



**Central High School  
Redevelopment Project  
Scoping Environmental Assessment  
Worksheet**

November 2023

Prepared for:

**RGU: City of Duluth**

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# Central High School Redevelopment Project Scoping Environmental Assessment Worksheet

Proposer: City of Duluth  
RGU: City of Duluth

November 2023



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December 2022 version

# 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.

## Introduction

An Alternative Urban Areawide Review (AUAR) is an alternative to an Environmental Impact Statement (EIS) that responds to the items in the EAW form to the level of analysis similar to an EIS. Minnesota Rules Chapter 4410.3610, subp. 4 states that "the content and format [of an AUAR document] must be similar to that of an EAW but must provide for a level of analysis comparable to that of an EIS for impacts typical of urban residential, commercial warehousing, and light industrial development and associated infrastructure."

An AUAR consists of three steps: Scoping EAW, Draft AUAR and Final AUAR. The Scoping EAW describes issues to be studied in the AUAR and potential data sources to be used in this analysis. The purpose of the Scoping EAW is to provide information to agencies and the public on the proposed scope of the AUAR and to invite feedback on any additional analysis or data sources that should be included in the AUAR. Once the Scoping EAW process and comment period has been completed, a Draft AUAR is prepared that reflects the comments received.

The revised EAW form (December 2022 version) was used to conduct and document the scope of this AUAR for potential mixed use or business park development in Duluth, Minnesota. The twenty-two items in the EAW form provide information about proposed development scenarios within the AUAR area, existing conditions, existing plans, potential issues to explore through the AUAR process, and specific methodologies for special studies that will be conducted for the AUAR (i.e., the scope of the Traffic Impact Study). The EAW and AUAR Guidelines provide additional details and resources for completing the EAW form for an AUAR and conducting the AUAR review process.

Following developer interest in the Central High School Redevelopment Site in summer 2023, the City of Duluth decided to conduct this AUAR to plan for future development and to evaluate environmental impacts for the maximum potential buildout of the AUAR area.

**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

Central High School Redevelopment Project

## 2. Proposer

Proposer:	City of Duluth, Department of Planning and Economic Development
Contact person:	Ryan Pervenanze
Title:	Manager of Planning and Development Division
Address:	City Hall Room 160, 411 W. First St.
City, State, ZIP:	Duluth, MN 55802
Phone:	(218) 730 - 5580
Email:	rpervenanze@duluthmn.gov

### 3. Responsible Governmental Unit (RGU)

RGU Agency: City of Duluth  
Contact person: Adam Fulton  
Title: Deputy Director of Planning and Economic Development  
Address: City Hall, Room 160, 411 W. First St.  
City, State, ZIP: Duluth, MN, 55802  
Phone: (218) 730 - 5580  
Email: planning@duluthmn.gov

### 4. Reason for EAW Preparation

Required: Discretionary:  
 EIS Scoping (AUAR)  Citizen petition  
 Mandatory EAW  RGU discretion  
 Proposer initiated

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

Minnesota Rules 4410.3610, Subpart 1 allow for eligible projects to be reviewed through the AUAR procedures instead of the EAW and EIS procedures. Pursuant to Minnesota Rules Chapter 4410.3610, Subpart 5a additional procedures are required when certain large specific projects are reviewed. This Scoping EAW has been prepared in accordance with these procedures to guide the Draft AUAR. Minnesota Rules Chapter 4410.4300, Subpart 14 and Minnesota Rules 4410.4400, Subpart 11 pertain to Scenario A (Business Park). Minnesota Rules Chapter 4410.4300 Subpart 32 and 4410.4400 Subpart 21 pertain to the Scenario B (Mixed Use Scenario).

### 5. Project Location

County: St. Louis County

City/Township: City of Duluth

PLS Location (¼, ¼, Section, Township, Range): Township 50 North, Range 14 West, Section 21

Watershed (81 major watershed scale): St. Louis River and Lake Superior - South

GPS Coordinates: Latitude 46.796296, Longitude -92.115402

Tax Parcel Number: 010-0435-00030, 010-0435-00020, 010-2710-06240, 101-0435-00010 (part of), 010-2710-06180, 010-0435-00040, 010-2710-06185

#### 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).

## 6. Project Description

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

The City of Duluth is preparing an AUAR for an approximately 80-acre area on the site of the former Central High School near Central Entrance and H. Courtney Drive in the City of Duluth, St. Louis County, Minnesota. Two development scenarios will be evaluated as part of the AUAR which include a business park scenario consistent with the city's adopted Comprehensive Plan, and a mixed residential and commercial use scenario.

### *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 wastes, 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*

#### **Existing Conditions**

The AUAR area encompasses approximately 80 acres of land on the site of the former Central High School near Central Entrance and H. Courtney Drive in the City of Duluth, St. Louis County, Minnesota. Figure 1 (USGS Topographic Map) and Figure 2 (Aerial Project Location Map) in Appendix A show the AUAR area. The AUAR area consists of the demolished Central High School building area and associated infrastructure including the Secondary Technical Center (STC) building, the former track field, tennis courts, parking lots, and road system serving the AUAR area.

The Duluth School District recently constructed a new District Service Center building and Transportation Building on the property adjacent to the northwestern boundary of the AUAR area along Portia Johnson Drive. The District Service Center consists of office and administrative uses. The Transportation Building includes bus storage, offices, a repair shop, and a bus wash bay. An existing building was also repurposed as a Facilities Building that includes offices, utilities shop, print shop, and storage.

Additionally, two broadcast towers are located in the southern portion of the AUAR area. Approximately 27 acres of wooded area exists within the AUAR area primarily along the northern, eastern, and southern edges of the AUAR area. Portions of both the Duluth Traverse and Central Entrance trails fall within the AUAR area.

#### **Proposed Project**

##### *Proposed AUAR Development Scenarios*

Two development scenarios will be considered as part of the AUAR which include one scenario that is consistent with the City's adopted Comprehensive Plan (Imagine Duluth 2035 – Forward Together<sup>1</sup>), and another scenario consisting of a mixed commercial and residential development pattern. The mixed use scenario is based on a potential development proposed by a private developer and incorporates elements that the City intends to pursue as part of the overall development of the AUAR area. The two development scenarios are further described below:

- Scenario A: Business Park Scenario

The business park scenario would consist of approximately 360,000 square feet of light industrial/warehouse distribution uses at full buildout, consistent with the City's future land use map in its adopted Comprehensive Plan. Surface parking would be included in this scenario, and the site would be accessed via the existing entrance Central Entrance/Trunk Highway (TH) 194 and H.

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<sup>1</sup> City of Duluth. Imagine Duluth 2035 – Forward Together. Adopted June 25, 2018. <https://duluthmn.gov/media/rtgk5tin/imagine-duluth-2035-combined-website-temp.pdf>

Courtney Drive. Future potential connections are shown including the extension of Portia Johnson Drive to a new entrance on Blackman Avenue to the west and a potential connection to Lake Avenue and the residential neighborhood to the southeast of the AUAR area.

Both the Duluth Traverse and Central Entrance trails would remain within the AUAR area, although slight adjustments to alignment may be necessary depending on the future site layout. The scenario proposes that the existing broadcast towers would remain, as well as the approximately 27 acres of wooded area. Exhibit 1 depicts Development Scenario A.

- Scenario B: Mixed Use Scenario (Maximum Development)

The mixed commercial and residential scenario (mixed use) will be studied in this AUAR as the maximum development scenario. This scenario is intended to maximize development of the AUAR area and represents the “worst case scenario” for environmental impacts studied in the AUAR. The actual development, encompassing plans proposed by a private developer, may represent a modified version of this development scenario, which may include fewer residential units and less commercial development depending on market forces. The City of Duluth has also proposed elements within this scenario that will be explored as part of the full buildout of the AUAR area, including additional connections to adjacent neighborhoods, open space and development of property owned by the school district within the AUAR area.

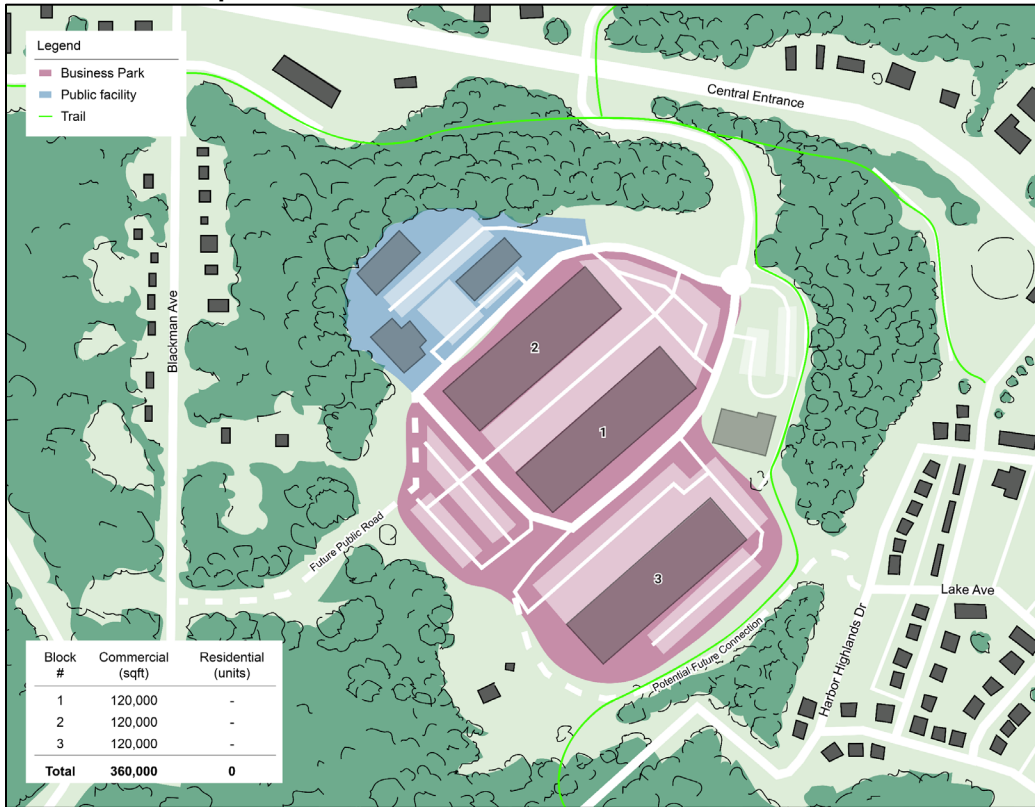
At full buildout, the mixed use scenario would consist of 1,590 units of residential and 124,000 square feet of commercial development. Potential commercial uses considered in this AUAR include hotel, restaurant, pre-school, alternative school, and other neighborhood-serving commercial uses. Residential development is proposed to consist of a mix of densities including apartments and townhomes. The scenario would include a mix of surface and structured parking.

The AUAR area would be accessed via the existing entrance from Central Entrance (TH 194) and H. Courtney Drive. Future potential connections are shown including the extension of Portia Johnson Drive to Blackman Avenue to the west and a potential connection to Lake Avenue and the residential neighborhood to the southeast of the AUAR area.

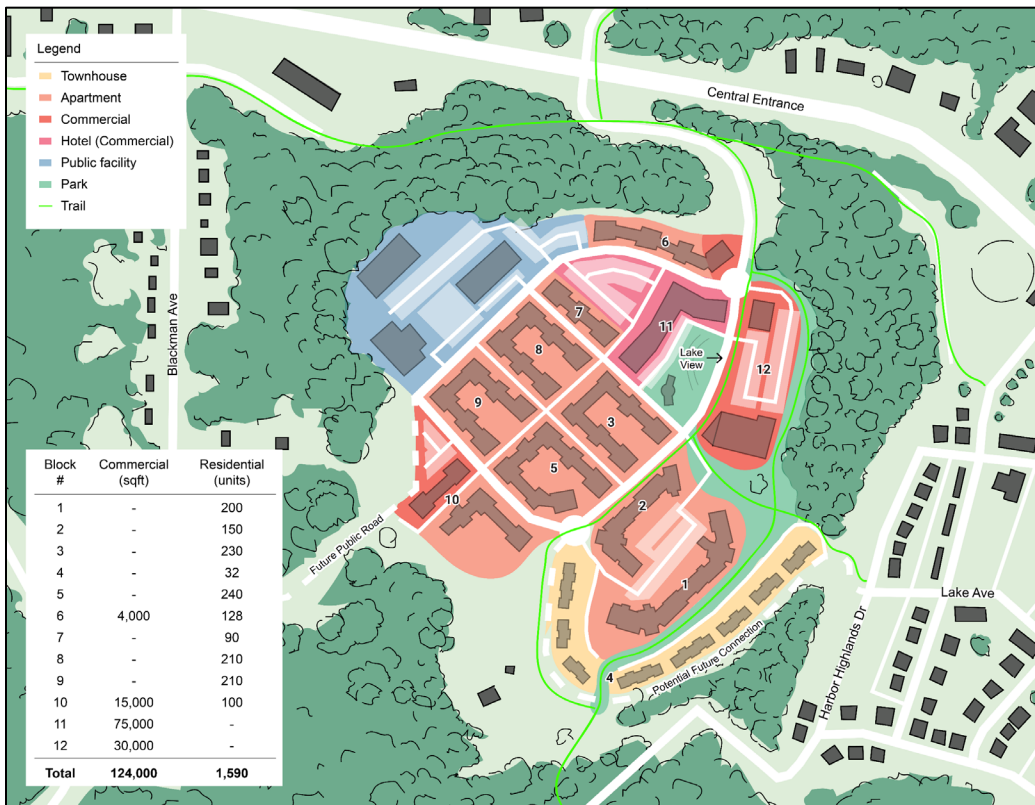
Both the Duluth Traverse and Central Entrance trails would remain within the AUAR area, although slight adjustments to alignment may be necessary depending on the future site layout. This scenario proposes the addition of trailhead and a small park facility with restrooms. The scenario proposes that the existing broadcast towers would remain, as well as most of the approximately 27 acres of wooded area. Exhibit 2 depicts Development Scenario B.



### Exhibit 1: Development Scenario A - Business Park



### Exhibit 2: Development Scenario B – Mixed Use (Maximum Development)



1) *Construction, operation methods and features that will cause physical manipulation of the environment or will produce wastes*

Both Development Scenarios would include construction of new buildings and associated access roadways, parking areas and infrastructure improvements. Site preparation would include grading, excavation and vegetation removal. It is anticipated that full buildout of the AUAR area would include the construction of roadway connections to the west and southeast as described in the Development Scenario descriptions above. The AUAR area was previously developed, but capacity of municipal sanitary sewer and water supply would need to be studied and potentially increased depending on the intensity of development. Stormwater infrastructure would be constructed to accommodate the increase in impervious surfaces.

2) *Modifications to existing equipment or industrial processes*

Not applicable – no planned modifications to existing equipment or industrial processes.

3) *Significant demolition, removal or remodeling of existing structures*

Most of the buildings within the AUAR area, including the former Central High School, have already been demolished to prepare the site for redevelopment. An existing 52,775 square foot building (referred to as the Secondary Technical Center building) within the AUAR area may be demolished or remodeled as part of the redevelopment project. Other existing structures include a small storage building near the former high school running track and the dugouts at the former ballfield.

4) *Timing and duration of construction activities*

It is anticipated that construction on a first phase of the mixed use project may begin as early as 2024. It is anticipated that full buildout of the AUAR area would occur over the course of several years. The timing of development would be driven by market conditions.

**c. Project magnitude**

Table 1 summarizes the project magnitude.

**Table 1. Project Magnitude**

<b>Description</b>	<b>Development Scenario A</b>	<b>Development Scenario B</b>
Total Project Acreage	79.7	79.7
Linear project length	N/A	N/A
Number and type of residential units	N/A	1590 units of medium to high density housing (32 townhomes + 1558 apartments)
Residential building area (in square feet)	N/A	1,479,000
Commercial building area (in square feet)	N/A	124,000
Industrial building area (in square feet)	360,000	N/A
Institutional building area (in square feet)	N/A	N/A
Other uses – specify (in square feet)	N/A	N/A
Structure height(s)	1-story	7-story

- 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 completing this AUAR is to plan for and study the potential development of the AUAR study area. An AUAR is being conducted to study two development scenarios and intensities and to ensure that the environmental review incorporates the “worst case scenario” for full buildout of the AUAR area.

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

The purpose of this AUAR is to evaluate the full buildout of future potential development. It is anticipated that development would occur in phases based on market conditions.

- f. Is this project a subsequent stage of an earlier project?  Yes  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.**

In general, Minnesota is anticipated to experience an increase in temperature, precipitation, and more frequent extreme precipitation events resulting from climate change. In Minnesota, annual average temperatures have risen two degrees over the past century and up to three degrees in the northern part of the state. The highest average temperature increases have occurred during the winter. Since 1895, temperatures during the winter have increased at a rate two to three times higher than during the summer. In particular, winter warming rates have risen more sharply in recent decades.<sup>2</sup> Current climate warming trends, most notably during the winter, are anticipated to continue.<sup>3</sup>

Heavy rain events have become more frequent in Minnesota and more intense. From 1973 to 2020, Minnesota experienced 17 mega-rain events<sup>4</sup> with a notable increase since 2000. Of these 17 events, three occurred in the 1970s, two in the 1980s, one in the 1990s, six mega-rain events occurred in the 2000s, four in the 2010s, and one in 2020. Thus, in the past 21 years (2000 to 2020), almost two times as many mega rain events occurred compared to the prior 27 years (1973 to 1999).<sup>5</sup>

Climate trends for St. Louis County parallel the overall statewide trends, indicating Minnesota’s climate is becoming warmer and wetter. Exhibits 3 and 4 illustrate historical average annual temperature and precipitation trends from 1895 to 2023, respectively. During this time period, the County experienced an average annual temperature increase of 0.27 degrees Fahrenheit (°F) per decade and an annual precipitation increase of 0.20 inches per decade.

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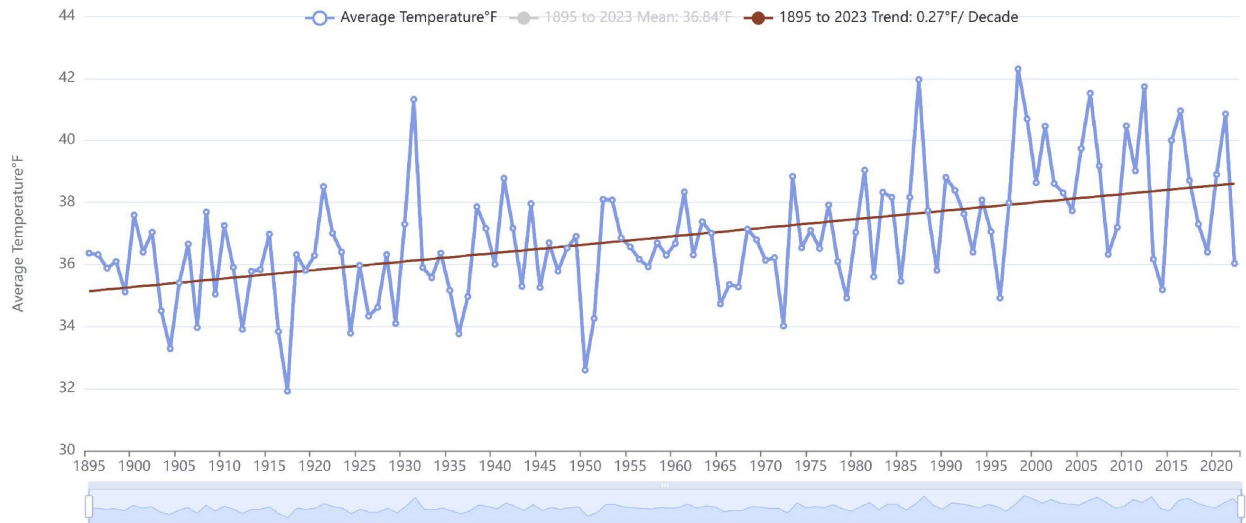
<sup>2</sup> DNR. Climate Trends. [https://www.dnr.state.mn.us/climate/climate\\_change\\_info/climate-trends.html](https://www.dnr.state.mn.us/climate/climate_change_info/climate-trends.html)

<sup>3</sup> MnDOT. Minnesota Go Climate Change Report. 2021. <https://www.minnesotago.org/trends/climate-change>

<sup>4</sup> Mega-rain events are defined as events in which six inches of rain covers more than 1,000 square miles and the core of the event tops eight inches.

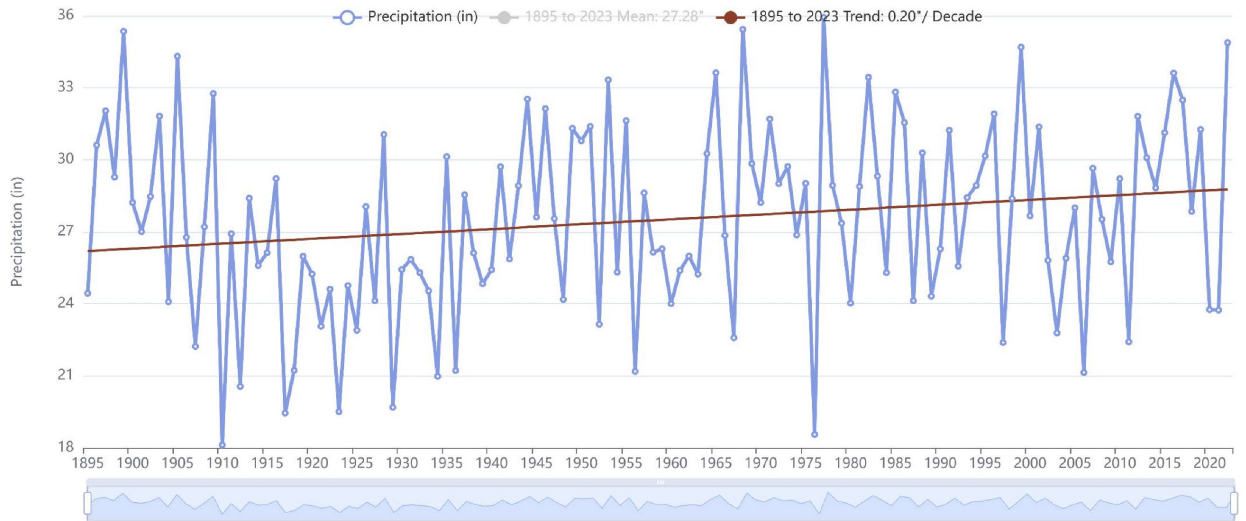
<sup>5</sup> DNR. Historic Mega-Rain Events in Minnesota. [https://www.dnr.state.mn.us/climate/summaries\\_and\\_publications/mega\\_rain\\_events.html](https://www.dnr.state.mn.us/climate/summaries_and_publications/mega_rain_events.html)

### Exhibit 3: Historical Annual Average Temperature in St. Louis County (1895 – 2023)



Source: Minnesota Department of Natural Resources.  
<https://arcgis.dnr.state.mn.us/ewr/climateexplorer/main/historical>

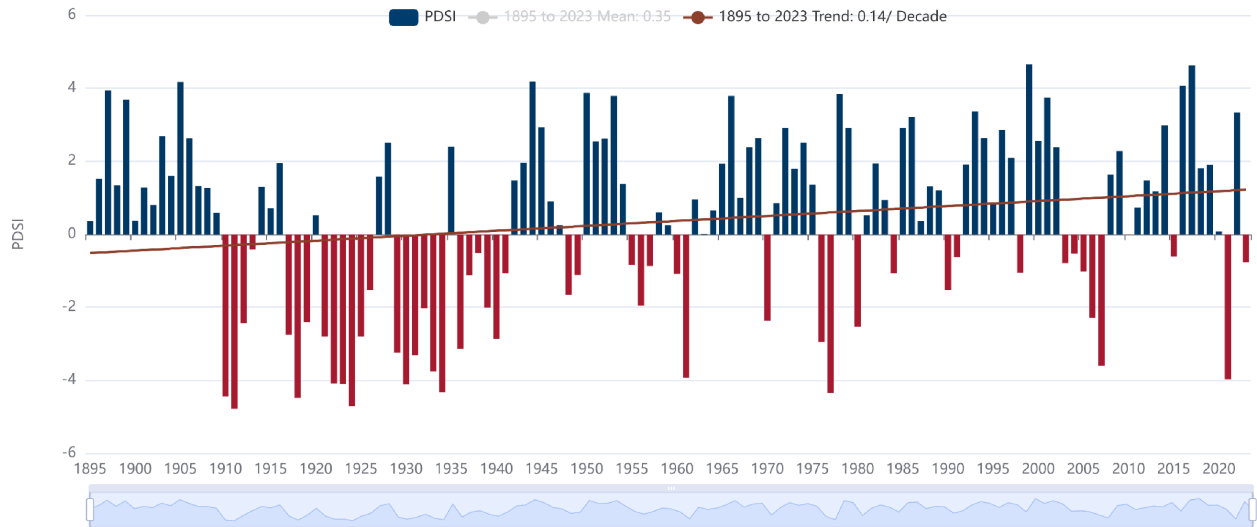
### Exhibit 4: Historical Annual Average Precipitation in St. Louis County (1895 – 2023)



Source: Minnesota Department of Natural Resources.  
<https://arcgis.dnr.state.mn.us/ewr/climateexplorer/main/historical>

The Palmer Drought Severity Index (PDSI) utilizes temperature and precipitation data to estimate relative soil moisture conditions and serve as an indicator of long-term drought conditions. The index ranges from -5 to +5 indicating dry and wet conditions, respectively. PDSI values are reported on a monthly basis. Exhibit 5 shows historic PDSI values for the month of August from 1895 to 2023 for St. Louis County, which indicates an increase of 0.14 per decade. Generally, the PSDI historical data indicates that the region is experiencing a wetter climate.

### Exhibit 5: Historical PDSI Values for St. Louis County (1895 – 2023)

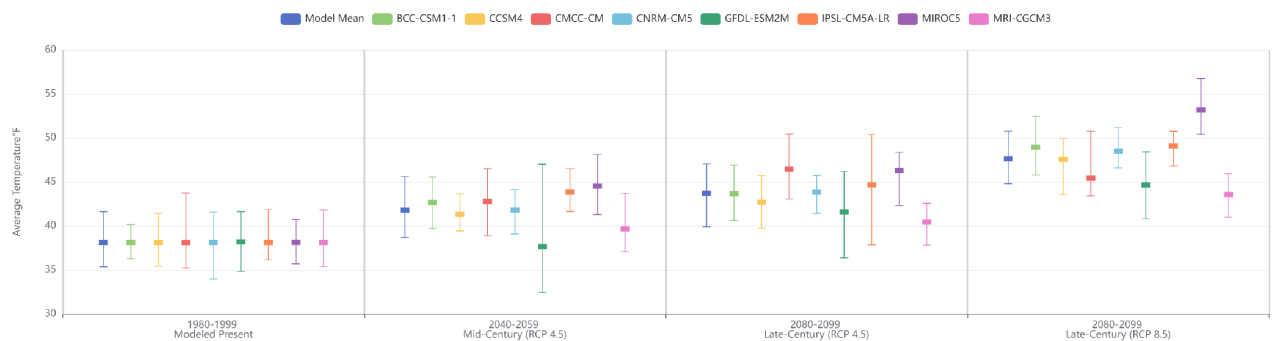


Source: Minnesota Department of Natural Resources.  
<https://arcgis.dnr.state.mn.us/ewr/climateexplorer/main/historical>

Projected climate trends indicate that temperatures within the County will continue to increase. Exhibit 6 illustrates projected temperatures for the County. Several climate models are shown in the projected temperature analysis. The model mean, shown in blue, illustrates the average of all models included in the analysis. Exhibit 6 shows the modeled present condition, mid-century (2040-2059) at Representative Concentration Pathway (RCP) 4.5, late-century (2080-2099) at RCP 4.5, and late-century (2080-2099) at RCP 8.5. RCP is a greenhouse gas concentration scenario used by the Intergovernmental Panel on Climate Change in the fifth assessment report. RCP 4.5 is an intermediate scenario in which emissions decline after peaking around 2040 and RCP 8.5 represents a worst-case scenario in which emissions continue rising through the 21st century.

Under the RCP 4.5 scenario, the annual temperature is anticipated to increase within the County from a modeled present mean of 38.2°F (1980-1999) to a mid-century (2040-2059) model mean of 41.8°F and a late-century (2080-2099) model mean of 43.7°F. Under the RCP 8.5 worst-case scenario, the County would experience a late-century (2080-2099) model mean temperature of 47.6°F.

### Exhibit 6: Projected Temperatures in St. Louis County

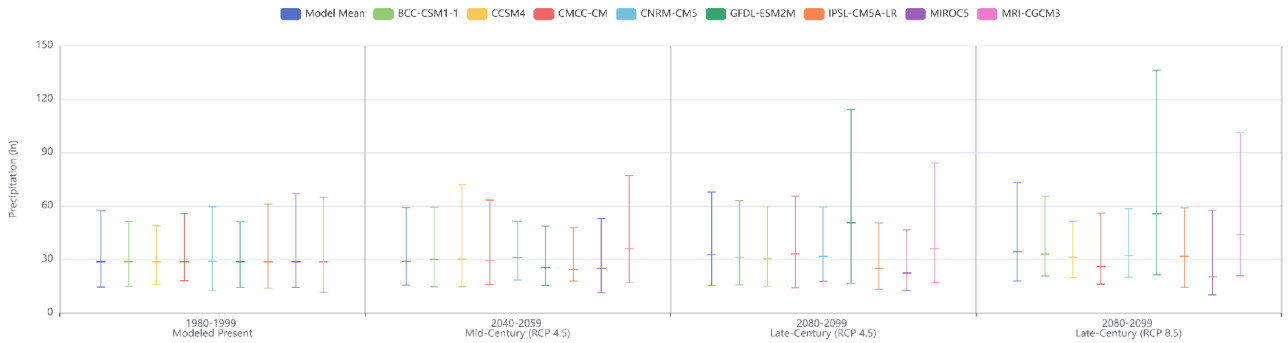


Source: Minnesota Department of Natural Resources.  
<https://arcgis.dnr.state.mn.us/ewr/climateexplorer/main/historical>

Exhibit 7 presents projected average annual precipitation for St. Louis County. Under the RCP 4.5 scenario, the annual precipitation is anticipated to increase within the County from a modeled present

mean of 38.2 inches (1980-1999) to a mid-century (2040-2059) model mean of 41.8 inches and a late-century (2080-2099) model mean of 43.7 inches. Under the RCP 8.5 worst-case scenario, the County would experience a late-century (2080-2099) model mean precipitation of 47.6 inches. In comparison to the modeled present mean (1980-1999), the late-century (2080-2099) modeled mean annual precipitation would increase by approximately 5.5 percent under the RCP 4.5 scenario and increase by approximately 9.4 percent under the RCP 8.5 scenario.

**Exhibit 7: Projected Precipitation in St. Louis County**



Source: Minnesota Department of Natural Resources.  
<https://arcgis.dnr.state.mn.us/ewr/climateexplorer/main/historical>

**8. Cover Types**

*Estimate the acreage of the site with each of the following cover types before and after development.*

Land cover in the AUAR area was determined based on the National Land Cover Database (NLCD) geospatial data accessed in October 2023. The majority of the AUAR area, 35 acres of the approximately 79.7 acres or 44 percent of the total AUAR area, is classified as grass/shrub. Table 3 summarizes the cover types within the AUAR area. Figure 3, Appendix A illustrates land cover types within the AUAR area.

**AUAR Scope**

The cover type analysis would be augmented with aerial photographs and other desktop resources as part of the AUAR. Future land cover for both development scenarios would be evaluated in the AUAR. Existing conditions information is included in the following Tables 3 through 5. These tables would be completed for each development scenario as part of the draft AUAR.

**Table 2. Cover Types**

Cover Types	Before(acres)	After (acres)
Wetlands and shallow lakes (<2 meters deep)	1.31	Future land cover for both development scenarios would be evaluated in the AUAR.
Deep lakes (>2 meters deep)	-	
Wooded/forest	27.2	
Rivers/streams <sup>1</sup>	-	
Brush/grassland	35	
Cropland	-	
Livestock rangeland/pastureland	-	
Lawn/landscaping	-	
Green infrastructure TOTAL (from table below*)	-	

Cover Types	Before(acres)	After (acres)
Impervious surface	15.9	
Stormwater Pond (wet sedimentation basin) <sup>2,3</sup>	-	
Other (bare soil)	0.3	
<b>TOTAL</b>	79.7	

Note the following features are not included in the NCLD geospatial data. Further quantification and review of cover types would be completed for the AUAR.

<sup>1</sup> Clarkhouse Creek, while not captured flows across the southern boundary of the AUAR area, south of the broadcast tower. There are approximately 500 feet of the creek within the AUAR area.

<sup>2</sup> A stormwater pond occurs approximately 0.1 mile south of Central Entrance on the west side of H. Courtney Drive.

<sup>3</sup> A stormwater collection area occurs on the eastern portion of the AUAR study area, immediately west of Lake Avenue, that discharges to the storm sewer on Lake Avenue.

**Table 3. Green Infrastructure**

Green Infrastructure*	Before (acreage)	After (acreage)
Constructed infiltration systems (infiltration basins/infiltration trenches/ rainwater gardens/bioretention areas without underdrains/swales with impermeable check dams)	-	Future land cover for both development scenarios would be evaluated in the AUAR.
Constructed tree trenches and tree boxes	-	
Constructed wetlands	-	
Constructed green roofs	-	
Constructed permeable pavements	-	
Other (describe) Landfill-based geothermal system	-	
TOTAL*	-	

**Table 4. Tree Canopy**

Trees	Percent	Number
Percent tree canopy removed or number of mature trees removed during development	-	Potential tree removal impacts would be evaluated in the AUAR.
Number of new trees planted	-	

## 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 of these final decisions are prohibited until all appropriate environmental review has been completed. See Minnesota Rules, Chapter 4410.3100.**

**Table 5. Permits and Approvals**

<b>Unit of Government</b>	<b>Type of Application</b>	<b>Status</b>
<b>Federal</b>		
U.S. Army Corps of Engineers (USACE)	Section 404 Permit	To be submitted, if required
U.S. Fish and Wildlife Service (USFWS)	Section 7 ESA Consultation	To be completed, if required
<b>State</b>		
Minnesota Department of Transportation (MnDOT)	(e.g., Drainage Permit, Right-of-way permit for work within or affecting MnDOT right-of-way)	To be submitted, if required
Minnesota Department of Health (MDH)	Water Main Plan Review	To be submitted, if required
DNR	Temporary Water Appropriation Permit for construction dewatering	To be submitted, if required
DNR	Natural Heritage Information System (NHIS) concurrence	To be submitted, if required
Minnesota Pollution Control Agency (MPCA)	401 Water Quality Certification	To be submitted, if required
MPCA, City of Duluth	National Pollutant Discharge Elimination System (NPDES) MS4 Stormwater Discharge Permit, MS4 Statement of Compliance	To be submitted, if required
MPCA	Construction Site Stormwater Permit	To be submitted, if required
<b>Local</b>		
City of Duluth	Preliminary and Final Plat or a CIC (Common Interest Communities) Plat	To be submitted, if required
City of Duluth	Sign Permits	To be submitted, if required
City of Duluth	Certificate of Occupancy	To be submitted, if required
City of Duluth	Fill Permit	To be submitted, if required
City of Duluth	Erosion and Sediment Control Permits	To be submitted, if required
City of Duluth	Sewer Connection Permits	To be submitted, if required
City of Duluth	Water Connection Permits	To be submitted, if required
City of Duluth	Utility Extension Permits	To be submitted, if required
City of Duluth	Building Permits	To be submitted, if required
City of Duluth	Full Drainage Study	To be submitted, if required
City of Duluth/South St. Louis Soil and Water Conservation District	Wetland Conservation Act (Boundary Approval/Replacement Plan)*	To be submitted, if required

\* Not likely to need this since the wetlands are a distance from AUAR area.



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 parks and open space, cemeteries, trails, prime or unique farmlands.*

The majority of the AUAR area consists of previously developed land. The Central High School building has been removed, however, the parking lot, STC building, the football field, running track, and adjacent storage structure remain. Northwest of the AUAR area, the Duluth School District owns a District Service Center building, Transportation Building, and Facilities Building. Portions of the Duluth Traverse and Central Entrance trails are within and adjacent to the AUAR area. The Duluth Traverse trail connects the AUAR area to Hilltop Park, approximately 0.5 miles southeast of the AUAR area. The AUAR area includes about 27 acres of wooded open space. Figure 5 in Appendix A shows the existing parks, trails and other recreational areas.

**North:** Central Entrance is directly north of the AUAR area. Several commercial businesses are located along the north side of Central Entrance as well as residential areas and institutional uses, including Marshall School. Central Entrance Trail, a paved multi-use trail facility, runs along the northern boundary of the AUAR area on the south side of Central Entrance from Arlington Avenue/ County State Aid Highway (CSAH) 90 to Village View Drive. This trail provides a connection to businesses along the Central Entrance corridor and intersects the Duluth Traverse trail. The Duluth Traverse, a multi-use trail facility, extends north-south through the AUAR area. The Duluth Traverse connects Chambers Grove Park, approximately 12 miles southwest of the AUAR area, to Lester Park, approximately six miles northeast of the AUAR area.

**South:** The land south of the AUAR area is an area platted for low-density residential development (Summit Park Division of Duluth). The area is largely undeveloped and heavily wooded. There are a few rural residential properties and several radio towers in the vicinity south of the AUAR area. Clarkhouse Creek and associated wetlands flow near the south AUAR boundary. The Duluth Traverse trail continues south of the AUAR area.

**East:** There is a medium density residential neighborhood east of the AUAR area which consists mostly of townhomes. Most of this neighborhood (Harbor Highlands) was developed as mixed-income rental housing and is owned by the Duluth Housing and Redevelopment Authority (HRA). These properties offer rental units at market rates, below-market rates, and income-based public housing rental rates. There are supportive community uses in the neighborhood including the Harbor Highlands Community Center (YMCA), Young Minds Learning Center and Highlands Park. South of this development are single-family homes.

**West:** The land west of the AUAR area consists of a strip of single-family residential homes along Blackman Avenue and a 200-unit apartment building. Additionally, there is a Tru by Hilton Hotel west of the AUAR area adjacent to Central Entrance.

There are no cemeteries or areas of prime or unique farmland within or near the AUAR area.

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

### **AUAR Scope**

Several plans will be reviewed and summarized in the Draft AUAR. These plans include:

- Imagine Duluth 2035 (City’s Comprehensive Plan)
- Essential Spaces – Duluth Parks, Recreation, Open Space & Trails Plan
- Duluth Parks and Recreation Master Plan
- Duluth Trail and Bikeway Plan
- Central Entrance-Miller Hill Small Area Plan
- Highway 194/Central Entrance Corridor Study (ongoing)
- Duluth School District Master Plan – Cunningham Group

Figure 4 in Appendix A shows the Future Land Use Map for the AUAR area from Imagine Duluth 2035, the city’s Comprehensive Plan.

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

**AUAR Scope**

Land within the AUAR area is zoned MU-P (Mixed Use-Planned) and R-1 (Residential – Traditional). Regulations for this district are included in Article 2, Section 50-15.7 and Section 50-14.5, respectively, of the city’s zoning code called the Unified Development Chapter (UDC). Additional regulations within the zoning code will apply including the Permitted Uses in Article 3 and Development Standards in Article 4. These sections of the zoning code will be reviewed and critical elements summarized in the Draft AUAR.

Land adjacent to the AUAR area is zoned R-1, R-P, MU-I, MU-N, and MU-C. These zoning districts are regulated by Article 2, Sections 50.14-3, 50-14.7, 50-15.4, 50-15.2, and 50-15.3, as well as the permitted uses and development standards in Articles 3 and 4. These districts will be reviewed for potential conflicts with the MU-P and Development Scenarios. Zoning within and adjacent to the AUAR area is mapped in Figure 8, Appendix A.

**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.**

**AUAR Scope**

Development Scenario B proposes housing within the AUAR area. At this point there are no areas identified as floodplain or at risk for localized flooding. Should concerns arise regarding flooding within the AUAR area, this section will be addressed.

**b. Discuss the project’s compatibility with nearby land uses, zoning, and plans listed in Item 9a above, concentrating on implications for environmental effects.**

**AUAR Scope**

This section will analyze the compatibility of development of the AUAR area with neighboring land uses and zoning. The development scenarios will be compared to surrounding areas to determine if the proposed uses are compatible. Related changes and impacts to the AUAR area including land cover, transportation and view sheds will be referenced, but discussed in detail in their respective sections.

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

**AUAR Scope**

This section will address any potential mitigation strategies needed to ensure compatibility between the two proposed development scenarios, the existing surrounding areas, and planned land use. Any necessary changes to the Comprehensive Plan could be completed as a Comprehensive Plan Amendment or in a subsequent update of the Comprehensive Plan.

## 11. Geology, Soils and Topography/Land Forms

- 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.**

The surficial geology across the AUAR area has been mapped by the Minnesota Geological Survey's Geologic Atlas of St. Louis County (2022)<sup>6</sup> as being sediments deposited by ice from the northeast-sourced Superior Lobe. The Superior Lobe advanced from the northeast carrying sediment from the Superior Basin. As the Superior Lobe receded, till was deposited in the AUAR area. The AUAR area appears to consist of a Superior Lobe loamy till and the local well logs indicate the presence of clay from near the surface to the bedrock interface. Based on a review of well log reports available from the Minnesota Department of Health (MDH) Minnesota Well Index (MWI) database, it appears the thickness of the surficial glacial deposits varies from 4 to 24 feet (Unique Well ID Numbers 745808, 754614, and 778106) in the southern portion of the southern portion of the AUAR area. The Geologic Atlas of St. Louis County indicates the depth to bedrock in the AUAR area is less than 50 feet. It is anticipated the depth to bedrock within the AUAR area would be less than 50 feet and may be encountered during construction. Appendix C includes the MDH Well Log Reports.

The bedrock geology across the proposed AUAR area has been mapped by the Minnesota Geological Survey's Geologic Atlas of St. Louis County (2022) and the bedrock units mapped include Mesoproterozoic age igneous rocks from the Midcontinent Rift Intrusive Supersuite and the Keweenaw Supergroup (Figure 6). The components of the North Shore Volcanic Group identified within the Keweenaw Supergroup include undifferentiated basalt to basaltic andesite flows and icelandite. The component of the Duluth Complex within the Midcontinent Rift Intrusive Supersuite is a portion of the Anorthositic Series, which can contain anorthosite, troctolitic anorthosite, olivine gabbroic anorthosite, leucogabbro, and leucotroctolite. The components of the Midcontinent Rift Intrusive Supersuite found include intrusions of ferromonzodiorite to granophyre and porphyritic ophitic olivine leucogabbro.

The igneous bedrock formations in the AUAR area are not susceptible to the formation of karst features.

### **AUAR Scope**

The AUAR will discuss construction in shallow bedrock at the AUAR area and the potential need for blasting and identify appropriate mitigation measures as needed.

- 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, 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.**

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<sup>6</sup> Geologic Atlas of St. Louis County, Minnesota, C-51, Bauer, E.J.; Jirsa, M.A.; Block, A.R.; Boerboom, T.J.; Chandler, V.M.; Peterson, D.M.; Wagner, K.G.; McDonald, J.M.; Dengler, E.L.; Meyer, G.N.; Hamilton, J.D. (Minnesota Geological Survey, 2022). Retrieved from the University of Minnesota Digital Conservancy, <https://conservancy.umn.edu/handle/11299/254417>.

**Erosion/sedimentation control related to stormwater runoff should be addressed in response to Item 12.b.ii.**

Table 6 below describes the 2023 United States Department of Agriculture (USDA) Soil Survey Geographic Database (SSURGO) soil map units within the AUAR area<sup>7</sup>. Based on the SSURGO soils data, the AUAR area soils are expected to have shallow bedrock and large areas of disturbance related to previous development. The majority of the AUAR area (96 percent) is mapped as some mix of Urban Land, Rock Outcrop, Mesaba soil, and Barto soil. The “Urban Land” designation is used to indicate areas of urban development and disturbance. These areas are highly altered from their natural condition and typically feature soils impacted by cutting, grading, filling, compaction, and impervious cover. Rock Outcrop areas feature surficial (at or near surface) bedrock with little or no soil cover. Mesaba and Barto are glacial till soils formed in bedrock-controlled surfaces and feature approximately 12 to 30 inches of gravelly sandy loam or gravelly loam over bedrock.

Shallow bedrock, disturbed soils, gravelly soils, and steep slopes create risks for water erosion, sloughing, and overall soil stability. Area soils are expected to be significantly disturbed with potentially high gravel content and shallow bedrock. The AUAR area is situated on the summit and sideslopes of a glacially-derived hill feature. Much of the summit and portions of the side slopes have been graded for previous school facility development. Slopes exceed 40 percent in some areas. Well construction logs, cited in Section 11a, found bedrock within four to 24 feet of the surface near the southern base of the hill. Bedrock depth is likely shallower on the slopes and summit. Runoff rates may be high on steep slopes, previously disturbed areas, and areas of very shallow or exposed bedrock.

The majority of soils throughout the AUAR area have undergone past development, with most areas having received past cut-fill, grading and impervious surfaces which likely altered the characteristics beyond what can be interpreted from the SSURGO data. Non-disturbed areas of the AUAR area appear to have other limitations based on soil wetness, shallow bedrock, or other factors.

**Table 6. USDA Soil Map Units Within the AUAR Area (also see Figure 7, Appendix A)**

Map Unit Symbol	Map Unit Name	Hydrologic Group	Wind Erodibility Group	Kf (Water Erodibility factor)	Acres Within AUAR Area	Pct of AUAR Area
F163D	Urban land-Mesaba-Rock outcrop complex, 1 to 18 percent slopes	No rating	No rating	0.36	41.45	52
F160F	Rock outcrop-Mesaba-Barto complex, 18 to 60 percent slopes	No rating	No rating	0.40	34.96	44
F137B	Normanna-Canosia-Hermantown complex, 0 to 8 percent slopes	B/D	5	0.43	1.81	2
F143A	Giese muck, depressional, 0 to 1 percent slopes	C/D	5	0.47	1.50	2
<b>TOTAL</b>					<b>79.72</b>	<b>100.0</b>

The hydrologic soil groups are:

- **Group A:** Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.
- **Group B:** Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly

<sup>7</sup> 2023 Soil Survey Geographic Database. Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Accessed October 2023 via ESRI ArcGIS Online services.

of moderately deep or deep, moderately well drained, or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

- **Group C:** Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.
- **Group D:** Soils having a very slow infiltration rate (high runoff potential). These consist chiefly of soils with high clay content, soils that have a high-water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.
- **Dual Groups:** Dual Group designations (A/D, B/D, or C/D) are used to indicate naturally wet soils that belong to Group D due to a high water table but would meet the drainage class or textural criteria for Group A, B, or C if drained. Dual Group soils should be treated as Group D soils in the absence of effective artificial drainage.

The soil erodibility factors are:

- **Wind Erodibility Group:** Soils are assigned a Wind Erodibility Group (WEG) rating based on their inherent vulnerability to soil particle detachment from wind forces. Values range from 1 (most erodible) to 8 (least erodible).
- **Water Erodibility Factor (Kf):** The Soil Erodibility Factor (Kf or “rock free”) is a unitless quantitative description of the inherent vulnerability of a soil to water erosion. It provides a measurement of soil particles’ susceptibility to detachment from rain drops or surface runoff. Values range from 0.02 (least erodible) to 0.69 (most erodible). Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

### **AUAR Scope**

The AUAR will address the factors above and identify measures to mitigate soil stability and soil loss concerns.

## **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.*

### **Surface Waters**

A review of DNR geospatial data determined that there are no lakes, state designated trout streams

or lakes<sup>8</sup>, wildlife lakes<sup>9</sup>, migratory waterfowl feeding/resting lakes<sup>10</sup>, or lakes of biological significance<sup>11</sup> within the AUAR area.

The City of Duluth Streams data set indicates that Clarkhouse Creek is located along the southern boundary of the AUAR area and flows east. Additionally, Brewery Creek is located north of the AUAR area and crosses the northwest corner of the AUAR area at the intersection of H. Courtney Drive and Central Entrance. Figure 10, Appendix A identifies surface waters in the vicinity of the AUAR area. Lake Superior, classified as a lake of outstanding biological significance, is located one mile southeast of the AUAR area.

### **DNR Public Waters**

According to the DNR National Wetland Inventory (NWI) Wetland Finder<sup>12</sup> and geospatial data, no DNR Public Waters or Watercourses are located within the AUAR area.

Two DNR Public Waters and three DNR Public Watercourses are located within a mile of the AUAR area. Lake Superior, Public Water No. 69129101, is located approximately one mile southeast of the AUAR area, and Public Water Basin No. 69096702 is located approximately one mile to the south.

Buckingham Creek (S-002-000.5) and an unnamed creek tributary (S-002-000.5-002) are located approximately 0.7 miles southwest; Coffee Creek (S-002-000.7-002) and its small tributary (S-002-000.7.004) are located approximately 0.8 miles west; West Branch Chester Creek (S-003-010) is located approximately one mile northwest; and an unnamed tributary (S-003-006) of Chester Creek is located 0.8 miles northeast of the AUAR area. Figure 10, Appendix A identifies DNR Public Waters within and in close proximity to the AUAR area.

### **Wetland Resources**

The DNR National Wetland Inventory (NWI) geospatial data identifies a NWI wetland within the AUAR area. The wetland is comprised of a freshwater shrub-scrub (PSS1D) and freshwater emergent (PEM1D) wetland within one wetland complex, located in the southwestern corner of the AUAR area (Figure 11, Appendix A).

A wetland delineation (Figure 11, Appendix A) was conducted in June 2021 by WSP USA, Inc. and covered the majority of the AUAR area. A portion of the AUAR area not delineated at that time was the southcentral portion of the AUAR area around the broadcast towers. The 2021 delineation identified three wetlands: a Type 6 alder thicket wetland in the southwestern corner that corresponds with the shrub-scrub NWI wetlands; a Type 6 shrub-scrub wetland located in the southeastern corner of the AUAR area; and a Type 2 fresh meadow wetland located midway along the eastern AUAR boundary. Figure 11, Appendix A identifies wetland features within and in the vicinity of the AUAR area.

### **MPCA 303d Impaired Waters List**

A review of the MPCA's 2022 Impaired Waters List<sup>13</sup> identified no impaired waters within the AUAR area. Lake Superior, Assessment Unit Identification (AUID) 16-0001-00, is located approximately one mile southeast of the AUAR area and is impaired for aquatic consumption due to the presence of mercury (Hg) and polychlorinated biphenyls (PCB) in fish tissue (Figure 10, Appendix A). No Total Maximum Daily Load (TMDL) has been established for Lake Superior. Several aquatic invasive

<sup>8</sup> DNR. 2020. State Designated Trout Streams, Minnesota. Available at: <https://gisdata.mn.gov/dataset/env-trout-stream-designations>. Accessed October 2023.

<sup>9</sup> DNR. 2016. Designated Wildlife Lakes. Available at: <https://gisdata.mn.gov/dataset/env-designated-wildlife-lakes>. Accessed October 2023.

<sup>10</sup> DNR. 2016. Migratory Waterfowl Feeding and Resting Areas. Available at: <https://gisdata.mn.gov/dataset/env-migratory-waterfowl-areas>. Accessed October 2023.

<sup>11</sup> DNR. 2020. Lakes of Biological Significance. Available at: <https://gisdata.mn.gov/dataset/env-lakes-of-biological-significance>. Accessed October 2023.

<sup>12</sup> DNR. 2022. NWI Wetland Finder. Available at: <https://arcgis.dnr.state.mn.us/ewr/wetlandfinder/>. Accessed October 2023.

<sup>13</sup> MPCA. 2022. Impaired Waters Viewer (IWAV). Available at: <https://mPCA.maps.arcgis.com/apps/webappviewer/index.html?id=fcc5a12d2fd4b16bc95bb535d09ae82>. Accessed October 2023.

species (AIS) have been identified in Lake Superior and the St. Louis River (Lake Superior's largest tributary) including Eurasian watermilfoil, New Zealand mudsnail, round goby, ruffe, spiny waterflea, viral hemorrhagic septicemia (VHS), white perch and zebra mussels.<sup>14</sup> No other impaired waters were located within one mile of the AUAR area.

**Floodway/Floodplain**

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) panel 2704210025C generated through the National Flood Hazard Layer (NFHL) mapping tool<sup>15</sup> indicates that the majority of the AUAR area is within Zone C, or an area of minimal flood hazard. A small area in the northwest corner of the AUAR area, covering the roadway of the main entrance to the AUAR area at intersection of H. Courtney Drive and Central Entrance, is within the regulated 500-year floodplain (0.2% annual chance of flooding) and floodway associated with Brewery Creek (Figure 10, Appendix A). A second area starting in the southwestern corner and running along the southern boundary of the AUAR area is located within a regulated 100- and 500-year floodplains (1 percent and 0.2 percent annual chance of flooding) and floodway associated with Clarkhouse Creek and is located near the western entrance to the AUAR area. Appendix B provides the FEMA FIRM for the AUAR area. The AUAR area is located on a hill and averages approximately 650-700 feet above the elevation of Lake Superior.

St. Louis County and FEMA are in the process of updating the FIRMs. Preliminary FIRMs have been prepared and are currently published for public review and comment. Once all comments and appeals have been addressed, the preliminary FIRMS will be adopted by FEMA and become effective, which is anticipated in 2024. Figure 10, Appendix A shows the preliminary FEMA regulated flood hazards areas.

**AUAR Scope**

As part of the Draft AUAR, further analysis of the identified water resources will be conducted as needed. Avoidance, minimization, and mitigation strategies will also be identified to address potential impacts to the identified water resources.

- 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.**

A review of the Minnesota Well Index database<sup>16</sup> for the AUAR area identified no domestic water wells within the AUAR area. The only record within the AUAR area is a record for an environmental borehole (Unique Well ID No. 340357) and is completed within undifferentiated Quaternary-aged silt, sand, and gravel at a surface elevation of 1,243 feet above mean sea level (amsl). Table 7 identifies verified wells within the AUAR area. Figure 9, Appendix A identifies documented wells within and in the vicinity of the AUAR area.

**Table 7. Verified Wells Within the Project Area**

Well ID	Use Type	Location within Project Area	Depth (ft.)
340357	Environmental Borehole	South	20

The Minnesota Well Index database was reviewed for the adjacent properties to a one-quarter mile

<sup>14</sup> St. Louis County. 2023. County Land Explorer GIS Map. Available at: <https://gis.stlouiscountymn.gov/landexplorer/xplorer/stlouiscountymn.gov/>. Accessed October 2023.

<sup>15</sup> FEMA. 2021. National Flood Hazard Layer FIRMette. Available at: <https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd>. Accessed October 2023.

<sup>16</sup> Minnesota Well Index, Minnesota Department of Health, Version 2.1.2. Accessed October 2023. <https://mnwellindex.web.health.state.mn.us/>.

radius from the AUAR area property boundaries and identified four domestic bedrock water wells and one monitor well. The domestic water wells identified within the one-quarter mile radius are included in Table 9. The domestic water wells are completed in rock formations of the Midcontinent Rift Intrusive Supersuite ranging from 1,196 to 1,299 feet amsl, with static water elevations between 1,212 and 1,269 feet amsl. The monitor well identified within one-quarter mile radius is also included in Table 8.

**Table 8. Verified Wells Adjacent to the Project Area**

Well ID	Use Type	Location from Project Area	Depth (ft.)	Depth to Groundwater (ft.)
778106	Domestic	South	405	Not Reported
745808	Domestic	West	189	23
754614	Domestic	South	264	36
835884	Domestic	West	340	30
821830	Monitor Well	Northwest	17.5	10.5

The AUAR area is not located within a Drinking Water Supply Management Area (DWSMA) or Wellhead Protection Area (WPA).

**AUAR Scope**

The AUAR will address the potential of the development scenarios to impact groundwater resources.

- 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.**
    - 2) If the wastewater discharge is to a subsurface sewage treatment systems (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.**
    - 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.**

**AUAR Scope**

It is anticipated that proposed development within the AUAR area would connect to the City's sanitary sewer service system. The AUAR area would not be allowed to utilize SSTS, per City of Duluth ordinance, disallowing SSTS in areas served by municipal sewer.

The AUAR will discuss projected wastewater flows and loads generated by the development scenarios. The AUAR will describe any new wastewater collection and/or treatment



infrastructure planned for the area. Mitigation strategies included in the AUAR will describe mitigation required for the sanitary sewer system.

- 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.***

### **Existing Conditions**

Currently, stormwater in the proposed AUAR area drains to two City of Duluth Streams, Clarkhouse Creek and Brewery Creek. Two stormwater collection areas are denoted in Table 2. The AUAR area is roughly bisected in half from northwest to southeast. The southern portion of the AUAR area drains southeast to Clarkhouse Creek and the north portion drains northeast to Brewery Creek. Figure 10, Appendix A provides an overview of the AUAR area, water resources and drainage patterns.

### **Proposed Conditions**

Proposed conditions include a change in land use from institutional and brush/grassland to a business park or mixed use land use as described in Item 6. It is anticipated that stormwater management would be needed to meet temporary and permanent volume, rate control and water quality requirements associated with local (City) and State [National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) Construction Stormwater permit] stormwater requirements, including updates to any of the existing Best Management Practices (BMPs). Stormwater modeling would be conducted to determine the requirements and the BMP sizing to meet those requirements. As part of the modeling process, opportunities to incorporate climate change and resiliency would be performed. Additionally, the South Saint Louis Soil and Water Conservation District (SWCD) is developing their One Watershed One Plan, which may include goals the AUAR should consider when developing.

Note: Buckingham Creek, has been identified as a trout stream within one mile of the AUAR area; however, assuming existing drainage patterns are maintained, it is not expected the AUAR area would drain to Buckingham Creek, and therefore no additional requirements would need to be met.

### **AUAR Scope**

The Draft AUAR will explore opportunities for innovative natural resource-based stormwater management and alignment with the City and SWCD plans. Potential BMP locations will be identified, and construction site stormwater management (e.g., erosion and sediment control) will also be addressed, including BMPs requirements associated with local and state requirements as noted above.

- 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 any well abandonment. If connecting to an existing municipal water supply, identify the wells to be 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 the appropriation 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.**

There are no wells in the AUAR area as described in Item 12.a.ii. The AUAR area is connected to municipal water services. The Lakewood Water Treatment Plant provides city water with Lake Superior serving as the source for the city water. Projected water demands for the area would be utilized in planning additional distribution infrastructure. Any new distribution infrastructure would be constructed in accordance with the City of Duluth's current Water Master Plan or Comprehensive Plan and according to the City's Engineering Guidelines.

#### **AUAR Scope**

Projected water demands for the development scenarios and the capacity of the City's water system would be further evaluated and addressed in the Draft AUAR. The AUAR would include a discussion of the influence of climate change and resiliency of the water use associated with the development scenarios.

#### **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.**

Impacts to wetlands are regulated by the Minnesota Wetland Conservation Act (WCA) and the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act. The City of Duluth is the WCA local governmental unit (LGU) for the AUAR area. If wetland impacts associated with future development of the AUAR area are unavoidable a wetland replacement plan will be required. The developer would be required to demonstrate avoidance and minimization of wetland impacts to the greatest practicable extent. The USACE, LGU, and other appropriate stakeholders would be consulted during this process. The AUAR area is located within Bank Service Area (BSA) 1. Purchase of wetland bank credits would be used to provide mitigation for any impacted wetlands.

#### **AUAR Scope**

The Draft AUAR will identify and quantify anticipated impacts to wetlands within the AUAR area resulting from the development scenarios. Mitigation strategies will identify measures for avoidance, minimization, and mitigation for potential wetland impacts in accordance with

local, state, and federal regulations.

- 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.**

**AUAR Scope**

As part of the Draft AUAR, potential impacts to surface waters resulting from the development scenarios will be quantified and measures to avoid, minimize, or mitigate impacts will be identified. BMPs will be proposed that are consistent with the requirements of the local and state regulations. The AUAR will include a discussion of the potential for climate change to influence the impacts of the development scenarios.

**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 MPCA’s What’s In My Neighborhood (WIMN) online database was used to identify potentially contaminated sites within the AUAR area and within one-half mile of the AUAR area.<sup>17</sup> One site was identified within the AUAR area and 51 were identified with one-half mile of the AUAR area. These sites are identified in Table 9 and Figure 12, Appendix A. A review of the Minnesota Department of Agriculture (MDA) WIMN database did not identify any sites within the AUAR area or within one-half mile of the AUAR area.

**Table 9. MPCA WIMN Database Inquiry Results**

Site ID	Site Name	MPCA Program	Status
<b>Within the AUAR area</b>			
12549	ISD 709 Central High School	<ul style="list-style-type: none"> <li>• Hazardous Waste</li> <li>• Petroleum Remediation (2)</li> <li>• Underground Tanks</li> </ul>	Active Inactive Active
<b>Within One-Half Mile of the AUAR area</b>			
250591	DSC/Transportation Buildings	• Construction Stormwater	Active
257104	Independent School District 709	• Construction Stormwater	Active
28037	ISD 709 Secondary Campus	• Hazardous Waste	Inactive

<sup>17</sup> MPCA. *What’s In My Neighborhood*. Accessed October 2023. <https://www.pca.state.mn.us/about-mpca/whats-in-my-neighborhood>

Site ID	Site Name	MPCA Program	Status
<b>Within One-Half Mile of the AUAR area</b>			
214756	Planned Parenthood – Duluth	• Hazardous Waste	Active
22640	Daniel J Loban DDS PA	• Hazardous Waste	Inactive
23093	Duluth Ready Mix Concrete Inc	• Hazardous Waste	Inactive
139395	Falks Pharmacies – Nursing	• Hazardous Waste	Active
25053	Dougherty Veterinary Clinic	• Hazardous Waste	Active
103341	Central High School Entrance Rd	• Construction Stormwater	Inactive
60647	Central High School Athletic Facilities	• Construction Stormwater	Inactive
225345	Tru by Hilton	• Construction Stormwater	Active
253411	Windwood Townhomes	• Construction Stormwater • Wastewater	Active
26021	Marshall School	• Hazardous Waste • Petroleum Remediation • Underground Tanks	Active Inactive Active
113450	Superior View Condominiums	• Underground Tanks	Active
186181	Superior Vista Condominiums	• Petroleum Remediation	Inactive
145168	Minnesota State Patrol - District 2700	• Hazardous Waste	Inactive
113155	Mn Dept Of Transportation	• Petroleum Remediation (3) • Aboveground Tanks • Underground Tanks	Inactive Active Active
255745	Skyridge Flats Senior Housing	• Construction Stormwater	Active
200765	First United Methodist Church	• Petroleum Remediation	Inactive
125804	Harbor Highlands Hope VI Revitalization	• Construction Stormwater	Active
253432	Arris Duluth	• Construction Stormwater	Active
190255	Ahlin Residence	• Petroleum Remediation	Inactive
23551	Exhaust Pros – Duluth	• Hazardous Waste • Brownfields • Petroleum Remediation (2) • Underground Tanks	Active Inactive Inactive/Active Inactive
196139	Dr. Maryland Office Building Property	• Brownfields	Inactive
24187	Vacant Lots	• Hazardous Waste	Inactive
23632	Gold Crown Service – Duluth	• Hazardous Waste	Inactive
112268	Formerly Central Cyles	• Petroleum Remediation • Underground Tanks	Inactive Inactive
108306	Vacant Lot	• Underground Tanks	Inactive
27507	First Photo – 326	• Hazardous Waste	Inactive
<b>Within One-Half Mile of the AUAR area</b>			
14412	Family Dollar Store 11002	• Hazardous Waste	Inactive
13647	Northtown Motors	• Hazardous Waste • Petroleum Remediation (2)	Inactive Inactive
94606	Checker Auto Parts 1878	• Hazardous Waste	Inactive
23636	All Tune & Lube – Duluth	• Hazardous Waste	Inactive
26453	Goodyear Tire & Gemini Automotive	• Hazardous Waste • Petroleum Remediation	Inactive Inactive
117438	Hayes Subaru	• Petroleum Remediation (2) • Aboveground Tanks • Underground Tanks	Inactive Active Active
23088	Duluth Heights Dental Office – 303	• Hazardous Waste	Inactive
107408	Central Entrance Ico	• Petroleum Remediation	Inactive

Site ID	Site Name	MPCA Program	Status
		• Underground Tanks	Inactive
110255	AutoZone 3793	• Hazardous Waste • Petroleum Remediation	Active Inactive
25658	Highland Chateau	• Hazardous Waste • Underground Tanks	Inactive Active
145577	Solvay House	• Hazardous Waste	Active
251472	Essentia Health Amberwing	• Hazardous Waste	Active
139811	Amberwing Development	• Construction Stormwater	Inactive
36137	Atow Truck Auto Service	• Hazardous Waste	Inactive
148048	Central Entrance Short Stop	• Underground Tanks	Active
190695	Como Oil Co	• Petroleum Remediation	Inactive
157504	Residence - 24 & 30 E 9th St	• Hazardous Waste	Inactive
157322	Residence	• Hazardous Waste	Inactive
191525	Sam Stone Residence	• Petroleum Remediation	Inactive
24186	V Baker Trucking Inc	• Hazardous Waste	Inactive
26809	JS Print Group	• Hazardous Waste • Brownfields	Active Inactive
253998	Rush Property	• Petroleum Remediation	Active

Available historical documents associated with the AUAR area were reviewed including a General Excavation Report dated March 6, 2023 and an MPCA Petroleum Tank Release Site File Closure letter dated March 27, 2023 prepared for the school district. The General Excavation Report indicates a 6,000-gallon fuel oil underground storage tank (UST) was removed from the AUAR area on November 29, 2022. During removal, the 6,000-gallon tank appeared to have been installed with a former 30,000-gallon fuel oil UST which was also removed on November 29, 2022. The former tank basin was located along the northwest side of the former high school building on the northwest portion of the AUAR area. Two base soil samples were collected from soils beneath the 30,000-gallon UST, and excavated soils were placed back into the basin. Analytical results from the two base soil samples identified diesel range organics (DRO) at concentrations of 56.4 and 1,010 milligrams per kilogram (mg/kg). Petroleum contaminated soils within the former tank basin were removed in January and February 2023 with approximately 1,050 cubic yards of impacted soil hauled off-site for disposal at the approved landfill. The final extent of excavation was approximately 100 feet in length, 40 feet wide, and 30 feet deep with bedrock at the base of the excavation. One of the nine confirmation soil samples collected from the final excavation had a DRO concentration of 11.1 mg/kg with no other detections above laboratory reporting limits.

Following review of the General Excavation Report, the MPCA issued regulatory closure status associated with the Leak Site investigation associated with the petroleum release associated with the removal of the 6,000-gallon and 30,000-gallon USTs, MPCA Side ID: LS0021939.

### **AUAR Scope**

As part of the Draft AUAR, further review of available desktop resources will be conducted including the MPCA Institutional Controls Interactive (IC) online maps and the MPCA Petroleum Remediation Program (PRP) online maps. The potential to encounter contamination and hazardous materials during site demolition and construction activities will be evaluated. Mitigation strategies consistent with state and federal laws will be developed for the Draft AUAR.

- 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.***

The Draft AUAR will identify potential project related generation and storage of solid wastes as well as requirements for storing and disposing of the materials in accordance with state and federal laws.

- 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 adverse effects from the use/storage of chemicals/hazardous materials including source reduction and recycling. Include development of a spill prevention plan.***

The Draft AUAR will identify potential project related use and storage of hazardous materials as well as requirements for using and storing materials in accordance with state and federal laws.

- 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, and disposal. Identify measures to avoid, minimize or mitigate adverse effects from the generation/storage of hazardous waste including source reduction and recycling***

The Draft AUAR will identify potential project related generation and storage of hazardous wastes as well as requirements for generating and storing materials in accordance with state and federal laws.

#### **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 in near the site.***

The land cover within the AUAR area was reviewed and is described in Item 8 (Cover Types). Lands classified as grass/shrubland, that is transitional from wild land to manicured lands and urban lands (roads, buildings), are the predominant land cover types within the AUAR area, comprising approximately 51 acres or 64 percent of the total AUAR area. As discussed in Item 10 (Land Use), wooded areas are present. Figure 3, Appendix A illustrates land cover types within the AUAR area based on geospatial data. Table 3 in Item 6 (Project Description) details land cover types identified within the AUAR area.

Wetlands are rare within the AUAR area and comprise less than two acres of land. These areas could provide limited foraging or roaming habitat for a variety of urban wildlife species, including squirrels, rabbits, deer, coyotes, foxes, passerine birds, raptors, and other small mammals. Minor water features (e.g., intermittent water collection features, recognized as rain puddles or similar) could provide limited habitat for aquatic species such as turtles, fish, frogs, and toads within the AUAR area. It is anticipated that there is limited habitat for fish or wildlife. Limited habitat resources are present within the AUAR area due to the isolation of habitat and extent of past disturbance from development.

- b. *Describe rare features state-listed (endangered, threatened or special concern) species, native plant communities, Minnesota Biological Survey Sites of Biodiversity Significance, and other 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.***

Under Stantec's Limited License to Use Copyrighted Material (LA 2022-023) related to Rare Features Data, the Minnesota Department of Natural Resources (DNR) Natural Heritage Information System (NHIS) was searched in October 2023 to identify species within a one-mile radius of the AUAR area. The NHIS search did not indicate any records within the proposed expansion site. Records of rare species

were identified within in the one-mile review area. The following species information was gathered from the DNR Rare Species Guide (<https://www.dnr.state.mn.us/rsg/index.html>). A formal NHIS review request was submitted to the DNR through the Minnesota Conservation Explorer system (MCE No. 2023-00835) which has been routed for further review by DNR NHIS staff. Appendix D includes the initial MCE response letter received from the DNR.

### **Native Plant Communities and Sites of Biodiversity Significance**

Based on a review of the DNR MCE portal and NHIS database, no native plant communities are present within one mile of the AUAR area. One Minnesota Biological Survey (MBS) site (Duluth Lakewalk to Lester River) is located approximately one mile southeast of the AUAR area along the Lake Superior shoreline. This MBS site has been determined to be below the minimum biodiversity threshold for statewide significance.

### **State – Listed Species**

The NHIS search did not indicate any records within the AUAR area. Records of two rare species were identified within one mile of the AUAR area:

- Blanding's turtle (*Emydoidea blandingii*) - Threatened
- Lake sturgeon (*Acipenser fulvescens*) – Special Concern

### **Federally – Listed Species**

A review of the United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) tool identified three federally listed species and one candidate for federal listing with the potential to occur within the AUAR area, which are listed below. Appendix D includes the species lists generated through the USFWS IPaC review tool.

- Northern long-eared bat (*Myotis septentrionalis*) – Endangered
- Tri-colored bat (*Perimyotis subflavus*) – Proposed Endangered
- Canada lynx (*Lynx canadensis*) – Threatened
- Gray wolf (*Canus lupus*) - Threatened
- Monarch butterfly (*Danaus plexippus*) – Candidate
- Rufa red knot (*Calidris canutus rufa*) – Threatened

Seventeen migratory species have the potential to occur within the AUAR area. Suitable nesting habitat and construction timing will be considered when preparing the Draft AUAR to determine whether the development scenarios may affect nesting migratory Birds of Conservation Concern (BCC) in accordance with the Migratory Bird Treaty Act.

- 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.**

A comprehensive desktop assessment (i.e., using aerial photographs, tree species inventory, and publicly available information) will be completed to evaluate the potential for the development scenarios to impact fish, wildlife, plant communities, threatened and endangered species, rare features and ecosystems. In addition, the Draft AUAR will determine the acreage of natural communities or special ecosystems, based on state or local designations, to be disturbed as a result of the development scenarios.

The Draft AUAR will identify habitat requirements for the NLEB, tricolored bat, Canada lynx, gray wolf, monarch butterfly, and rufa red knot. The Draft AUAR will assess potential impacts to these species and determine if suitable habitat for these species would be potentially removed or disturbed by development

within the AUAR area. The Draft AUAR will also discuss how climate trends may influence the effects of future development on these species.

Construction activities that involve soil disturbance can result in the introduction and spread of invasive species. The Draft AUAR will identify permit requirements related to noxious weeds and invasive species management and will provide a discussion of recommended BMPs during construction and operation.

***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.***

Potential impacts to wetlands within the AUAR area will be examined as part of the Draft AUAR to determine whether the Blanding's turtle or other aquatic species may be impacted. Mitigation strategies included in the Draft AUAR will include measures to avoid, minimize, or mitigate potential impacts as applicable.

Based upon aerial imagery, potential wooded summer habitat for the NLEB and tricolored bats likely exists within the AUAR area. However, more information on potential tree clearing requirements and other activities within the AUAR area will be needed to assess impacts. Potential impacts to bat habitat, the presence or absence of white-nose syndrome (WNS), and the proximity to any known maternity roost trees or hibernacula will be further examined as part of the Draft AUAR to determine whether the NLEB and tricolored bat have the potential to be impacted by the development scenarios. Potential avoidance and minimization measures will be recommended to reach a determination of no effect for the NLEB, such as clearing trees outside of the active season (April 1 to October 31), if required.

The Draft AUAR will develop a mitigation strategy for the Canada lynx and gray wolf that may include USFWS consultation based on the anticipated impacts and current USFWS regulations. Forested habitat exists within the Project for these species. However, the abundance of residential housing, commercial businesses and roads surrounding the Project would limit use by either of these species since road density and human use reduces habitat suitability.

A review of land cover and aerial imagery suggests that beach or wetland habitat to support the migratory use by the rufa red knot is not present in the AUAR area. Likewise, the same review of land cover and aerial imagery suggests that native prairie or grassland to support the life cycle of the monarch butterfly is not present in the AUAR area. Further information will be reviewed during preparation of the Draft AUAR to determine the potential for the development scenarios to affect these species and identify avoidance, minimization, and mitigation strategies as applicable.

## **15. Historic Properties**

***Describe any historic structures, archeological sites, and/or traditional cultural properties on or in close 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.***

The Draft AUAR would include a review of the Minnesota State Historic Preservation Office's (SHPO) cultural resources inventory database for the AUAR area and a one-mile buffer indicating both historic structures and archaeological sites to determine if there are historic properties that would potentially be affected by development within the AUAR area. Anticipated impacts to identified historic resources would be evaluated and mitigation measures would be identified to avoid and minimize impacts during construction of future development projects in the AUAR area.



## 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 from the project. Identify any measures to avoid, minimize, or mitigate visual effects.***

### **AUAR Scope**

The analysis in the Draft AUAR will focus on views of the AUAR area from surrounding properties and scenic views from the AUAR area. The AUAR area is largely previously developed, now undeveloped, land. There are residential properties to the south, east and west which may be impacted by redevelopment of the AUAR area. The property is on a hill and has views of Lake Superior. Properties uphill from the site may be impacted and analysis of these views and mitigation will be included in the Draft AUAR.

Visual effects of land use within the AUAR area will be identified in the Draft AUAR for both Development Scenario A and Development Scenario B. Scenario A includes light industrial/warehouse distribution uses which may impact views of the AUAR area from surrounding properties. Scenario B would include up to 7 - story residential buildings, which could impact scenic views of Lake Superior for properties uphill. Analysis will be conducted to determine the impact. Mitigation measures may include recommendations for landscape screening, adjustment of lighting and others determined by the analysis.

## 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 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 effects from stationary source emissions.***

In accordance with the EQB's AUAR guidance document<sup>18</sup>, this item is not applicable to an AUAR as any stationary air emission sources large enough to merit environmental review would require individual review.

### **AUAR Scope**

The Draft AUAR will include a qualitative discussion of potential sources of low-level air emissions typically associated with the development scenarios.

***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 minimize or mitigate vehicle-related emissions.***

Motorized vehicles affect air quality by emitting air borne pollutants. The changes in traffic volumes, travel patterns, and roadway locations for either development scenario may affect air quality by changing the number of vehicles and the congestion levels in the AUAR area. It is not anticipated that the development scenarios would include transportation improvement projects that would be considered regionally significant per 40 CFR Part 93.

Criteria pollutants identified by the U.S. Environmental Protection Agency (EPA) are ozone, particulate matter (PM), carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), lead, and sulfur dioxide (SO<sub>2</sub>). In Minnesota,

<sup>18</sup> EQB. Alternative Urban Areawide Review Documents: Recommended Content and Format. Updated September 2008. <https://www.eqb.state.mn.us/sites/default/files/documents/AUAR%20guidance%20%28form%29%20-9-09.pdf>

air quality analysis for transportation projects primarily address localized CO emissions and Mobile Source Air Toxics (MSATs). The AUAR area is not located within a nonattainment or maintenance area for criteria pollutants. The EPA has approved a CO hot spot screening method designed to identify intersections that may result in CO emissions that exceed air quality standards. This screening method assumes that intersections with a total daily traffic volume exceeding 82,300 vehicles per day may result in potential CO impacts that exceed air quality standards. A traffic study would be completed as part of the Draft AUAR to confirm that traffic volumes generated by the development scenarios would not exceed this threshold.

### **AUAR Scope**

A qualitative vehicle emission analysis would be conducted in accordance with MnDOT air quality analysis guidance.<sup>19</sup> It is not anticipated that a quantitative air quality analysis for CO or MSATs would be required.

- c. Dust and odors – Describe sources, characteristics, duration, quantities, and intensity of dust and odors 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 or mitigate the effects of dust and odors.***

### **AUAR Scope**

Dust and odors may be of concern during construction of future development projects. The Draft AUAR will document City Ordinances and Codes pertaining to dust and odors and identify sensitive receptors in the vicinity of the AUAR area. Minimization and mitigation strategies for the AUAR area would be developed.

## **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 come to that conclusion and any GHG emission sources not included in the total calculation.***

### **AUAR Scope**

The Minnesota Environmental Quality Board's (EQB's) Revised EAW Guidance (July 2023)<sup>20</sup> would be used to develop the carbon footprint for the Draft AUAR. Greenhouse gas emissions would be calculated for existing conditions (baseline) the construction and operation of the two development options. Land use changes would also be included in the greenhouse gas quantification.

Readily available emission calculation tools such as U.S. EPA's Simplified Greenhouse Gas Emissions Calculator (SGEC) Tool or other acceptable methods would be used for the calculations. The SGEC Tool uses building square footage to estimate natural gas and electricity usage for various building types. Construction emissions would be calculated for each development scenario based on the number and type of mobile equipment needed. Greenhouse gas emissions from the equipment exhaust would be calculated using U.S. EPA emission factors.

Summary tables would be provided for the baseline and development scenarios, one summarizing construction emissions and the other summarizing operational emissions.

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<sup>19</sup> MnDOT. Air Quality Process. <http://www.dot.state.mn.us/project-development/subject-guidance/air-quality/process.html>

<sup>20</sup> EQB. Revised Environmental Assessment Worksheet (EAW) Guidance. July 2023. <https://www.eqb.state.mn.us/sites/default/files/documents/2023%20EAW%20Climate%20Guidance.pdf>

**b. GHG Assessment**

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

Reductions in greenhouse gas emissions associated with the development scenarios compared to baseline would be described. Any additional mitigation considered, such as the use of renewable energy sources, energy efficient lighting or other building efficiency specifications would be noted as well.

**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 selection of mitigation options would be described, including the reasoning behind the selection.

**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 net lifetime greenhouse gas emissions would be presented for both development scenarios, along with a discussion of how the scenarios affect the state's greenhouse gas reduction goals.

**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 mitigate the effects of noise.***

In accordance with the EQB's AUAR guidance document<sup>21</sup>, it is not required to address construction noise unless there is some unusual reason to do so. No unusual circumstances are anticipated for the development scenarios that would warrant conducting a quantitative noise analysis.

The State of Minnesota's noise rules (Minn. Rules Ch. 7030) establish noise limits by noise area classifications (NACs) based on land use at the location of the person that hears noise. The MPCA enforces noise standards at industrial facilities for which it has issued an air permit. MnDOT is responsible for state highway noise mitigation and coordinates with the Federal Highway Administration (FHWA) and the MPCA to evaluate road projects for noise impacts and possible mitigation measures.

Noise impacts in Minnesota are evaluated by measuring and/or modeling the noise levels that are exceeded 10 percent and 50 percent of the time during the hours of the day and/or night that have the loudest scenario. These numbers are identified as the L10 and L50 levels, respectively. The L10 value is the noise level that is exceeded for a total of 10 percent, or 6 minutes, of an hour. The L50 value is the noise level that is exceeded for a total of 50 percent, or 30 minutes, of an hour.

For traffic noise analyses, traffic volume, types of vehicles, operating speed, topography, and distance from the road to the receptor influences the traffic noise level at the receptor. The sound level decreases as distance from a source increases. A general rule regarding sound level decrease due to increasing distance from a line source (roadway) that is commonly used is: beyond approximately 50 feet from the sound source, each doubling of distance from the line source over hard ground (such as pavement or water) will reduce the sound level by 3 dBA, whereas each doubling of distance over soft ground (such as vegetated or grassy ground) results in a sound level decrease of 4.5 dBA.

<sup>21</sup> EQB. Alternative Urban Areawide Review Documents: Recommended Content and Format. Updated September 2008. <https://www.eqb.state.mn.us/sites/default/files/documents/AUAR%20guidance%20%28form%29%20-9-09.pdf>

1) *Existing noise levels/sources in the area*

Existing noise sources include vehicle traffic along Central Entrance, H. Courtney Drive and Portia Johnson Drive.

2) *Nearby sensitive receptors*

The majority of the AUAR area consists of previously developed; now undeveloped land. To the northwest of the AUAR area, the Duluth School District has facilities. Additionally, within the AUAR boundary, to the northeast, the Secondary Technical Center building is currently not in use. Nearby sensitive receptors would include medium-density and rural residences present adjacent to the AUAR area.

3) *Conformance to State noise standards*

Minnesota's noise pollution rules<sup>22</sup> are based on statistical calculations that quantify noise levels over a one-hour monitoring period. The L<sub>10</sub> calculation is the noise level that is exceeded for 10 percent, or 6 minutes, of the hour, and the L<sub>50</sub> calculation is the noise level exceeded for 50 percent, or 30 minutes, of the hour. There is no limit on maximum noise.

The statutory limits for a residential location are L<sub>10</sub> = 65 dBA and L<sub>50</sub> = 60 dBA during the daytime (7:00 a.m. – 10:00 p.m.) and L<sub>10</sub> = 55 dBA and L<sub>50</sub> = 50 dBA during the nighttime (10:00 p.m. – 7:00 a.m.). This means that during the one-hour period of monitoring, daytime noise levels cannot exceed 65 dBA for more than 10 percent of the time or 60 dBA more than 50 percent of the time. Table 10 summarizes noise standard classifications by land use.

**Table 10. Noise Area Classifications (NAC)**

<b>NAC</b>	<b>Common land use associated with the Noise Area Classification</b>	<b>Daytime (dBA) L<sub>10</sub></b>	<b>Daytime (dBA) L<sub>50</sub></b>	<b>Nighttime (dBA) L<sub>10</sub></b>	<b>Nighttime (dBA) L<sub>50</sub></b>
1	Residential housing, religious activities, camping and picnicking areas, health services, hotels, educational services	65	60	55	50
2	Retail, business and government services, recreational activities, transit passenger terminals	70	65	70	65
3	Manufacturing, fairgrounds and amusement parks, agricultural and forestry activities	80	75	80	75

NACs are based on the land use at the location of the person who hears the noise, which does not always correspond with the zoning of an area. Therefore, noise from an industrial facility near a residential area is held to the NAC 1 standards if it can be heard on a residential property.

By state law, the future proposed development in the AUAR area must comply with state noise standards. Future land uses must also comply with the local noise requirements pursuant to Duluth's Legislative Code, which includes the city's ordinances.

<sup>22</sup>More information on Minnesota Noise rules, [Minn. Rules Ch. 7030](https://www.pca.state.mn.us/sites/default/files/p-gen6-01.pdf), may be found at: <https://www.pca.state.mn.us/sites/default/files/p-gen6-01.pdf>

#### 4) Quality of life

The Draft AUAR would evaluate the potential quality of life impacts resulting from operational noise generated by the development scenarios. Mitigation strategies would be identified as applicable.

## 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.***

### **AUAR Scope**

The A.M. peak hour, P.M. peak hour, and daily trip generation for land uses within the AUAR area will be estimated using current trip generation information. A traffic impact study evaluating the impacts of the land uses within AUAR area will be completed for the AUAR. The traffic impact study will include intersection capacity analyses for intersections immediately adjacent to the AUAR area along Central Entrance. In addition, other intersections along roadways serving the study area such as Rice Lake Road, Arlington Avenue, and Mesaba Avenue will be evaluated.

Central Entrance is directly north of the AUAR area and provides access to the site. In 2021, this segment of roadway had an average annual daily traffic (AADT) of 25,264 vehicles per day. MnDOT is currently conducting a corridor study of Central Entrance from Trinity Road to Mesaba Avenue in preparation for reconstruction in 2026-2027 to improve traffic flow, business access, transit functioning, and pedestrian safety throughout the corridor.

Two bus transit routes have stops located near the AUAR area at H. Courtney Drive/Central Entrance. Route 112 provides hourly service between the Miller Hill Super One grocery and the Woodland neighborhood via UMD and the College of St. Scholastica. The Go Line - Green route provides 15-minute service from downtown Duluth to Walmart via the medical district and Miller Hill Mall. At the Miller Hill Mall, Route 107 provides service every 30 minutes along Trinity Road to Lake Superior College, Lincoln Park, and Downtown. Additionally, at downtown Duluth, Go Line - Green transit users can access the Go Line - Blue every 15 minutes for service east to UMD and west to Spirit Valley. The broader transit network for the City of Duluth was reviewed and is available at: <https://www.duluthtransit.com/home/getting-there/routes-schedules/>.

The proposed additional parking spaces, construction traffic, and the availability of transit and other transportation modes will be documented in the Draft AUAR.

- 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.***

The City of Duluth met with the Minnesota Department of Transportation to review the study area and as a result of that discussion, it was agreed that the traffic impact study will include the following intersections:

- Central Entrance (TH 194)/ Arlington Avenue

- Arlington Avenue/ Palm Street
- Central Entrance/ Blackman Avenue
- Blackman Avenue/ Palm Street/ Clearwood Drive
- Central Entrance/ Pecan Avenue
- Rice Lake Road/ Hickory Street/ Chinook Drive
- Rice Lake Road/ Pecan Avenue
- Central Entrance/ 13<sup>th</sup> Street
- Central Entrance/ Rice Lake Road
- Mesaba Avenue/ Lake Avenue
- Mesaba Avenue/ Skyline Parkway

The analysis would include the no-build and build scenarios for the development completion year. A background growth rate would be determined and applied to account for any background developments. A.M. and P.M. peak hour models would be developed for both no-build and build scenarios. Traffic operations for the weekday A.M. and P.M. peak hours would be analyzed for each scenario. Traffic operations at the study intersections and the development access intersections would be reported. Areas of possible mitigation would be identified. Figure 13, Appendix A identifies intersections to be evaluated in the traffic impact study.

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

The AUAR will include mitigation measures identified through the traffic impact analysis.

**21. Cumulative Potential Effects**

*(Preparers can leave this item blank if cumulative potential effects are addressed under the applicable EAW Items)*

**a. Describe the geographic scales and timeframes of the project related environmental effects that could combine with other environmental effects resulting in cumulative potential effects.**

The geographic scale considered in the cumulative potential effects analysis would include land adjacent to and within an approximately one-mile radius of the AUAR area. It is anticipated that the full buildout of the AUAR area would occur phases over several years based on market conditions. Reasonably foreseeable projects that are funded or planned to be constructed within the next ten years would be considered for the cumulative potential effects analysis.

**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 geographic scales and timeframes identified above.**

**AUAR Scope**

A comprehensive assessment of reasonably foreseeable projects would be conducted as part of the Draft AUAR. Desktop resources to be reviewed may include the *EQB Monitor*, City of Duluth's current and planned projects, including reference to the City's Planning & Development Division, Environmental, EAW (project) webpage, and the St. Louis County Highway Department's Projects and Construction webpage. The Draft AUAR will include a summary of known projects funded or under construction in the general geographical area adjacent to the AUAR area.

**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.**

## **AUAR Scope**

If reasonably foreseeable future projects are identified as part of Item 21.a, the potential for the environmental effects of these projects and the AUAR development scenarios to interact would be discussed.

## **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 how the environment will be affected, and identify measures that will be taken to minimize and mitigate these effects.***

No other potential environmental effects are anticipated that are not addressed by Items 1 through 21.