 0.01 acre. Tributary impacts must be reported in linear feet of impact and an area of impact by indicating first the linear feet of impact along the flowline of the stream followed by the area impact in parentheses). For example, a project that impacts 50 feet of a stream that is 6 feet wide would be reported as 50 ft (300 square feet).
[3]This is generally only applicable if you are applying for a de minimis exemption under MN Rules 8420.0420 Subp. 8, otherwise enter "N/A".
[4]Use *Wetland Plants and Plant Community Types of Minnesota and Wisconsin* 3rd Ed. as modified in MN Rules 8420.0405 Subp. 2.
[5]Refer to Major Watershed and Bank Service Area maps in MN Rules 8420.0522 Subp. 7.

If any of the above identified impacts have already occurred, identify which impacts they are and the circumstances associated with each:

PART FIVE: Applicant Signature

☐ Check here if you are requesting a pre-application consultation with the Corps and LGU based on the information you have provided. Regulatory entities will not initiate a formal application review if this box is checked.

By signature below, I attest that the information in this application is complete and accurate. I further attest that I possess the authority to undertake the work described herein.

Signature: _____ Date: 05/16/2025

I hereby authorize Kjolhaug Environmental Services to act on my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this application.

[1] The term "impact" as used in this joint application form is a generic term used for disclosure purposes to identify activities that may require approval from one or more regulatory agencies. For purposes of this form it is not meant to indicate whether or not those activities may require mitigation/replacement.

Attachment A
Request for Delineation Review, Wetland Type Determination, or Jurisdictional Determination

By submission of the enclosed wetland delineation report, I am requesting that the U.S. Army Corps of Engineers, St. Paul District (Corps) and/or the Wetland Conservation Act Local Government Unit (LGU) provide me with the following (check all that apply):

☐ **Wetland Type Confirmation**

☒ **Delineation Concurrence**. Concurrence with a delineation is a written notification from the Corps and a decision from the LGU concurring, not concurring, or commenting on the boundaries of the aquatic resources delineated on the property. Delineation concurrences are generally valid for five years unless site conditions change. Under this request alone, the Corps will not address the jurisdictional status of the aquatic resources on the property, only the boundaries of the resources within the review area (including wetlands, tributaries, lakes, etc.).

☐ **Preliminary Jurisdictional Determination**. A preliminary jurisdictional determination (PJD) is a non-binding written indication from the Corps that waters, including wetlands, identified on a parcel may be waters of the United States. For purposes of computation of impacts and compensatory mitigation requirements, a permit decision made on the basis of a PJD will treat all waters and wetlands in the review area as if they are jurisdictional waters of the U.S. PJDs are advisory in nature and may not be appealed.

☐ **Approved Jurisdictional Determination**. An approved jurisdictional determination (AJD) is an official Corps determination that jurisdictional waters of the United States are either present or absent on the property. AJDs can generally be relied upon by the affected party for five years. An AJD may be appealed through the Corps administrative appeal process.

In order for the Corps and LGU to process your request, the wetland delineation must be prepared in accordance with the 1987 Corps of Engineers Wetland Delineation Manual, any approved Regional Supplements to the 1987 Manual, and the *Guidelines for Submitting Wetland Delineations in Minnesota* (2013).
http://www.mvp.usace.army.mil/Missions/Regulatory/DelineationJDGuidance.aspx

Attachment B
Supporting Information for Applications Involving Exemptions, No Loss Determinations, and Activities Not Requiring Mitigation

Complete this part ***if*** you maintain that the identified aquatic resource impacts in Part Four do not require wetland replacement/compensatory mitigation OR ***if*** you are seeking verification that the proposed water resource impacts are either exempt from replacement or are not under CWA/WCA jurisdiction.

Identify the specific exemption or no-loss provision for which you believe your project or site qualifies:

Per Mn WCA Rules 8420.0105 SCOPE. Subp. 2. Applicability.

D. This chapter does not regulate impacts to incidental wetlands. "Incidental wetlands" are wetland areas that the landowner can demonstrate, to the satisfaction of the local government unit, were created in nonwetland areas solely by actions, the purpose of which was not to create the wetland. Incidental wetlands include drainage ditches, impoundments, or excavations constructed in nonwetlands solely for the purpose of effluent treatment, containment of waste material, storm water retention or detention, drainage, soil and water conservation practices, and water quality improvements and not as part of a wetland replacement process that may, over time, take on wetland characteristics.

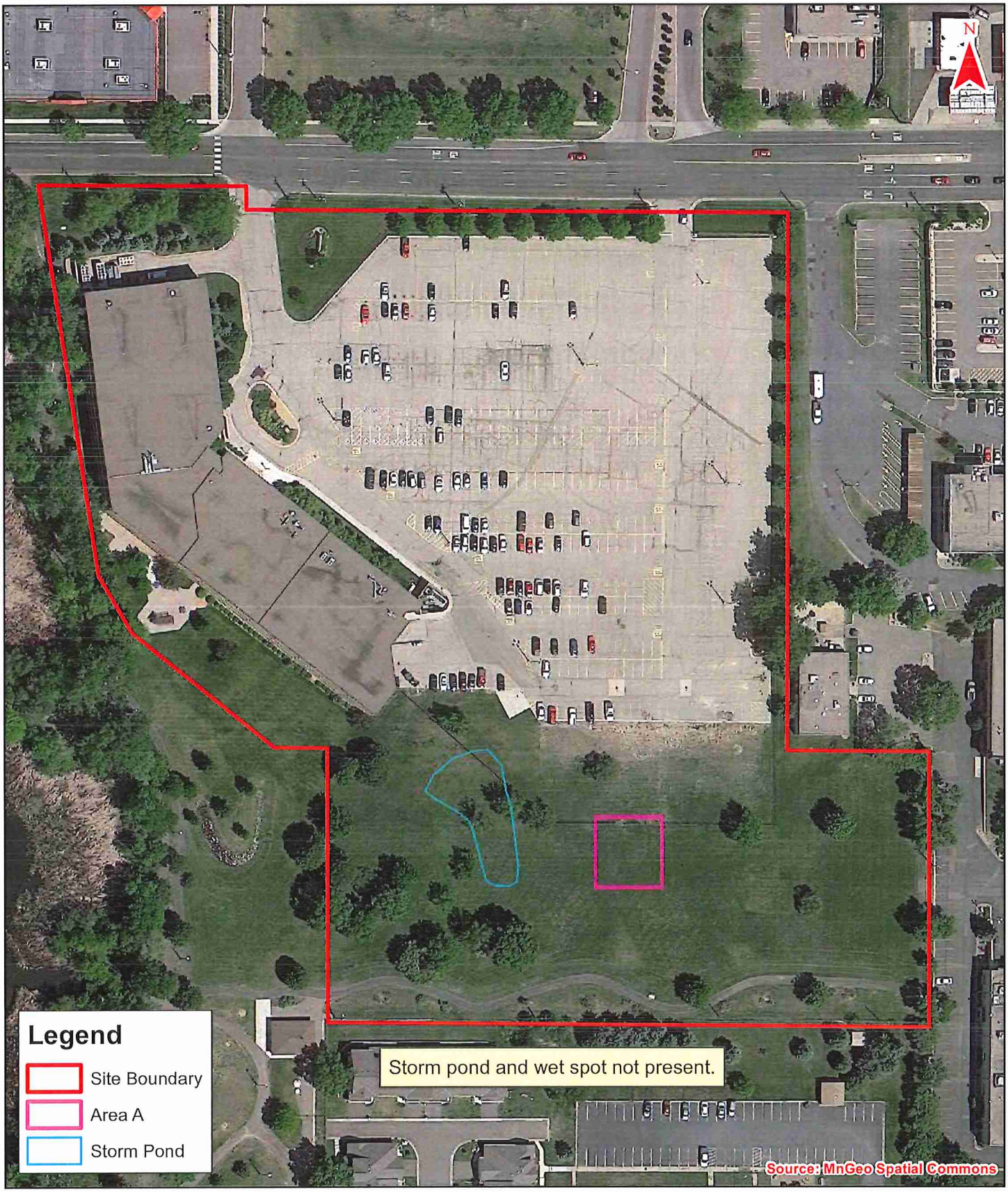
Provide a detailed explanation of how your project or site qualifies for the above. Be specific and provide and refer to attachments and exhibits that support your contention. Applicants should refer to rules (e.g. WCA rules), guidance documents (e.g. BWSR guidance, Corps guidance letters/public notices), and permit conditions (e.g. Corps General Permit conditions) to determine the necessary information to support the application. Applicants are strongly encouraged to contact the WCA LGU and Corps Project Manager prior to submitting an application if they are unsure of what type of information to provide:

See memo for explanation.

800 53RD AVENUE NE
No Wetland Determination

Appendix B

Historic Aerial Photographs



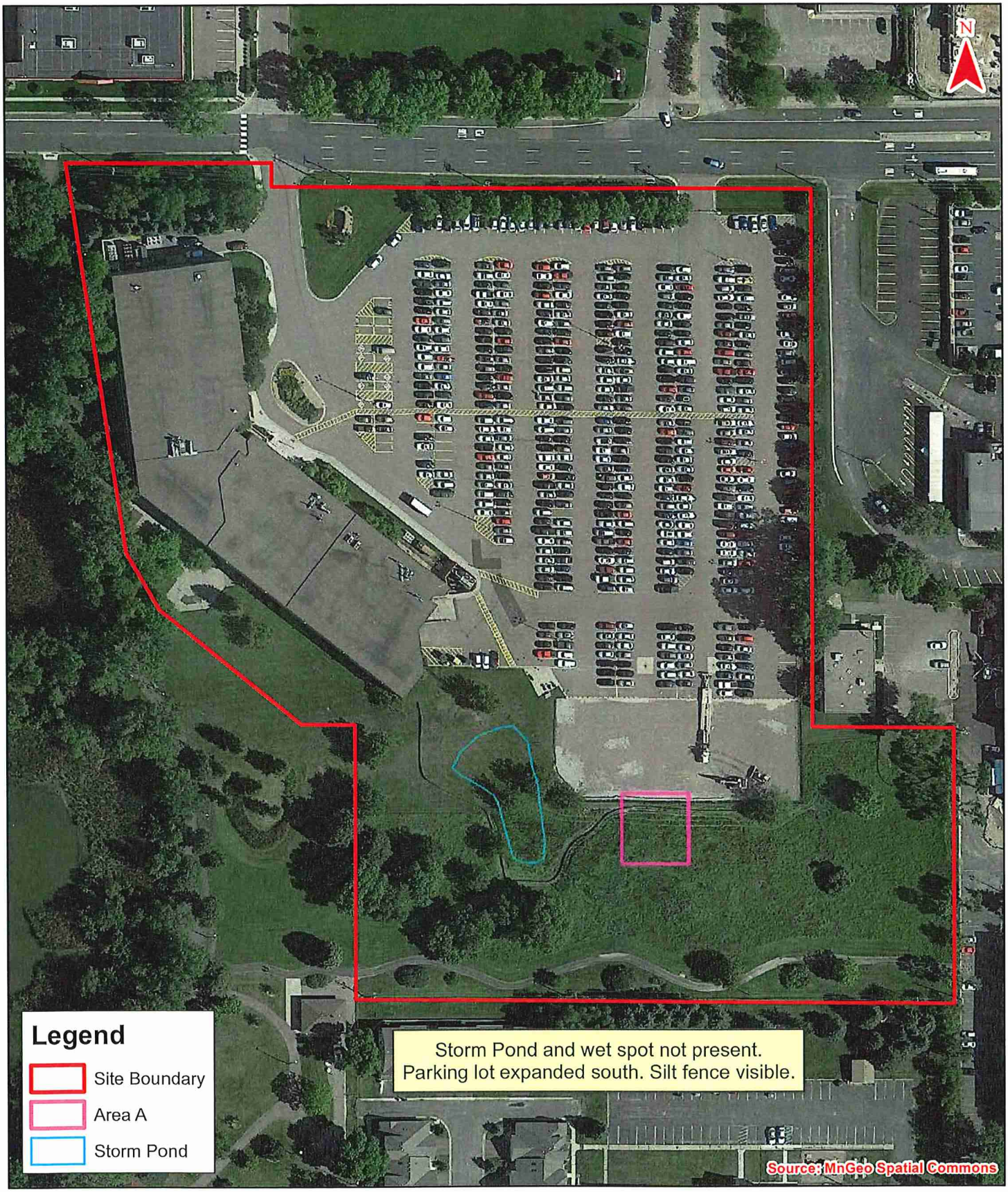
KJOLHAUG ENVIRONMENTAL

0 300 Feet

May 18, 2010 Google Earth

800 53rd Avenue NE (KES 2025-052)
Columbia Heights, Minnesota

Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.



KJOLHAUG ENVIRONMENTAL

0 300 Feet

August 11, 2015 Google Earth

800 53rd Avenue NE (KES 2025-052)
Columbia Heights, Minnesota

Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.

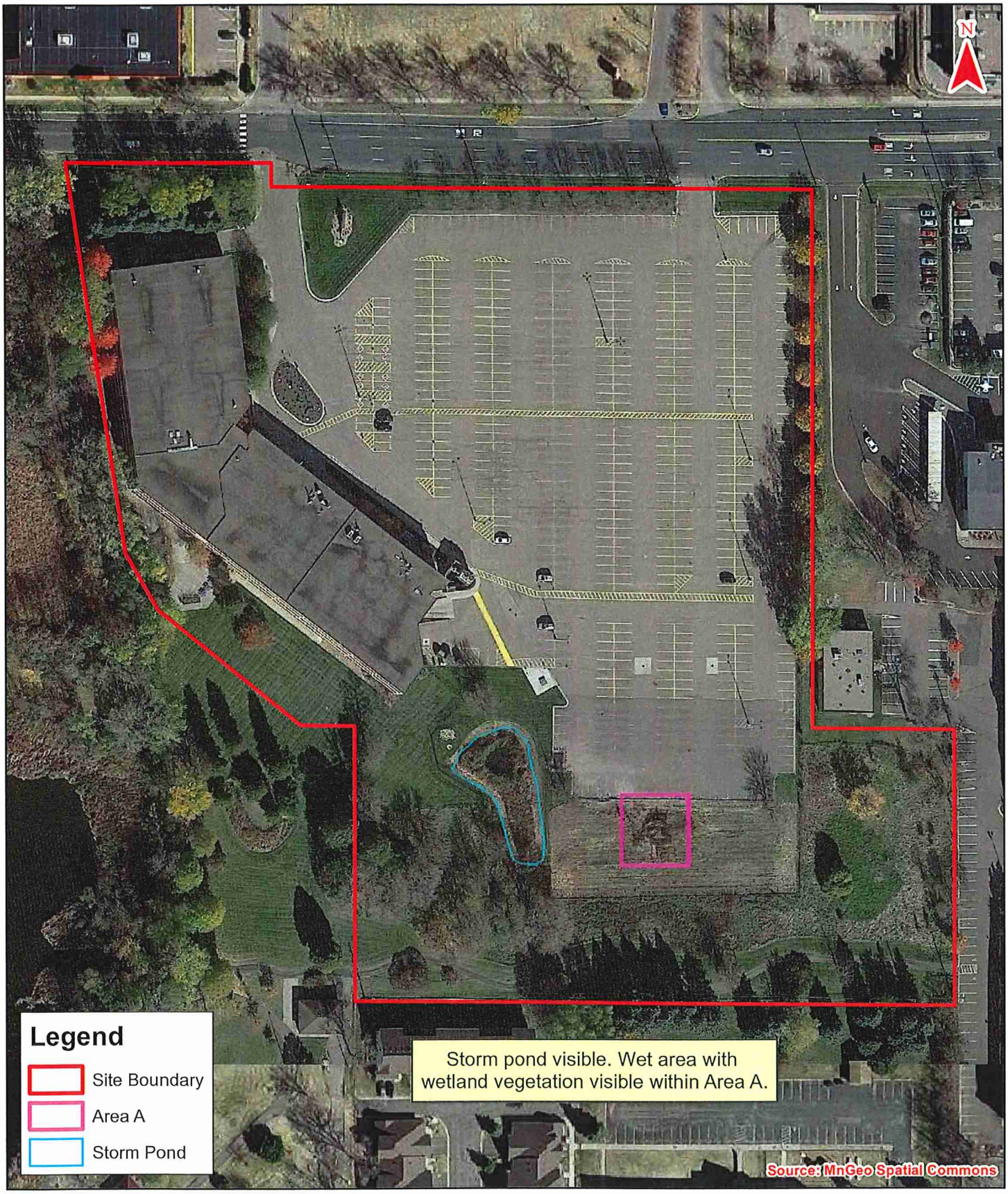
KJOLHAUG ENVIRONMENTAL

0 300 Feet

March 11, 2016 Google Earth

800 53rd Avenue NE (KES 2025-052)
Columbia Heights, Minnesota

Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.



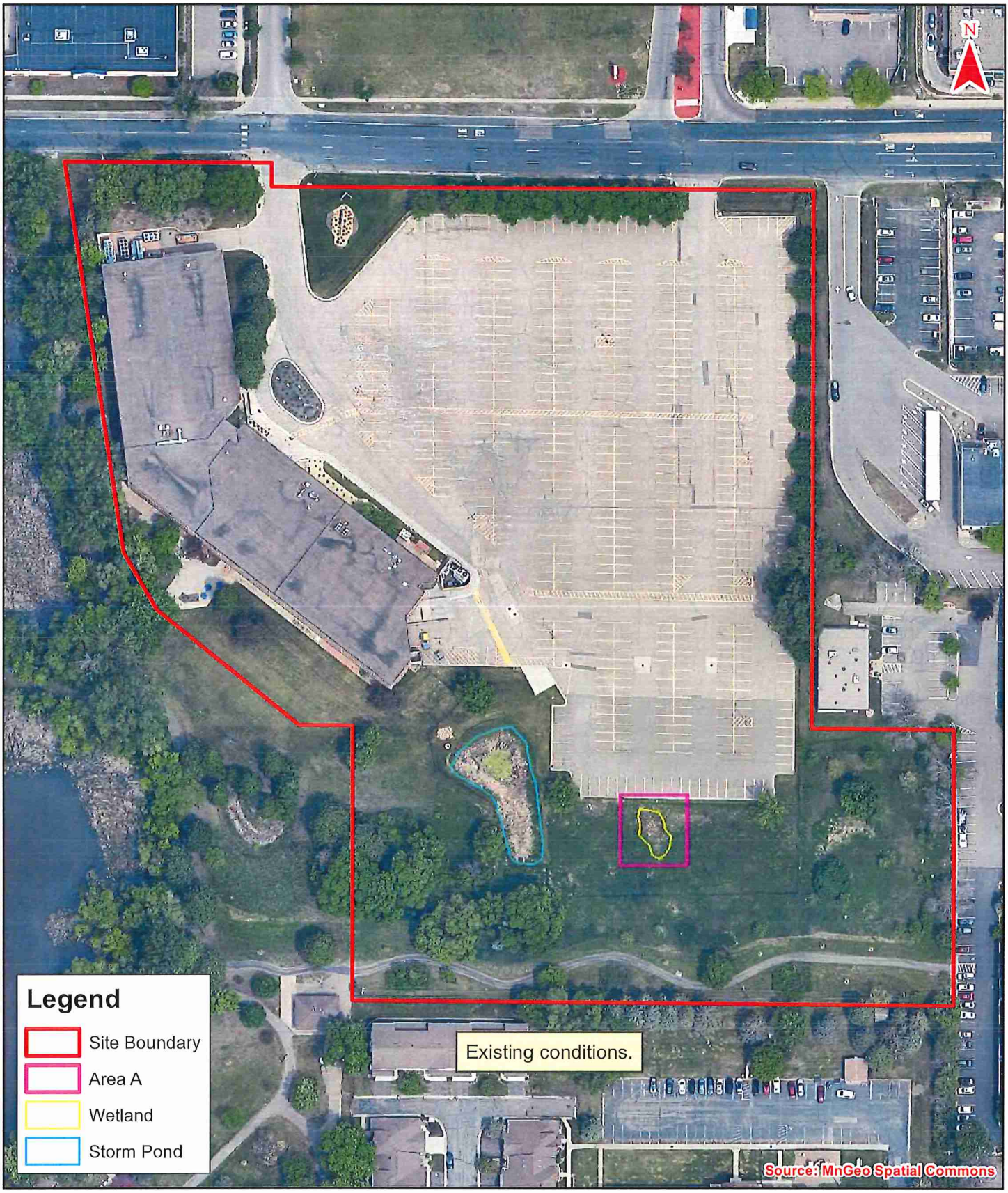
KJOLHAUG ENVIRONMENTAL

0 300 Feet

October 25, 2019 Google Earth

800 53rd Avenue NE (KES 2025-052)
Columbia Heights, Minnesota

Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.



KJOLHAUG ENVIRONMENTAL

0 300 Feet

May 20, 2023 Google Earth

800 53rd Avenue NE (KES 2025-052)
Columbia Heights, Minnesota

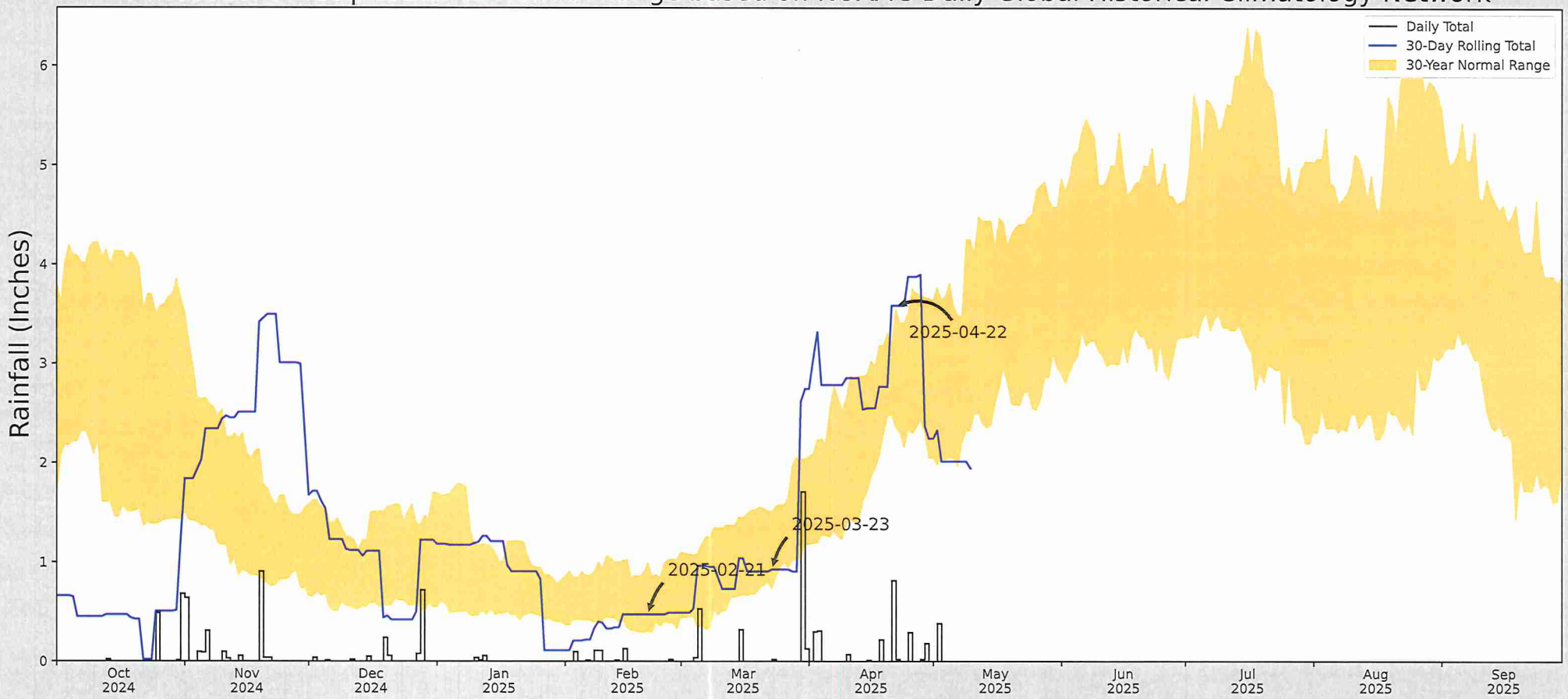
Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.

800 53RD AVENUE NE
No Wetland Determination

Appendix C

Precipitation Data

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	45.06347, -93.25104
Observation Date	2025-04-22
Elevation (ft)	893.753
Drought Index (PDSI)	Mild drought
WebWIMP H_2O Balance	Wet Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2025-04-22	2.353937	3.548819	3.590551	Wet	3	3	9
2025-03-23	0.729134	1.502756	0.929134	Normal	2	2	4
2025-02-21	0.302756	0.996457	0.472441	Normal	2	1	2
Result							Wetter than Normal - 15

US Army Corps of Engineers

ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by:
U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
U OF MN ST PAUL	44.9903, -93.18	970.144	6.131	76.391	3.227	11308	90
FALCON HEIGHTS 0.4 NNW	44.9956, -93.1793	979.003	0.368	8.859	0.169	2	0
ST PAUL 3SW	44.9311, -93.1539	924.869	4.285	45.275	2.122	31	0
LOWER ST ANTHONY FALLS	44.9786, -93.2469	753.937	3.368	216.207	2.244	12	0

APPENDIX C

MN DNR Natural Heritage Review

DEPARTMENT OF NATURAL RESOURCES

Formal Natural Heritage Review - Cover Page

See next page for results of review. A draft watermark means the project details have not been finalized and the results are not official.

Project Name: CH - 800 53rd Ave Apts

Project Proposer: Lincoln Avenue Communities

Project Type: Development, Residential

Project Type Activities: Structure Removal or Bridge Removal

TRS: T30 R24 S26

County(s): Anoka

DNR Admin Region(s): Central

Reason Requested: State EAW

Project Description: redevelopment of existing commercial site to residential. Remove existing building & parking lot and construct new apartment buildings and townhomes.

Existing Land Uses: Office building with parking lot

Landcover / Habitat Impacted: paved surfaces

Waterbodies Affected: Existing pond receives current runoff. Storm sewer system will be upgraded and improved with current standards.

Groundwater Resources Affected: No affects to groundwater anticipated.

Previous Natural Heritage Review: No

Previous Habitat Assessments / Surveys: No

SUMMARY OF AUTOMATED RESULTS

Category	Results	Response By Category
Project Details	No Comments	No Further Review Required
Ecologically Significant Area	No Comments	No Further Review Required
State-Listed Endangered or Threatened Species	Needs Further Review	State-protected Species - Needs Further Review
State-Listed Species of Special Concern	Comments	Recommendations
Federally Listed Species	No Records	Visit IPaC For Federal Review

DEPARTMENT OF NATURAL RESOURCES

April 10, 2025

Project Name: CH - 800 53rd Ave Apts
Project Proposer: Lincoln Avenue Communities
Project Type: Development, Residential
Project ID: MCE #2025-00353

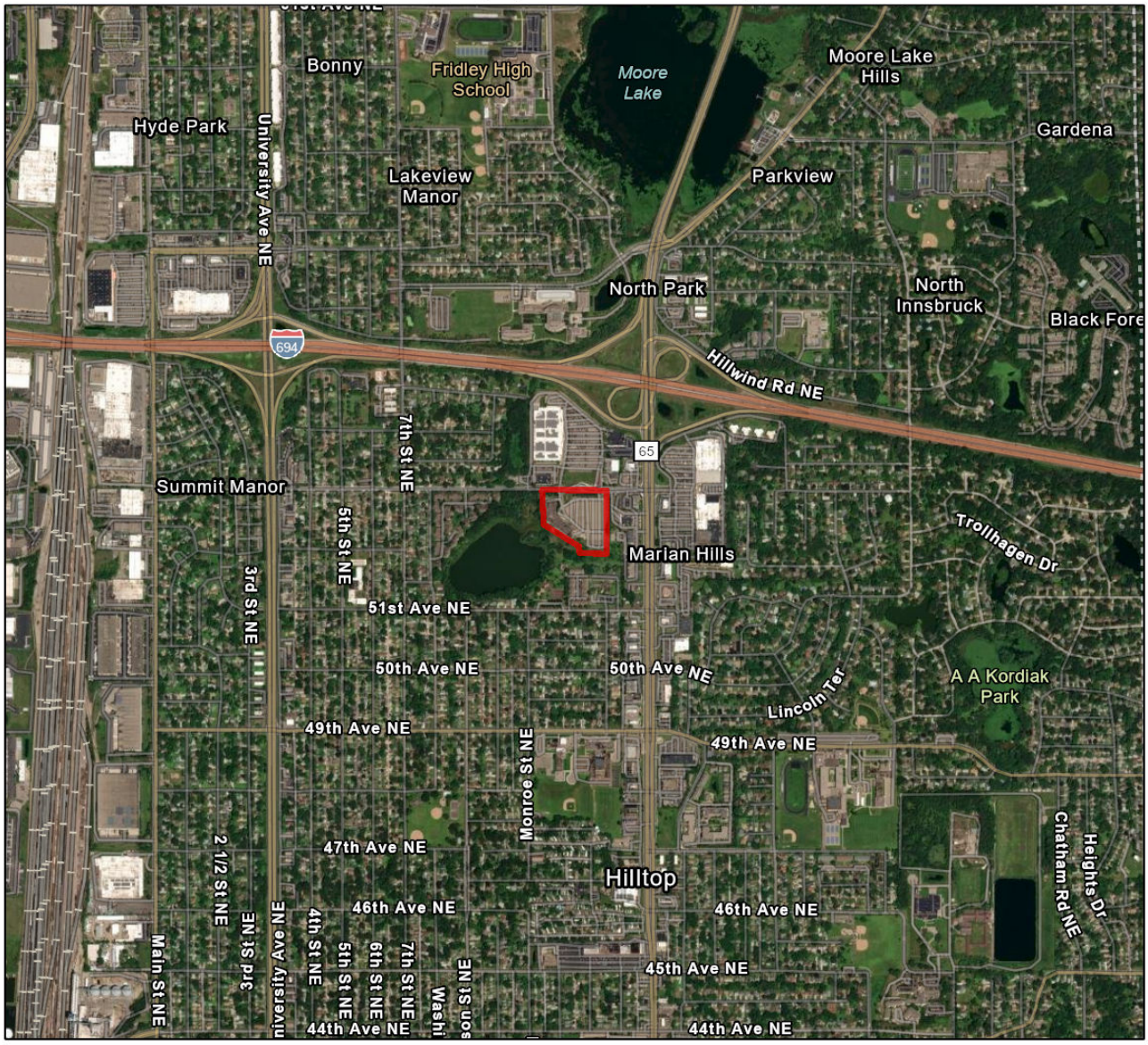
AUTOMATED RESULTS: FURTHER REVIEW IS NEEDED
As requested, the above project has undergone an automated review for potential impacts to rare features. Based on this review, one or more rare features may be impacted by the proposed project and further review by the Natural Heritage Review Team is needed. You will receive a separate notification email when the review process is complete and the Natural Heritage Review letter has been posted.

Please refer to the table on the cover page of this report for a summary of potential impacts to rare features. For additional information or planning purposes, use the Explore Page in Minnesota Conservation Explorer to view the potentially impacted rare features or to create a Conservation Planning Report for the proposed project.

If you have additional information to help resolve the potential impacts listed in the summary results, please attach related project documentation in the Edit Details tab of the Project page. Relevant information includes, but is not limited to, additional project details, completed habitat assessments, or survey results. This additional information will be considered during the project review.

CH - 800 53rd Ave Apts

Aerial Imagery With Locator Map



N
W E
S

0 0.13 0.25 0.5 0.75 1 Miles

Project Boundary

Project Type: Development, Residential

Project Size (acres): 9.09

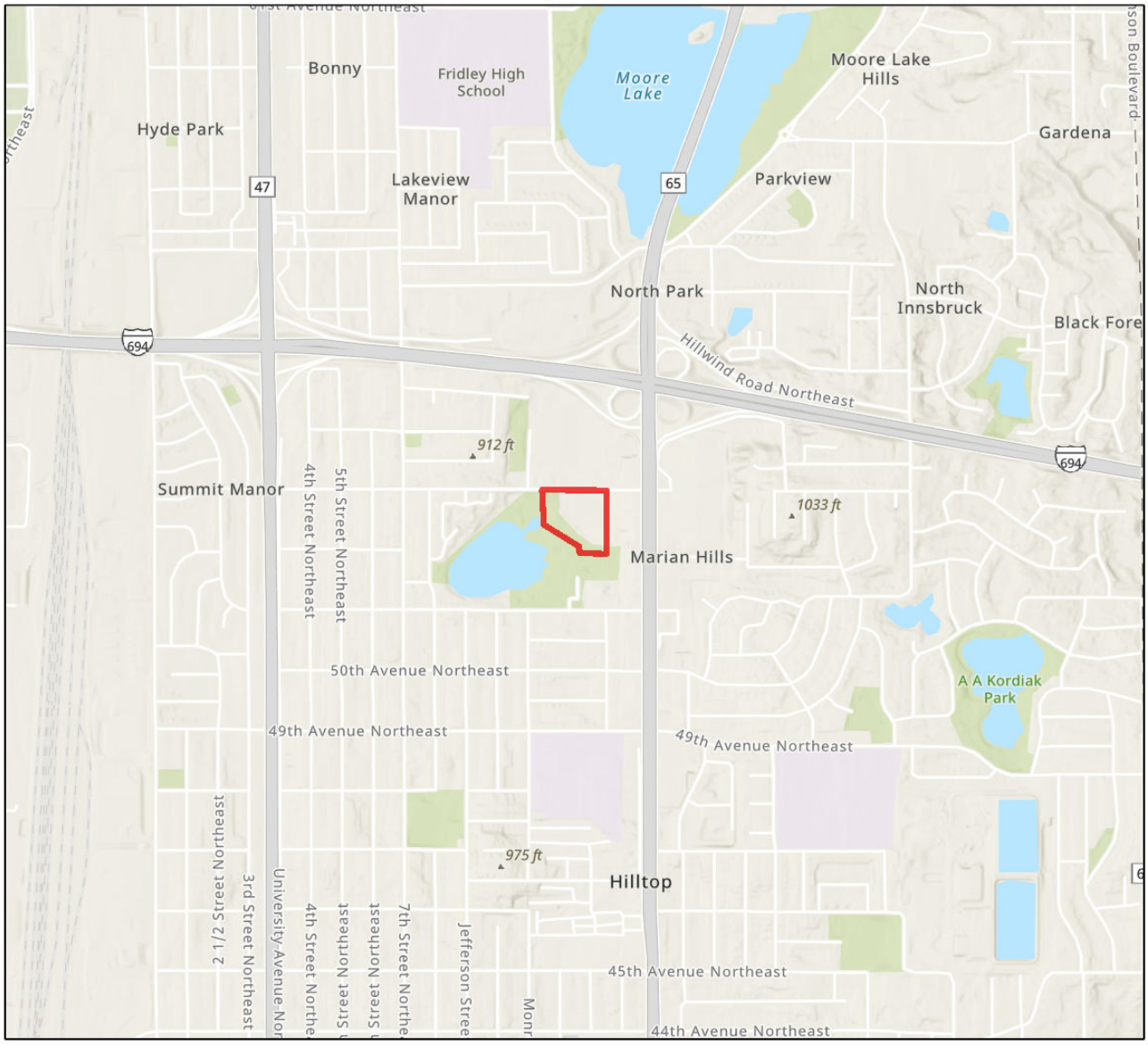
County(s): Anoka

TRS: T30 R24 S26

Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, USFWS
Metropolitan Council, MetroGIS, Three Rivers Park District, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US

CH - 800 53rd Ave Apts

USA Topo Basemap With Locator Map



Project Boundary

Project Type: Development, Residential

Project Size (acres): 9.09

County(s): Anoka

TRS: T30 R24 S26

APPENDIX D

U.S. Fish and Wildlife Service
National Resource Review

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Minnesota-Wisconsin Ecological Services Field Office
3815 American Blvd East
Bloomington, MN 55425-1659
Phone: (952) 858-0793

In Reply Refer To: 04/10/2025 18:52:44 UTC
Project code: 2025-0081694
Project Name: 800 53rd Avenue Apts.

Federal Nexus: no
Federal Action Agency (if applicable):

Subject: Record of project representative's no effect determination for '800 53rd Avenue Apts.'

Dear todd mclouth:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on April 10, 2025, for '800 53rd Avenue Apts.' (here forward, Project). This project has been assigned Project Code 2025-0081694 and all future correspondence should clearly reference this number. **Please carefully review this letter.**

Ensuring Accurate Determinations When Using IPaC

The Service developed the IPaC system and associated species' determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into IPaC must accurately represent the full scope and details of the Project.

Failure to accurately represent or implement the Project as detailed in IPaC or the **Northern Long-eared Bat and Tricolored Bat Range-wide Determination Key (Dkey)**, invalidates this letter. ***Answers to certain questions in the DKey commit the project proponent to implementation of conservation measures that must be followed for the ESA determination to remain valid.***

Determination for the Northern Long-Eared Bat and/or Tricolored Bat

Based upon your IPaC submission and a standing analysis, your project has reached the following effect determinations:

Species	Listing Status	Determination
Tricolored Bat (*Perimyotis subflavus*)	Proposed Endangered	No effect

Federal agencies must consult with U.S. Fish and Wildlife Service under section 7(a)(2) of the Endangered Species Act (ESA) when an action *may affect* a listed species. Tricolored bat is proposed for listing as endangered under the ESA, but not yet listed. For actions that may affect a proposed species, agencies cannot consult, but they can *confer* under the authority of section 7(a)(4) of the ESA. Such conferences can follow the procedures for a consultation and be adopted as such if and when the proposed species is listed. Should the tricolored bat be listed, agencies must review projects that are not yet complete, or projects with ongoing effects within the tricolored bat range that previously received a NE or NLAA determination from the key to confirm that the determination is still accurate.

To make a no effect determination, the full scope of the proposed project implementation (action) should not have any effects (either positive or negative), to a federally listed species or designated critical habitat. Effects of the action are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action. (See § 402.17).

Under Section 7 of the ESA, if a federal action agency makes a no effect determination, no consultation with the Service is required (ESA §7). If a proposed Federal action may affect a listed species or designated critical habitat, formal consultation is required except when the Service concurs, in writing, that a proposed action "is not likely to adversely affect" listed species or designated critical habitat [50 CFR §402.02, 50 CFR§402.13].

Other Species and Critical Habitat that May be Present in the Action Area

The IPaC-assisted determination key for the northern long-eared bat and tricolored bat does not apply to the following ESA-protected species and/or critical habitat that also may occur in your Action area:

- Monarch Butterfly *Danaus plexippus* Proposed Threatened
- Salamander Mussel *Simpsonaias ambigua* Proposed Endangered
- Whooping Crane *Grus americana* Experimental Population, Non-Essential

You may coordinate with our Office to determine whether the Action may affect the animal species listed above and, if so, how they may be affected.

Next Steps

If there are no updates on listed species, no further consultation/coordination for this project is required with respect to the species covered by this key. However, the Service recommends that project proponents re-evaluate the Project in IPaC if: 1) the scope, timing, duration, or location of the Project changes (includes any project changes or amendments); 2) new information reveals the Project may impact (positively or negatively) federally listed species or designated critical

habitat; or 3) a new species is listed, or critical habitat designated. If any of the above conditions occurs, additional coordination with the Service should take place to ensure compliance with the Act.

If you have any questions regarding this letter or need further assistance, please contact the Minnesota-Wisconsin Ecological Services Field Office and reference Project Code 2025-0081694 associated with this Project.

Action Description
You provided to IPaC the following name and description for the subject Action.

1. Name

800 53rd Avenue Apts.

2. Description

The following description was provided for the project '800 53rd Avenue Apts.':

> redevelop existing office building and parking lot site to residential apartments and townhomes.

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@45.06326885,-93.25043464759764,14z

DETERMINATION KEY RESULT

Based on the information you provided, you have determined that the Proposed Action will have no effect on the species covered by this determination key. Therefore, no consultation with the U.S. Fish and Wildlife Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (87 Stat. 884, as amended 16 U.S.C. 1531 *et seq.*) is required for those species.

QUALIFICATION INTERVIEW

1. Does the proposed project include, or is it reasonably certain to cause, intentional take of listed bats or any other listed species?

   Note: Intentional take is defined as take that is the intended result of a project. Intentional take could refer to research, direct species management, surveys, and/or studies that include intentional handling/encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered or proposed species?

   No

2. Is the action area wholly within Zone 2 of the year-round active area for northern long-eared bat and/or tricolored bat?

   Automatically answered
   No

3. Does the action area intersect Zone 1 of the year-round active area for northern long-eared bat and/or tricolored bat?

   Automatically answered
   No

4. Does any component of the action involve leasing, construction or operation of wind turbines? Answer 'yes' if the activities considered are conducted with the intention of gathering survey information to inform the leasing, construction, or operation of wind turbines.

   Note: For federal actions, answer ‘yes’ if the construction or operation of wind power facilities is either (1) part of the federal action or (2) would not occur but for a federal agency action (federal permit, funding, etc.).

   No

5. Is the proposed action authorized, permitted, licensed, funded, or being carried out by a Federal agency in whole or in part?

   No

6. [Semantic] Is the action area located within 0.5 miles of a known bat hibernaculum?

   Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency.

   Automatically answered
   No

7. Does the action area contain any winter roosts or caves (or associated sinkholes, fissures, or other karst features), mines, rocky outcroppings, or tunnels that could provide habitat for hibernating bats?

   No

8. Does the action area contain (1) talus or (2) anthropogenic or naturally formed rock shelters or crevices in rocky outcrops, rock faces or cliffs?

   No

9. Will the action cause effects to a bridge?

   Note: Covered bridges should be considered as bridges in this question.

   No

10. Will the action result in effects to a culvert or tunnel at any time of year?

    No

11. Are trees present within 1000 feet of the action area?

    Note: If there are trees within the action area that are of a sufficient size to be potential roosts for bats answer "Yes". If unsure, additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines.

    No

12. Does the action area intersect the tricolored bat species list area?

    Automatically answered
    Yes

13. [Semantic] Is the action area located within 0.25 miles of a culvert that is known to be occupied by northern long-eared or tricolored bats?

    Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency.

    Automatically answered
    No

14. Do you have any documents that you want to include with this submission?

    Yes

    SUBMITTED DOCUMENTS

    - *23226-AN-ALTA-06-02-23.pdf https://ipac.ecosphere.fws.gov/project/7XGYJYXO7FG75PT2F6EGTVGSX4/projectDocuments/160485317*

PROJECT QUESTIONNAIRE

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: todd mclouth
Address: 12755 Hwy 55, Ste R100
City: Plymouth
State: MN
Zip: 55441
Email tmclouth@loucksinc.com
Phone: 6122072986

APPENDIX E

Green House Gas Emissions Summary

Back to Intro

EPA CENTER FOR CORPORATE CLIMATE LEADERSHIP
U.S. Environmental Protection Agency

Emissions Summary

Guidance

The total GHG emissions from each source category are provided below. You may also use this summary sheet to fill out the *Annual GHG Inventory Summary and Target Tracking Form* (.xls) as this Calculator only quantifies one year of emissions at a time. The form is available here: https://www.epa.gov/climateleadership/target-setting

By entering the data below into the appropriate cell of the *Annual GHG Inventory Summary and Target Tracking Form,* you will be able to compare multiple years of data.

If you have multiple Calculator files covering sub-sets of your inventory for a particular reporting period, sum each of the emission categories (e.g. Stationary Combustion) to an organizational total, which then can be entered into the *Annual GHG Inventory Summary and Target Tracking Form* .

(A) Enter organization information into the orange cells. Other cells on this sheet will be automatically calculated from the data entered in the sheets in this workbook. Blue cells indicate required emission sources if applicable. Green cells indicate scope 3 emission sources and offsets, which organizations may optionally include in its inventory.

(B) The "Go To Sheet" buttons can be used to navigate to the data entry sheets.

Organizational Information:

Organization Name:	
	800 West 53rd Ave. Aprartments
Organization Address:	Columbia Heights, MN
Inventory Reporting Period:	*2024 EAW Estimator*
Start:	*1/1/2023*
End:	*1/1/2024*
Name of Preparer:	Loucks
Contact Information of Preparer:	
Date Prepared:	5/20/2025

Summary of Organization's Emissions:

Scope 1 Emissions

		CO_2-e (metric tons)
Go To Sheet	Stationary Combustion	1,148
Go To Sheet	Mobile Sources	2,085
Go To Sheet	Refrigeration / AC Equipment Use	5,133
Go To Sheet	Fire Suppression	0
Go To Sheet	Purchased Gases	0

	CO2-e (metric tons)		
	Gross	Offsets	Net
Scope 1 Summary	8,366	0	8,366

Scope 2 Emissions

	Location-Based Scope 2 Emissions	CO_2-e (metric tons)
Go To Sheet	Purchased and Consumed Electricity	2,200
Go To Sheet	Purchased and Consumed Steam	0

	CO_2-e (metric tons)		
	Gross	Offsets	Net
Location-Based Scope 2 Summary	2,200	0	2,200

	Market-Based Scope 2 Emissions	CO_2-e (metric tons)
Go To Sheet	Purchased and Consumed Electricity	2,200
Go To Sheet	Purchased and Consumed Steam	0

	CO_2-e (metric tons)		
	Gross	Offsets	Net
Market-Based Scope 2 Summary	2,200	0	2,200

Scope 1 & 2 Summary

	CO_2-e (metric tons)	
	Gross	Net
Total Scope 1 & Location-Based Scope 2	10,566	10,566
Total Scope 1 & Market-Based Scope 2	10,566	10,566

Scope 3 Emissions

		CO_2-e (metric tons)		
		Gross	Offsets	Net
Go To Sheet	Business Travel	0	0	0
Go To Sheet	Employee Commuting	0	0	0
Go To Sheet	Upstream Transportation and Distribution	0	0	0
Go To Sheet	Waste	383	0	383

Scope 1 Emissions from Stationary Combustion Sources

EPA CENTER FOR CORPORATE CLIMATE LEADERSHIP
U.S. Environmental Protection Agency

Guidance

(A) Enter annual data for each combustion unit, facility, or site (by fuel type) in ORANGE cells on **Table 1**. Example entry is shown in first row (*GREEN Italics*).
- Select "Fuel Combusted" from drop down box.
- Enter "Quantity Combusted" and choose the appropriate units from the drop down box in the unit column. If it's necessary to convert units, common heat contents can be found on the "Heat Content" sheet and unit conversions on the "Unit Conversion" sheet.

(B) If fuel is consumed in a facility but stationary fuel consumption data are not available, an estimate should be made for completeness. See the "Items to Note" section of the Help sheet for suggested estimation approaches.

(C) Biomass CO_2 emissions are not reported in the total emissions, but are reported separately at the bottom of the sheet.

Table 1. Stationary Source Fuel Combustion

Source ID	Source Description	Source Area (sq ft)	Fuel Combusted	Fuel State (solid, liquid, gas)	Quantity Combusted	Units
BLR-012	*East Power Plant*	*12,517*	*Natural Gas*	*Gas*	*10,000*	*MMBtu*
Ex. Office	Existing Office Building	135,000	Natural Gas	Gas	0	Gallons
						SCF
Prop1	Apartment Buildings	440,000	Natural Gas	Gas	21,072,000	SCF
Prop 2	Commercial/Retail	12,000	Natural Gas	Gas	312,000	
Prop 3	Multi-Family Townhomes	140,940	Natural Gas	Gas	3,480,000	

GHG Emissions

Total Organization-Wide Stationary Source Combustion by Fuel Type

Fuel Type	Quantity Combusted	Units
Coal and Coke - Solid		
Anthracite Coal	0	short ton
Bituminous Coal	0	short ton
Sub-bituminous Coal	0	short ton
Lignite Coal	0	short ton
Mixed (Commercial Sector)	0	short ton
Mixed (Electric Power Sector)	0	short ton
Mixed (Industrial Coking)	0	short ton
Mixed (Industrial Sector)	0	short ton
Coal Coke	0	short ton
Other Fuels - Solid		
Municipal Solid Waste	0	short ton
Petroleum Coke (Solid)	0	short ton
Plastics	0	short ton
Tires	0	short ton

Biomass Fuels - Solid		
Agricultural Byproducts	0	short ton
Peat	0	short ton
Solid Byproducts	0	short ton
Wood and Wood Residuals	0	short ton
Gaseous Fuels		
Natural Gas	21,072,000	scf
Propane Gas	0	scf
Landfill Gas	0	scf
Petroleum Products		
Distillate Fuel Oil No. 2	0	gallons
Residual Fuel Oil No. 6	0	gallons
Kerosene	0	gallons
Liquefied Petroleum Gases (LPG)	0	gallons
Biomass Fuels - Liquid		
Biodiesel (100%)	0	gallons
Ethanol (100%)	0	gallons
Rendered Animal Fat	0	gallons
Vegetable Oil	0	gallons

Total Organization-Wide CO_2, CH_4 and N_2O Emissions from Stationary Source Fuel Combustion

Fuel Type	CO_2 (kg)	CH_4 (g)	N_2O (g)
Coal and Coke - Solid			
Anthracite Coal	0	0.0	0.0
Bituminous Coal	0	0.0	0.0
Sub-bituminous Coal	0	0.0	0.0
Lignite Coal	0	0.0	0.0
Mixed (Commercial Sector)	0	0.0	0.0
Mixed (Electric Power Sector)	0	0.0	0.0
Mixed (Industrial Coking)	0	0.0	0.0
Mixed (Industrial Sector)	0	0.0	0.0
Coal Coke	0	0.0	0.0
Other Fuels - Solid			
Municipal Solid Waste	0	0.0	0.0
Petroleum Coke (Solid)	0	0.0	0.0
Plastics	0	0.0	0.0
Tires	0	0.0	0.0
Gaseous Fuels			
Natural Gas	1,147,160	21,704.2	2,107.2
Propane Gas	0	0.0	0.0
Landfill Gas	0	0.0	0.0
Petroleum Products			
Distillate Fuel Oil No. 2	0	0.0	0.0
Residual Fuel Oil No. 6	0	0.0	0.0
Kerosene	0	0.0	0.0
Liquefied Petroleum Gases (LPG)	0	0.0	0.0
Total Fossil Fuel Emissions	**1,147,160**	**21,704.2**	**2,107.2**
Biomass Fuels - Solid			
Agricultural Byproducts	0	0.0	0.0
Peat	0	0.0	0.0
Solid Byproducts	0	0.0	0.0
Wood and Wood Residuals	0	0.0	0.0
Biomass Fuels - Liquid			
Biodiesel (100%)	0	0.0	0.0
Ethanol (100%)	0	0.0	0.0
Rendered Animal Fat	0	0.0	0.0
Vegetable Oil	0	0.0	0.0
Total Non-Fossil Fuel Emissions	**0**	**0.0**	**0.0**
Total Emissions for all Fuels	**1,147,160**	**21,704.2**	**2,107.2**

Total CO_2 Equivalent Emissions (metric tons) - Stationary Combustion	**1,148.3**
Total Biomass CO_2 Equivalent Emissions (metric tons) - Stationary Combustion	**0.0**

Back to Intro | Back to Summary | Help

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U.S. Environmental Protection Agency

Scope 1 Emissions from Mobile Sources

Guidance

(A) Enter annual data for each vehicle or group of vehicles (grouped by vehicle type, vehicle year, and fuel type) in ORANGE cells in **Table 1**. Example entry is shown in first row (GREEN *Italics*). Only enter vehicles owned or leased by your organization on this sheet. All other vehicle use such as employee commuting or business travel is considered a scope 3 emissions source and should be reported in the corresponding scope 3 sheets.

- *Note: The latest mobile combustion factors reflect year 2021 data. Therefore, for all vehicle model years 2022 onward, the 2021 year factor is used.*
- *Select "On-Road" or "Non-Road" from the drop down box to determine the Vehicle Types available. You* ***must make this selection before picking the vehicle type.***
- Select "Vehicle Type" from drop down box (closest type available).
- Enter "Fuel Usage" in appropriate units (units appear when vehicle type is selected).
  - If mileage or fuel usage is unknown, estimate using approximate fuel economy values from the manufacturer, www.fueleconomy.gov, or the Reference Table below.
  - Vehicle year and Miles traveled are not necessary for non-road equiment.

(B) When using biofuels, typically the biofuel (biodiesel or ethanol) is mixed with a petroleum fuel (diesel or gasoline) for use in vehicles. Enter the biodiesel and ethanol percentages of the fuel if known, or leave default values shown below.

Biodiesel Percent:	20	%
Ethanol Percent:	80	%

(C) Biomass CO_2 emissions from biodiesel and ethanol are not reported in the total emissions, but are reported separately at the bottom of the sheet.

Table 1. Mobile Source Fuel Combustion and Miles Traveled

Source ID	Source Description	On-Road or Non-Road?	Vehicle Type	Vehicle Year	Fuel Usage	Units	Miles Traveled
Fleet-012	*HQ Fleet*	*OnRoad*	*Passenger Cars - Gasoline*	*2019*	*500*	*gal*	*12,400*
Construction - Grading	Dev. Area	NonRoad	Construction/Mining Equipment - Diesel Equipment	2023	48,000	gal	
Construction - Site Utilities	Dev. Area	NonRoad	Construction/Mining Equipment - Diesel Equipment	2023	32,000	gal	
Construction - Roads	Dev. Area	NonRoad	Construction/Mining Equipment - Diesel Equipment	2023	32,000	gal	
Construction - Building Sites	Dev. Area	OnRoad	Construction/Mining Equipment - Diesel Equipment	2023	18,000	gal	
Construction - Building Sites	Dev. Area	OnRoad	Construction/Mining Equipment - Gasoline (4 stroke)	2023	78,000	gal	

Reference Table: Average Fuel Economy by Vehicle Type

Vehicle Type	Average Fuel Economy (mpg)
Passenger Cars	24.8
Other 2-Axle, 4-Tire Vehicles	18.1
Motorcycles	44.0
Single unit 2-Axle 6-Tire or More Trucks	7.9
Combination Trucks	6.9
Diesel Buses (Diesel Heavy-Duty Vehicles)	7.4

Average mpg values from the U.S. Department of Transportation, Federal Highway Administration, Highway Statistics 2022 (Updated February 2024), Table VM-1.

GHG Emissions

Total Organization-Wide Mobile Source Fuel Usage and CO_2 Emissions (On-Road and Off-Road Vehicles)

Fuel Type	Fuel Usage	Units	CO_2 (kg)
Motor Gasoline	78,000	gallons	684,840
Diesel Fuel	130,000	gallons	1,327,300
Residual Fuel Oil	0	gallons	0
Aviation Gasoline	0	gallons	0

Kerosene-Type Jet Fuel	0	gallons	0	
Liquefied Petroleum Gases (LPG)	0	gallons	0	
Ethanol	0	gallons	0	*Note: emissions here are only for the ga*
Biodiesel	0	gallons	0	*Note: emissions here are only for the die*
Liquefied Natural Gas (LNG)	0	gallons	0	
Compressed Natural Gas (CNG)	0	scf	0	

Total Organization-Wide On-Road Gasoline Mobile Source Mileage and CH_4/N_2O Emissions

Vehicle Type	Vehicle Year	Mileage (miles)	CH_4 (g)	N_2O (g)
Passenger Cars - Gasoline	1984-93	0	0.0	0.0
	1994	0	0.0	0.0
	1995	0	0.0	0.0
	1996	0	0.0	0.0
	1997	0	0.0	0.0
	1998	0	0.0	0.0
	1999	0	0.0	0.0
	2000	0	0.0	0.0
	2001	0	0.0	0.0
	2002	0	0.0	0.0
	2003	0	0.0	0.0
	2004	0	0.0	0.0
	2005	0	0.0	0.0
	2006	0	0.0	0.0
	2007	0	0.0	0.0
	2008	0	0.0	0.0
	2009	0	0.0	0.0
	2010	0	0.0	0.0
	2011	0	0.0	0.0
	2012	0	0.0	0.0
	2013	0	0.0	0.0
	2014	0	0.0	0.0
	2015	0	0.0	0.0
	2016	0	0.0	0.0
	2017	0	0.0	0.0
	2018	0	0.0	0.0
	2019	0	0.0	0.0
	2020	0	0.0	0.0
	2021	0	0.0	0.0
	2022	0	0.0	0.0
	2023	0	0.0	0.0
	2024	0	0.0	0.0
Light-Duty Trucks - Gasoline	1987-93	0	0.0	0.0
(Vans, Pickup Trucks, SUVs)	1994	0	0.0	0.0
	1995	0	0.0	0.0
	1996	0	0.0	0.0
	1997	0	0.0	0.0
	1998	0	0.0	0.0
	1999	0	0.0	0.0
	2000	0	0.0	0.0
	2001	0	0.0	0.0
	2002	0	0.0	0.0
	2003	0	0.0	0.0
	2004	0	0.0	0.0
	2005	0	0.0	0.0
	2006	0	0.0	0.0
	2007	0	0.0	0.0
	2008	0	0.0	0.0
	2009	0	0.0	0.0
	2010	0	0.0	0.0
	2011	0	0.0	0.0
	2012	0	0.0	0.0
	2013	0	0.0	0.0
	2014	0	0.0	0.0

	2015	0	0.0	0.0
	2016	0	0.0	0.0
	2017	0	0.0	0.0
	2018	0	0.0	0.0
	2019	0	0.0	0.0
	2020	0	0.0	0.0
	2021	0	0.0	0.0
	2022	0	0.0	0.0
	2023	0	0.0	0.0
	2024	0	0.0	0.0
Heavy-Duty Vehicles - Gasoline	1985-86	0	0.0	0.0
	1987	0	0.0	0.0
	1988-1989	0	0.0	0.0
	1990-1995	0	0.0	0.0
	1996	0	0.0	0.0
	1997	0	0.0	0.0
	1998	0	0.0	0.0
	1999	0	0.0	0.0
	2000	0	0.0	0.0
	2001	0	0.0	0.0
	2002	0	0.0	0.0
	2003	0	0.0	0.0
	2004	0	0.0	0.0
	2005	0	0.0	0.0
	2006	0	0.0	0.0
	2007	0	0.0	0.0
	2008	0	0.0	0.0
	2009	0	0.0	0.0
	2010	0	0.0	0.0
	2011	0	0.0	0.0
	2012	0	0.0	0.0
	2013	0	0.0	0.0
	2014	0	0.0	0.0
	2015	0	0.0	0.0
	2016	0	0.0	0.0
	2017	0	0.0	0.0
	2018	0	0.0	0.0
	2019	0	0.0	0.0
	2020	0	0.0	0.0
	2021	0	0.0	0.0
	2022	0	0.0	0.0
	2023	0	0.0	0.0
	2024	0	0.0	0.0
Motorcycles - Gasoline	1960-1995	0	0.0	0.0
	1996-2005	0	0.0	0.0
	2006-2024	0	0.0	0.0

Total Organization-Wide On-Road Non-Gasoline Mobile Source Mileage and CH_4/N_2O Emissions

Vehicle Type	Fuel Type	Vehicle Year	Mileage (miles)	CH_4 (g)	N_2O (g)
Passenger Cars - Diesel	Diesel	1960-1982	0	0.0	0.0
		1983-2006	0	0.0	0.0
		2007-2024	0	0.0	0.0
Light-Duty Trucks - Diesel	Diesel	1960-1982	0	0.0	0.0
		1983-2006	0	0.0	0.0
		2007-2024	0	0.0	0.0
Medium- and Heavy-Duty Vehicles -	Diesel	1960-2006	0	0.0	0.0
		2007-2024	0	0.0	0.0
Light-Duty Cars	Methanol		0	0.0	0.0
	Ethanol		0	0.0	0.0
	CNG		0	0.0	0.0
	LPG		0	0.0	0.0
	Biodiesel		0	0.0	0.0
	Ethanol		0	0.0	0.0

Light-Duty Trucks	CNG		0	0.0	0.0
	LPG		0	0.0	0.0
	LNG		0	0.0	0.0
	Biodiesel		0	0.0	0.0
Medium-Duty Trucks	CNG		0	0.0	0.0
	LPG		0	0.0	0.0
	LNG		0	0.0	0.0
	Biodiesel		0	0.0	0.0
Heavy-Duty Trucks	Methanol		0	0.0	0.0
	Ethanol		0	0.0	0.0
	CNG		0	0.0	0.0
	LPG		0	0.0	0.0
	LNG		0	0.0	0.0
	Biodiesel		0	0.0	0.0
Buses	Methanol		0	0.0	0.0
	Ethanol		0	0.0	0.0
	CNG		0	0.0	0.0
	LPG		0	0.0	0.0
	LNG		0	0.0	0.0
	Biodiesel		0	0.0	0.0

Total Organization-Wide Non-Road Mobile Source Fuel Usage and CH_4/N_2O Emissions

Vehicle Type	Fuel Type	Fuel Usage (gallons)	CH_4 (g)	N_2O (g)
Ships and Boats	Residual Fuel Oil	0	0.0	0.0
	Gasoline (2 stroke)	0	0.0	0.0
	Gasoline (4 stroke)	0	0.0	0.0
	Diesel	0	0.0	0.0
Locomotives	Diesel	0	0.0	0.0
Aircraft	Jet Fuel	0	0.0	0.0
	Aviation Gasoline	0	0.0	0.0
Agricultural Equipment	Gasoline (2 stroke)	0	0.0	0.0
	Gasoline (4 stroke)	0	0.0	0.0
	Gasoline Off-Road Trucks	0	0.0	0.0
	Diesel Equipment	0	0.0	0.0
	Diesel Off-Road Trucks	0	0.0	0.0
	LPG	0	0.0	0.0
Construction/Mining Equipment	Gasoline (2 stroke)	0	0.0	0.0
	Gasoline (4 stroke)	78000	222484.9	114943.3
	Gasoline Off-Road Trucks	0	0.0	0.0
	Diesel Equipment	130000	131513.1	122386.0
	Diesel Off-Road Trucks	0	0.0	0.0
	LPG	0	0.0	0.0
Lawn and Garden Equipment	Gasoline (2 stroke)	0	0.0	0.0
	Gasoline (4 stroke)	0	0.0	0.0
	Diesel	0	0.0	0.0
	LPG	0	0.0	0.0
Airport Equipment	Gasoline	0	0.0	0.0
	Diesel	0	0.0	0.0
	LPG	0	0.0	0.0
Industrial/Commercial Equipment	Gasoline (2 stroke)	0	0.0	0.0
	Gasoline (4 stroke)	0	0.0	0.0
	Diesel	0	0.0	0.0
	LPG	0	0.0	0.0
Logging Equipment	Gasoline (2 stroke)	0	0.0	0.0
	Gasoline (4 stroke)	0	0.0	0.0
	Diesel	0	0.0	0.0
Railroad Equipment	Gasoline	0	0.0	0.0
	Diesel	0	0.0	0.0
	LPG	0	0.0	0.0
Recreational Equipment	Gasoline (2 stroke)	0	0.0	0.0
	Gasoline (4 stroke)	0	0.0	0.0
	Diesel	0	0.0	0.0

	LPG	0	0.0	0.0

Total CO_2 Equivalent Emissions (metric tons) - Mobile Sources	**2,084.9**
Total Biomass CO_2 Equivalent Emissions (metric tons) - Mobile Sources	**0.0**

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U.S. Environmental Protection Agency

Scope 1 Emissions from Refrigeration and Air Conditioning Equipment

Guidance

(A) HFC, PFC, CO_2, and SF_6 refrigerants from facilities and vehicles are required to be included in the GHG inventory. Ozone depleting substances, such as CFCs and HCFCs, are regulated internationally and are typically excluded from a GHG inventory or reported as a memo item.

(B) Select ONE of the three options with which to estimate emissions. Options range from most preferred method (Option 1) to least preferred method (Option 3). Limited data availability often makes Option 3 an appropriate choice. If Option 3 is used and emissions are determined to be significant when compared to other emission sources, consider using one of the other methods to calculate emissions more accurately.

(C) Enter annual data in ORANGE cells as appropriate for the selected option.

Option 1. Material Balance Method: Enter organization-wide total gases stored and transferred (by gas) in Table 1.
- Choose the appropriate gas from the Gas drop down menu.
- Inventory Change = difference of gas stored in inventory from beginning to end of reporting period. (Includes only gas stored on-site (i.e. cylinders) and not gas contained within equipment).
- Transferred Amount = gas purchased minus gas sold/disposed during reporting period.
  -- Gas purchased includes: Purchases for inventory, as part of equipment servicing (not from inventory), within purchased equipment, and gas returned to the site after off-site recycling.
  -- Gas sold/disposed includes: Returns to supplier, sales or disposals (including within equipment), and gas sent off-site for recycling, reclamation, or destruction.
- Capacity Change = capacity of all units at beginning minus capacity of all units at end of reporting period. (can be assumed to be capacity of retired units minus capacity of new units).

Table 1. Organization-Wide Refrigeration Gas CO_2 Equivalent Emissions - Material Balance

Gas	Gas GWP	Inventory Change (kg)	Transferred Amount (kg)	Capacity Change (kg)	CO_2 Equivalent Emissions (kg)

Option 2. Material Balance Method (Simplified): Enter organization-wide total gases in units (by gas) in Table 2.
- Choose the appropriate gas from the drop down menu.
- New units are those installed during reporting period (do not include any data for new units pre-charged by supplier), disposed units were disposed of during the reporting period, and existing units are all others.
- Charge/Recharge = gas added to units by organization or a contractor (do not include pre-charge by manufacturer).
- Capacity = sum of the full capacity for all units (do not include new units pre-charged by manufacturer).
- Amount recovered = total gas recovered from all retired units.

Table 2. Organization-Wide Refrigeration Gas CO_2 Equivalent Emissions - Simplified Material Balance

Gas	Gas GWP	New Units		Existing Units	Disposed Units		CO_2 Equivalent Emissions (kg)
		Charge (kg)	Capacity (kg)	Recharge (kg)	Capacity (kg)	Recovered (kg)	

Option 3. Screening Method: Enter refrigerant information for each unit or group of units (by refrigerant) in **Table 3.**

- Select the "Type of Equipment" (closest available) and "Gas" from the drop down box.
- Enter amount of refrigerant added to new units by the organization (not pre-charged amount from manufacturer). This will be blank if no refrigerant is added to new units by the organization.
- Enter the Number of Months in Operation - this is the number of months in the year the unit was operating (from 0-12). For example, if the equipment was installed at the beginning of July, enter 6.
- Enter refrigerant capacity (by equipment type and refrigerant) for all units operating and disposed during reporting period.
  - -- If data entered for multiple units, sum the capacities or charge quantity for all like units.
  - -- If capacity of unit(s) is not known, use upper value of default capacity provided in the **Reference Table** below.
  - -- If no units are disposed, Disposed Units will be blank
- See example entry in first row (*GREEN Italics*).

Table 3. Source Level Refrigeration Gas CO_2 Equivalent Emissions - Screening Method

Source ID	Type of Equipment	Gas	Gas GWP	New Units Charge (kg)	Number of Months in Operation in Reporting Year	Capacity		CO_2 Equivalent Emissions (kg)
						Operating Units (kg)	Disposed Units (kg)	
Bldg-012	*Domestic Refrigeration*	*HFC-32*	677	*1000*	*12*	*0.5*	*0.25*	*6,812.3*
Prop. Apartment Buildings	Medium/Large Commercial	HFC-32	677		12	18,000.00		4,265,100.0
Props. Commercial Space	Medium/Large Commercial	HFC-32	677		12	2,000.00		473,900.0
Townhomes	Residential/Commercial A/C	HFC-32	677		12	5,800.00		392,660.0
Refrigerators	Domestic Refrigeration	HFC-32	677		12	249.00		842.9

Reference Table: Type of Equipment and Default Capacity Ranges (Lower to Upper Range) for Table 3

Type of Equipment	Equipment Description	Capacity (kg)	Installation Emission Factor K % of Capacity	Operating Emissions X % of Capacity/yr	Refrigerant Remaining at Disposal Y % of Capacity	Recovery Efficiency Z % of Remaining
Domestic Refrigeration	Domestic refrigeration units	0.05–0.5	1%	1%	80%	70%
Stand-Alone Commercial	Stand alone commercial applications	0.2–6	3%	15%	80%	70%
Medium/Large Commercial	Medium and large commercial refrigeration units	50–2,000	3%	35%	100%	70%
Transport Refrigeration	Transportation refrigeration units	3–8	1%	50%	50%	70%
Industrial Refrigeration	Industrial, food processing and cold storage units	10–10,000	3%	25%	100%	90%
Chillers	Commercial chillers	10–2,000	1%	15%	100%	95%
Residential/Commercial A/C	Residential and commercial units, including heat pumps	0.5-100	1%	10%	80%	80%
Maritime A/C Units	Maritime A/C units	5-6,500	1%	40%	50%	50%
Railway A/C Units	Railway A/C Units	10-30	1%	20%	50%	50%
Buses A/C Units	Buses A/C Units	4-18	1%	20%	50%	50%
Other Mobile A/C Units	All other mobile A/C units	0.5-2	1%	20%	50%	50%

Source: Screening Method of the inventory guidance document Direct Fugitive Emissions from Refrigeration, Air Conditioning, Fire Suppression, and Industrial Gases
https://www.epa.gov/climateleadership/scope-1-and-scope-2-inventory-guidance

GHG Emissions

Total CO_2 Equivalent Emissions (metric tons) - Refrigeration and AC Equipment	**5,132.5**

Notes:

1. CO_2 emissions estimated using emission factors provided in Table 3 of the Center for Corporate Climate Leadership *Greenhouse Gas Inventory Guidance Direct Fugitive Emissions from Refrigeration, Air Conditioning, Fire Suppression and Industrial Gases. (Dec 2020).*
2. GWP values are from *Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (2011).*

Scope 2 Emissions from Purchase of Electricity

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Guidance

The Indirect Emissions from Purchased Electricity Guidance document provides guidance for quantifying two scope 2 emissions totals, using a **location-based method** and a **market-based method**. The organization should quantify and report both totals in its GHG inventory. The location-based method considers average emission factors for the electricity grids that provide electricity. The market-based method considers contractual arrangements under which the organization procures electricity from specific sources, such as renewable energy.

(A) Enter total annual electricity purchased in kWh and each eGRID subregion for each facility or site in ORANGE cells of **Table 1**.
(B) If electricity consumption data are not available for a facility, an estimate should be made for completeness.
See the "Items to Note" section of the Help sheet for suggested estimation approaches.
(C) Select "eGRID subregion" from drop box and enter "Electricity Purchased."
- Use map (Figure 1) at bottom of sheet to determine appropriate eGRID subregion. If subregion cannot be determined from the map, find the correct subregion by entering the location's zip code into EPA's Power Profiler:
https://www.epa.gov/egrid/power-profiler#/
(D) See the market-based emission factor hierarchy on the market-based method Help sheet. If any of the first four types of emission factors are applicable, enter the factors in the yellow cells marked as "<enter factor>". If not, leave the yellow cells as is, and eGRID subregion factors will be used for market-based emissions.

Example entry is shown in first row (*GREEN Italics*) for a facility that purchases RECs for 100% of its consumption, and therefore has a market-based emission factor of 0.

Tips: Enter electricity usage by location and then look up the eGRID subregion for each location.
If you purchase renewable energy that is less than 100% of your site's electricity, see the example in the market-based method Help sheet.

Table 1. Total Amount of Electricity Purchased by eGRID Subregion

					Market-Based — *Use these cells to enter applicable market-based emission factors*						Location-Based		
					Emission Factors			Emissions			Emissions		
Source ID	Source Description	Source Area (sq ft)	eGRID Subregion *where electricity is consumed*	Electricity Purchased (kWh)	CO_2 Emissions (lb/MWh)	CH_4 Emissions (lb/MWh)	N_2O Emissions (lb/MWh)	CO_2 Emissions (lb)	CH_4 Emissions (lb)	N_2O Emissions (lb)	CO_2 Emissions (lb)	CH_4 Emissions (lb)	N_2O Emissions (lb)
Bldg-012	*East Power Plant*	*12,517*	*HICC Miscellaneous*	*200,000*	*0*	*0*	*0*	*0.0*	*0.0*	*0.0*	*231,097.2*	*24.8*	*3.8*
					<enter factor>	<enter factor>	<enter factor>						
					<enter factor>	<enter factor>	<enter factor>						
Prop Apartr	Xcel	440,000	MRO West	4,214,400	<enter factor>	<enter factor>	<enter factor>	3,946,722.4	429.9	63.2	3,946,722.4	429.9	63.2
Comm	Xcel	12,000	MRO West	232,200	<enter factor>	<enter factor>	<enter factor>	217,451.8	23.7	3.5	217,451.8	23.7	3.5
TH's	Xcel	140,940	MRO West	696,000	<enter factor>	<enter factor>	<enter factor>	651,793.6	71.0	10.4	651,793.6	71.0	10.4
					<enter factor>	<enter factor>	<enter factor>						
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					<enter factor>	<enter factor>	<enter factor>						
					<enter factor>	<enter factor>	<enter factor>						
Total Emissions for All Sources				**5,142,600**				**4,815,967.8**	**524.5**	**77.1**	**4,815,967.8**	**524.5**	**77.1**

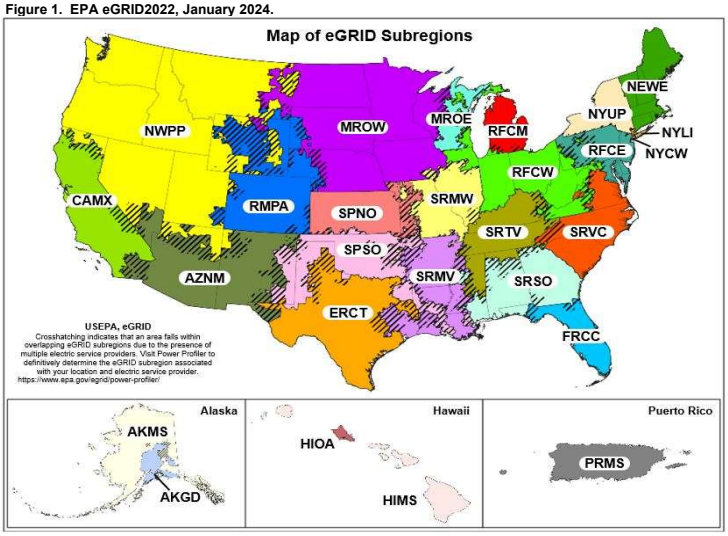
GHG Emissions

CO_2 Equivalent Emissions (metric tons)	
Location-Based Electricity Emissions	2,200.5
Market-Based Electricity Emissions	2,200.5

Notes:

1. CO_2, CH_4 and N_2O emissions are estimated using methodology provided in EPA's Center for Corporate Climate Leadership Greenhouse Gas Inventory Guidance - Indirect Emissions from Purchased Electricity (January 2016).

Figure 1. EPA eGRID2022, January 2024.



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Scope 3 Emissions from Waste

Guidance

(A) Enter annual waste data in ORANGE cells. Example entry is shown in first row (*GREEN Italics*).

(B) First, choose the appropriate material then the disposal method from the drop down options. For the average-data method, use one of the mixed material types, such as mixed MSW. If the exact waste material is not available, consider an appropriate proxy. For example, dimensional lumber can be used as a proxy for wood furniture.

(C) Choose an appropriate disposal method. Note that not all disposal methods are available for all materials. If there is a #NA or # Value error in the emissions column, you must pick a new material type or appropriate disposal method.

Table 1. Waste Disposal Weight by Waste Material and Disposal Method (CO_2, CH_4 and N_2O)

Source ID	Source Description	Waste Material	Disposal Method	Weight	Unit	CO_2e Emissions (kg)
Bldg-012	*East Power Plant Finished Goods*	*Copper Wire*	*Landfilled*	*1,000*	*metric ton*	*22,040*
Proposed Apartment Blgds.	Waste Management	Mixed MSW municipal solid waste	Landfilled	480	metric ton	*306,797*
Proposed Commercial Space	Waste Management	Mixed MSW municipal solid waste	Landfilled	44	metric ton	*28,123*
Proposed Townhomes	Waste Management	Mixed MSW municipal solid waste	Landfilled	75	metric ton	*47,937*

GHG Emissions

Total Emissions by Disposal Method

Waste Material	CO_2e (kg)
Recycled	0
Landfilled	382857
Combusted	0
Composted	0
Anaerobically Digested (Dry Digestate with Curing)	0
Anaerobically Digested (Wet Digestate with Curing)	0

Total CO_2 Equivalent Emissions (metric tons) - Waste	**382.9**

APPENDIX F

Noise Study
David Braslau Associates, Inc.

LAC-Columbia Heights
Columbia Heights, Minnesota

NOISE ASSESSMENT

Prepared for

Loucks Inc

by

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Dr. David Braslau, President

22 April 2025

EXECUTIVE SUMMARY

LAC is a proposed residential development in Columbia Heights, Minnesota. The project includes a two-six story residential building, a five -story residential building, town homes, a commercial building with market rate residential units and a large one-story commercial building.

The objective of this noise assessment is to estimate traffic noise impacts on the project from adjacent roadways, primarily Central Avenue on the east, and mechanical equipment from commercial buildings between Central Avenue and the project. Determination of compliance with state noise standards is evaluated.

To comply with Minnesota noise rules, peak daytime traffic noise levels from Central Avenue and 53rd Avenue North have been evaluated for the 4-5 pm hour and peak nighttime traffic noise levels for the 6-7 am hour. Traffic L10 and L50 were modeled based on traffic volumes from a MnDOT traffic flow map. Since the project is located between the round-about and Central Avenue signalized intersection, noise predictions are overstated.

The predicted 6-7 am or nighttime traffic noise levels exceed the nighttime noise standard and can be addressed with appropriate construction to comply with exceptions to the noise standards.

Living units with exposure to the commercial buildings immediately east of the project will be exposed to noise from rooftop mechanical equipment. An estimate of equipment sound levels has been based on previously monitored rooftop fans or blowers on other projects.

Table of Contents

List of Figures

List of Tables

1.0 INTRODUCTION

1.1. Objectives of this Noise Assessment

This *Traffic Noise Assessment* evaluates the potential impacts of noise from Central Avenue, 53rd St. North, and adjacent commercial facilities on the proposed LAC -Columbia Heights residential development in Columbia Heights, Minnesota.

Low traffic noise levels along 53rd Street North are expected due to the Traffic Circle to the west and signalized intersection with Central Avenue to the east. Projected traffic noise levels from Central Avenue are based on hourly traffic volumes from an MnDOT Automatic Traffic Recorder and traffic flow maps. These levels are compared with the Minnesota daytime and nighttime noise standards to determine the potential for noise impacts and need for any mitigation.

1.2. Site Location and Plan

Location of the development in the City of Columbia Heights is shown in **Figure 1.1**. The site plan relative to 53rd St. N and Central Avenue is shown on **Figure 1.2.**

The Minnesota State Noise Standards are presented in **Table 1.1.** Residential land uses are included in the NAC-1 (Noise Area Classification -1) under Minnesota Rule 7030.0040.

Figure 1.1 Minnesota State Noise Standards

	Daytime (7 am to 10 pm)		Nighttime (10 pm to 7 am)	
Noise Area Classification	L10	L50	L10	L50
NAC-1 (residential)	65	60	55	50
NAC-2 (commercial)	70	65	70	65
NAC-3 (industrial)	80	75	80	75

L10 is the level exceeded for 10% or 6 minutes of an hour. L50 is the level exceeded for 50% or 30 minutes of an hour. The L10 level, which has been shown to accurately reflect traffic noise along major highways, is used in this report to determine compliance.

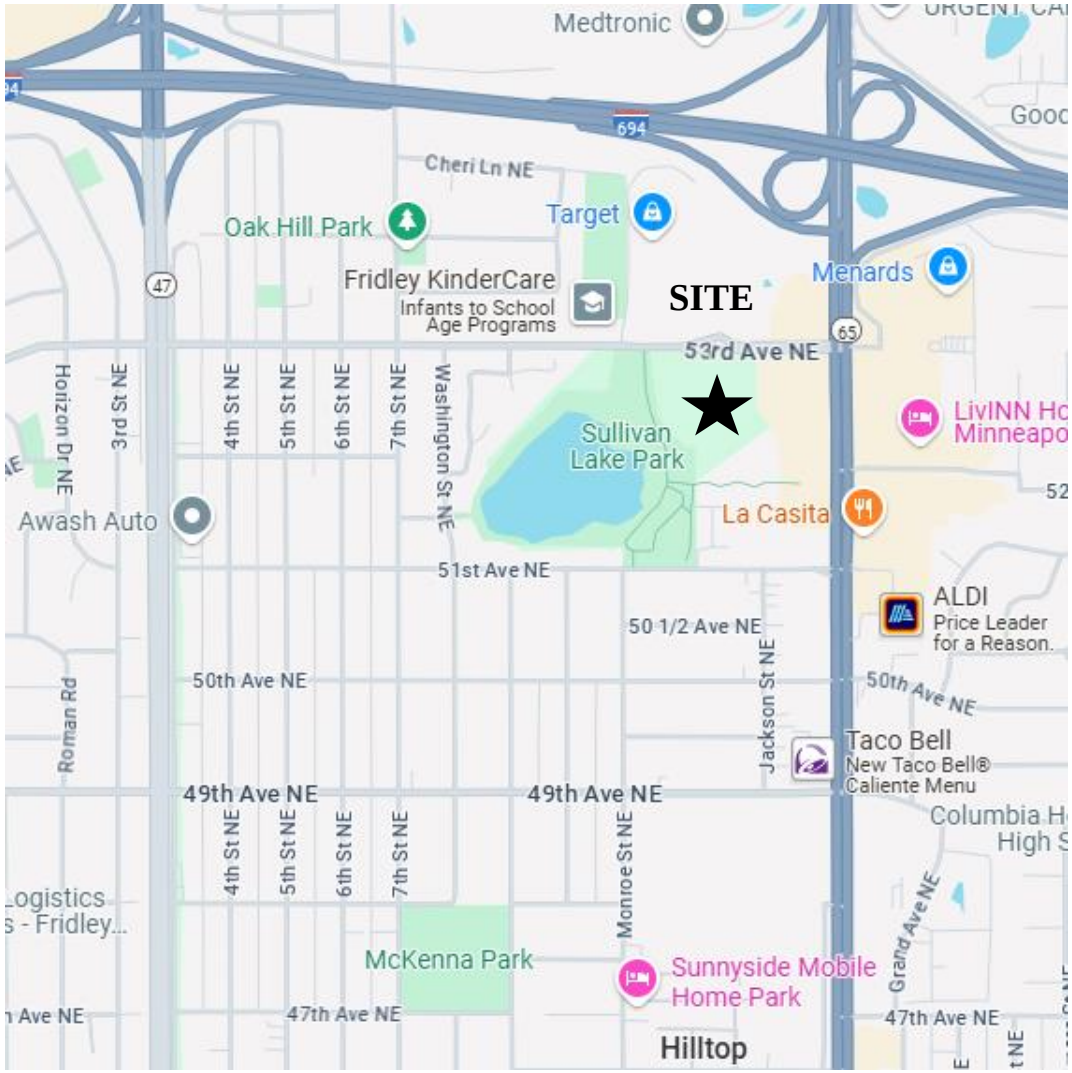


Figure 1.2 Site Location

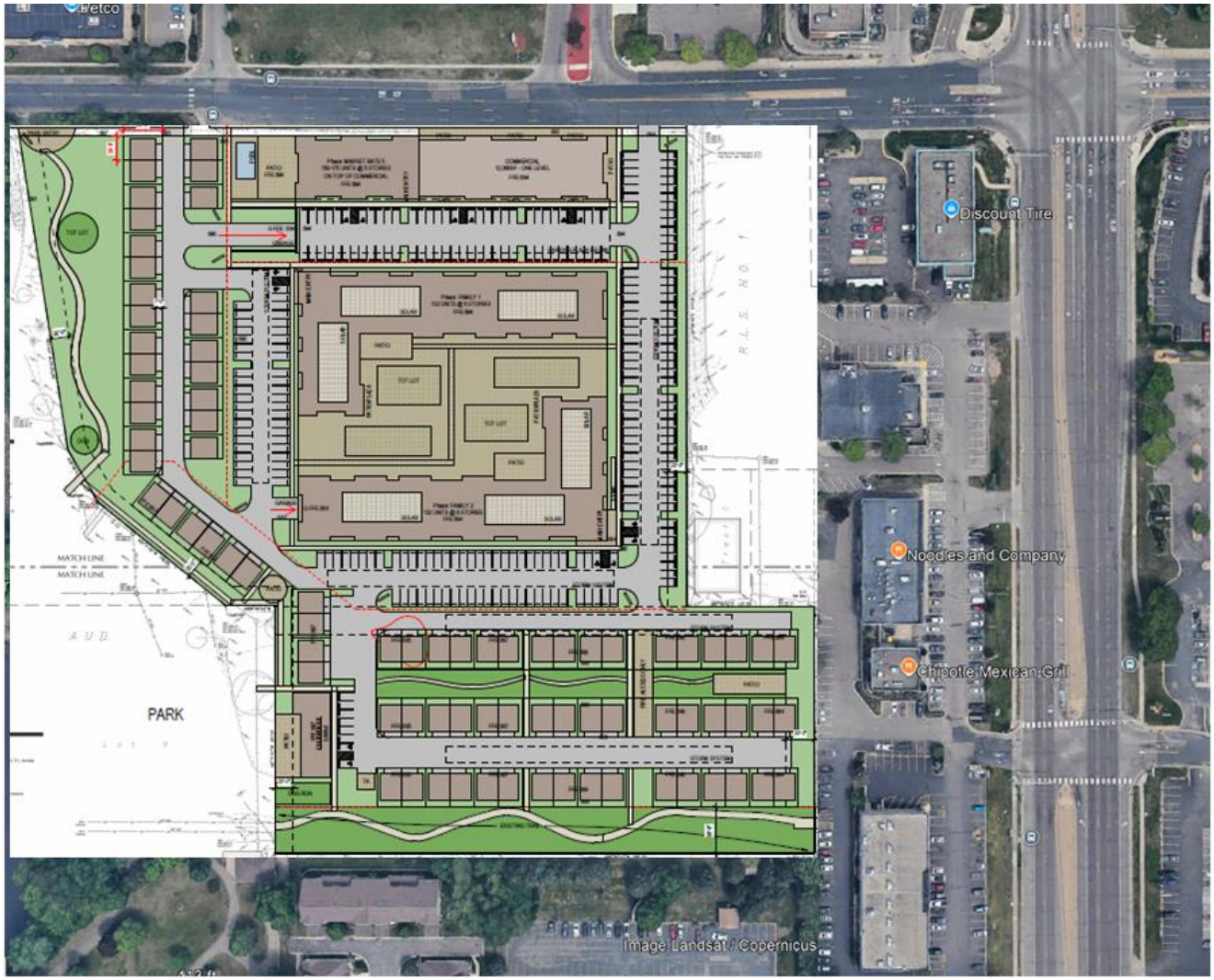


Figure 1.3 Project Layout Relative to Central Avenue and 53 St N

2.0 TRAFFIC NOISE MODEL PREDICTIONS AND MEASUREMENTS

2.1. Traffic Noise Model

The MinnNoise model was used to predict noise levels associated with vehicle traffic. The traffic noise model geometry is shown in **Figure 2.1**. Selected noise receptors are located on the building facades directly exposed to highway noise and several receptors are located on building facades that are partially shielded from highway traffic. The extensive noise "barrier" between the project, shown as a light green line in **Figure 2.2** included buildings as well as the higher ground terrain (El 918) relative to the project base elevation of approximately El 890.

Daily traffic volumes were taken from the MnDOT Traffic Mapping Application for 53rd St N and Central Avenue. Vehicle distribution for Autos, Medium Trucks and Heavy Trucks is based on previous studies in the Twin Cities Metropolitan Area. No trucks were assumed on 53rd St. N.

Figure 2.1 Assumed Hourly Volume and Vehicle Mix

53rd St. N

	AM	PM
Autos	840	1050
MT	27	33
HY	0	0

Central Avenue

	AM	PM
Autos	2077	2596
MT	66	82
HT	44	55

2.2. Noise Model Predictions

Traffic noise levels have been predicted for noise receptor sites shown in **Figure 2.2** for the "Nighttime" 6-7 AM and "Daytime" 4-5 PM peak travel periods. The model assumed a speed of 35 mph on 53rd St. N and 45 mph on Central Avenue, slightly above posted speeds to ensure realistic noise levels. However, with the project located on 53rd St. N between the new traffic circle just west of the site and the signalized intersection with Central Avenue east of the sites, model results for 53rd St N are included for completeness only since actual levels are closer to area background. Project noise receptors will be shielded from Central Avenue by existing commerical buildings and terrain. This noise barrier is shown in **Figure 2.3.**

Predicted AM L10 levels on second floor receptors are presented in **Figure 2.4**. The numbers above the bars are the reduction in traffic noise level provided by the building/terrain barrier. The barrier provides less shielding at the higher floors. Predicted traffic AM L10 noise levels at receptors by floor level are presented in **Table 2.5** on Page 6. Since the difference between estimated AM and PM traffic volumes is only 25%, the PM noise levels are only about one decibel higher than the AM levels and not presented here.

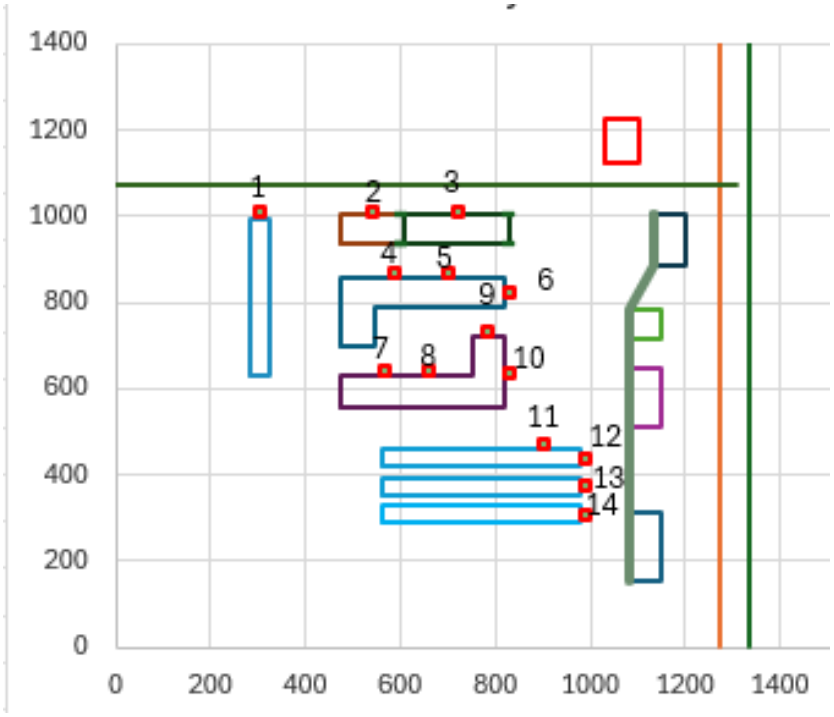


Figure 2.2 Model Geometry with 2ND Floor Noise Receptor Sites

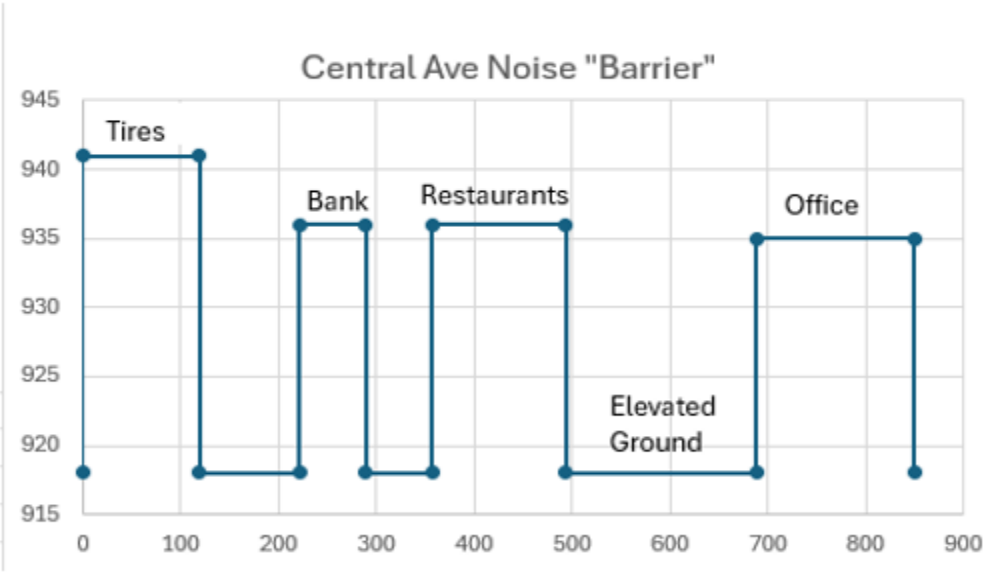
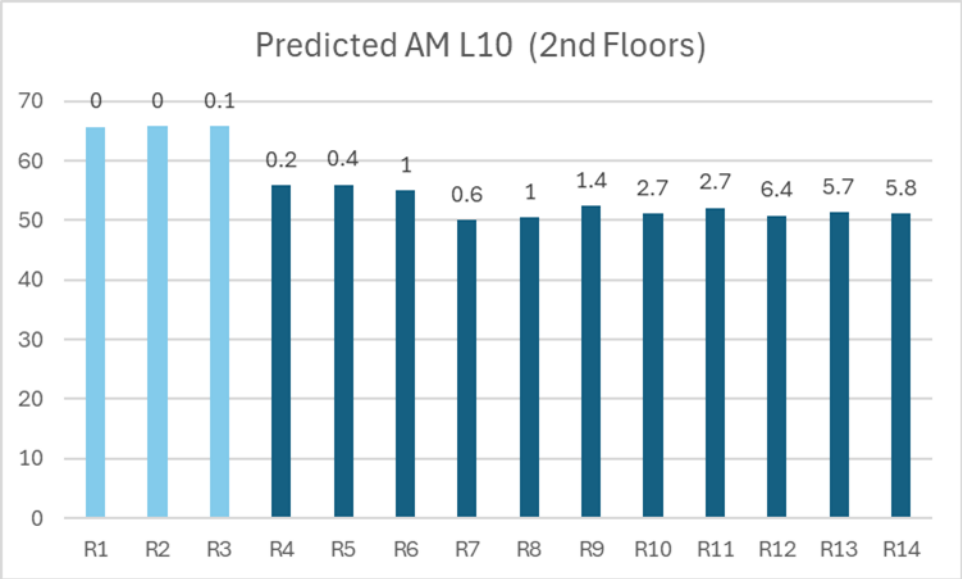


Figure 2.3 Noise Barrier Profile with Buildings and Terrain

Figure 2.4 Predicted AM L10 Traffic Noise Levels



The values in shaded boxes would also be partially shielded by the buildings themselves but would require a much more detailed noise analysis. As noted above, values at receptors 1-3 are likely to be much lower due to lower speeds. From **Figure 2.2**, it can be seen that receptors 5 and 6 in the north family building and receptors 9 and 10 in the south family building are most exposed to traffic noise. Receptors 11 through 14 are shielded by the building/terrain barrier with lower traffic noise levels.

Figure 2.5 Predicted Traffic AM L10 Traffic Noise Levels

Rec	2nd Floor	4th Floor	6th Floor
1			
2			
3			
4			
5	**56**	**56**	50
6	**55**	**55**	50
7			
8			
9	**52**	**53**	47
10	**51**	**52**	49
11	52		
12	51		
13	51		
14	51		

Since the 6-7 am period is governed by the state nighttime noise standards, L10 levels above **55 dBA** exceed the standards, and mitigation under state rules will be required. As will be noted in Section 3.1, window treatment will likely be needed with the addition of rooftop mechanical noise.

The following excerpts from Minnesota Rule 7030 on noise provide exemptions from the rules providing certain exterior to interior sound level attenuation can be provided.

Subp. 3. **Exceptions.** The noise area classification for a land use may be changed in the following ways if the applicable conditions are met.

A. The daytime standards for noise area classification 1 shall be applied to noise area classification 1 during the nighttime if the land use activity does not include overnight lodging.

B. The standards for a building in a noise area classification 2 shall be applied to a building in a noise area classification 1 if the following conditions are met:
(1) the building is constructed in such a way that the exterior to interior sound level attenuation is at least 30 dB(A);
(2) the building has year-round climate control; and
(3) the building has no areas or accommodations that are intended for outdoor activities.

The exterior-interior noise reduction is based upon several factors:

- Exterior building wall element STC (sound transmission class)
- Exterior building window element STC
- Relative area of each of the exterior building elements
- Composite STC based on acoustical energy transmitted through the building facade.
- Adjustment of STC values to attenuation in dBA, using a factor three for traffic noise

Assuming a typical window-to-wall area of 40%, 6-inch stud walls with 3-pcf insulation, STC 28 rated windows should provide the 30 dBA exterior to interior noise reduction provided in the state rule. glazing,

3.0 MECHANICAL NOISE ASSESSMENT

Buildings normally place mechanical equipment on the roof to minimize impacts on their own occupants. The new residential buildings that are higher than the roofs of adjacent commercial buildings will therefore be exposed to noise from this equipment. For this preliminary analysis, sound level data from previously monitored rooftop equipment have been used to evaluate potential impact on the new buildings. Two units on the Discount Tire building, one on the US Bank building and two on the restaurant building have been assumed for this analysis.

Views from upper floors of the family L-shaped buildings adjacent to these buildings are shown in **Figure 3.1**. Estimated sound levels from the units are presented in **Table 3.1**

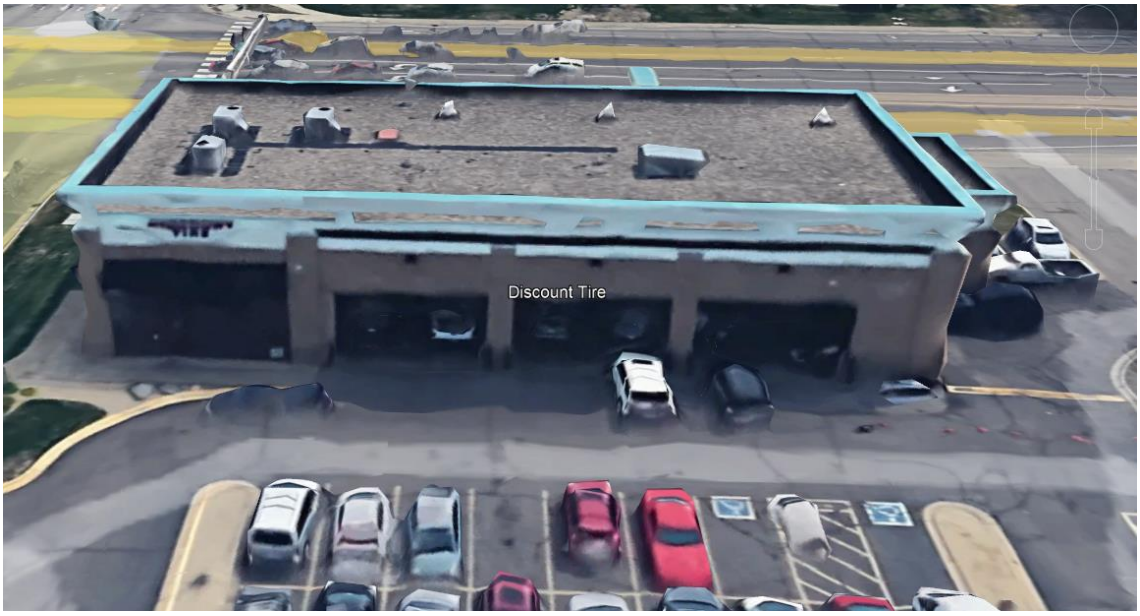
Receptors 1 through 4 will be shielded by other buildings not likely impacted by rooftop equipment noise. Receptors 7 and 8 will also be partially shielded by the building itself. With the limited equipment assumptions used here, sound levels are similar to those predicted for traffic noise in **Table 2.5** and should comply with state rules. However, with multiple pieces of equipment operating on the adjacent buildings, sound levels could be 3 to 5 dBA higher or even greater.

Figure 3.1 Estimated Rooftop Equipment Noise

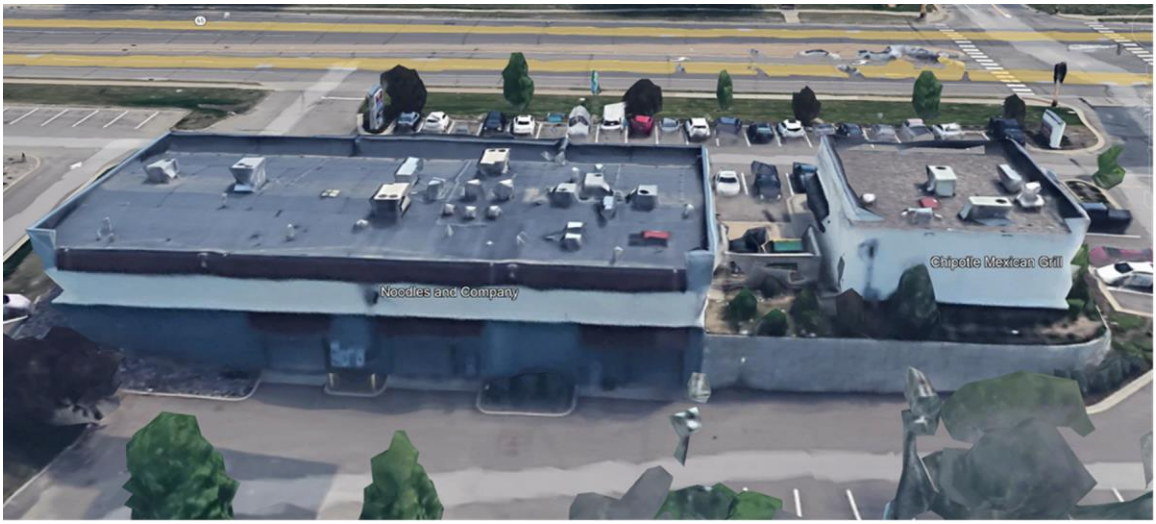
L50 Mechanical Level (AM Standard 50 dBA)

Rec	2nd Floor	4th Floor	6th Floor
1	*66*	*57*	
2	*66*		
3	*66*	*66*	57
4	56	56	57
5	**56**	**56**	50
6	**55**	**55**	50
7	50	50	51
8	51	51	47
9	**52**	**53**	47
10	**51**	**52**	49
11	52		
12	51		
13	51		
14	51		

For units exposed to sound levels from rooftop equipment over the L50 50 dBA nighttime standard, the state rules described above on Page 7 will also apply. A more detailed study of sound levels from rooftop equipment may be needed to ensure compliance with state noise standards and acceptable interior sound levels in the new residential buildings. If tonal noise is associated with rooftop equipment, that may not be attenuated by the glazing described above, a more extensive assessment of rooftop equipment may also be appropriate.



Discount Tires – Rooftop View



Restaurants - Rooftop View

Figure 3.2 Possible Rooftop Views from Upper Floors

4.0 SUMMARY OF FINDINGS

Predicted traffic noise levels from Central Avenue and adjacent rooftop mechanical equipment on the proposed LAC Columbia Height development have been estimated and compared with state noise standards.

A total of fourteen noise receptor sites distributed along building façades with some exposure to Central Avenue and mechanical equipment have been evaluated and compared with the Minnesota noise standards for residential land use. While some predicted traffic noise levels are in excess of the residential (NAC-1) state daytime and nighttime noise standards, exceptions to the rules permit the commercial noise standards (NAC-2) to be applied if a 30 dBA reduction in sound level can be achieved.

Noise from adjacent rooftop mechanical equipment, based on the limited analysis reported here, is also estimated to exceed the NAC-1 nighttime noise standard and would also require a 30 dBA reduction in sound level. A more detailed analysis of adjacent rooftop equipment noise may be appropriate.

A 2x6 wall with siding and a 5/8 gypsum interior along with STC 28 windows and any patio door glazing, will be required to comply with the state noise rules assuming glazing does not exceed 40% of the exterior wall.

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APPENDIX G

Traffic Study
Transportation Collaborative
& Consultants, LLC