

# Updated Hermantown Industrial AUAR

## FINAL ALTERNATIVE URBAN AREAWIDE REVIEW



**AUGUST 2026**

PREPARED FOR:



PREPARED BY:

**Kimley»Horn**

## Table of Contents

|                                                                                                |     |
|------------------------------------------------------------------------------------------------|-----|
| 1. Project Title .....                                                                         | 5   |
| 2. Proposer .....                                                                              | 5   |
| 3. RGU.....                                                                                    | 5   |
| 4. Reason for Preparation .....                                                                | 6   |
| 5. Project Location.....                                                                       | 14  |
| 6. Project Description.....                                                                    | 17  |
| 7. Climate Adaptation and Resilience .....                                                     | 23  |
| 8. Cover Types .....                                                                           | 33  |
| 9. Permits and Approvals Required.....                                                         | 37  |
| 10. Land Use.....                                                                              | 41  |
| 11. Geology, Soils, and Topography/Landforms.....                                              | 51  |
| 12. Water Resources.....                                                                       | 57  |
| 13. Contamination/Hazardous Materials/Wastes .....                                             | 93  |
| 14. Fish, Wildlife, Plant Communities, and Sensitive Ecological Resources (Rare Features)..... | 100 |
| 15. Historic Properties .....                                                                  | 107 |
| 16. Visual.....                                                                                | 110 |
| 17. Air .....                                                                                  | 113 |
| 18. Greenhouse Gas Emissions/Carbon Footprint.....                                             | 118 |
| 19. Noise .....                                                                                | 125 |
| 20. Transportation .....                                                                       | 137 |
| 21. Cumulative Potential Effects.....                                                          | 145 |
| 22. Other Potential Environmental Effects .....                                                | 150 |
| Mitigation Plan.....                                                                           | 155 |

## List of Tables

|                                                                                                      |    |
|------------------------------------------------------------------------------------------------------|----|
| Table 1: Changes and Updates between 2025 and 2026 AUARs.....                                        | 6  |
| Table 2: AUAR Appendices Comparison .....                                                            | 12 |
| Table 3: Proposed Project.....                                                                       | 20 |
| Table 4: Interaction of Proposed Activities with Each Climate Trend and Projection Listed in 7a..... | 27 |
| Table 5: Existing and Proposed Cover Types .....                                                     | 33 |
| Table 6: Green Infrastructure .....                                                                  | 34 |

|                                                                                          |     |
|------------------------------------------------------------------------------------------|-----|
| Table 7: Trees.....                                                                      | 34  |
| Table 8: Anticipated Permits and Approvals.....                                          | 37  |
| Table 9: Hermantown 2045 Comprehensive Plan designations within the AUAR Study Area..... | 42  |
| Table 10: Soil Types.....                                                                | 54  |
| Table 11: Aquatic Resource Delineation Summary.....                                      | 58  |
| Table 12: MWI Wells within the AUAR Study Area.....                                      | 68  |
| Table 13: MDH Well Records within the AUAR Study Area.....                               | 69  |
| Table 14: MWI Wells within 0.25-miles of the Study Area.....                             | 69  |
| Table 15: Estimated Wastewater Demand.....                                               | 74  |
| Table 16: Rate Attenuation Summary.....                                                  | 83  |
| Table 17: Water Quality Modeling Results.....                                            | 84  |
| Table 18: Estimated Water Demand.....                                                    | 87  |
| Table 19: Historic Properties.....                                                       | 108 |
| Table 20: Construction Emissions.....                                                    | 122 |
| Table 21: Operational Emissions.....                                                     | 122 |
| Table 22: Existing Ambient Sound Pressure Measurements.....                              | 126 |
| Table 23: Minnesota State Noise Standards.....                                           | 128 |
| Table 24: Modeled Sound Pressure Levels with no Mitigation.....                          | 131 |
| Table 25: Example Mitigation Scenario.....                                               | 134 |
| Table 26: Trip Generation Forecasts.....                                                 | 138 |
| Table 27: Existing and Projected Intersection LOS.....                                   | 141 |
| Table 28: Mitigation Plan.....                                                           | 157 |

## List of Figures

|                                                                                                                             |    |
|-----------------------------------------------------------------------------------------------------------------------------|----|
| Figure 1: USGS Map.....                                                                                                     | 15 |
| Figure 2: AUAR Study Area Boundary.....                                                                                     | 16 |
| Figure 3: Conceptual Proposed Project Site Layout.....                                                                      | 21 |
| Figure 4: NCEI County Time Series - Average Temperature in St. Louis County.....                                            | 24 |
| Figure 5: National Environmental Modeling and Analysis Center (NEMAC) Average Daily Maximum Temperature.....                | 24 |
| Figure 6: NCEI County Time Series - Average Precipitation Trends in St. Louis County.....                                   | 25 |
| Figure 7: National Environmental Modeling and Analysis Center (NEMAC) – Total Precipitation Trends in St. Louis County..... | 25 |
| Figure 8: Existing Cover Types.....                                                                                         | 35 |
| Figure 9: Proposed Cover Types.....                                                                                         | 36 |
| Figure 10: Existing Land Use.....                                                                                           | 48 |
| Figure 11: Existing Zoning.....                                                                                             | 49 |
| Figure 12: Future Land Use.....                                                                                             | 50 |
| Figure 13: Soil Types.....                                                                                                  | 56 |

|                                                                                           |     |
|-------------------------------------------------------------------------------------------|-----|
| Figure 14: Surface Water Resources Within Study Area.....                                 | 61  |
| Figure 15: Surface Water Resources (within 1 mile).....                                   | 62  |
| Figure 16: FEMA Floodplain Map.....                                                       | 63  |
| Figure 17: Spring Locations .....                                                         | 65  |
| Figure 18: Groundwater Resources .....                                                    | 70  |
| Figure 19: Example of an Air-Cooled, Closed-Loop Cooling System .....                     | 73  |
| Figure 20: Off-Site Utility Improvements .....                                            | 76  |
| Figure 21: Proposed Stormwater Management .....                                           | 86  |
| Figure 22: Potential Wetland Impacts .....                                                | 92  |
| Figure 23: Concept Building and Landscaping Visualizations .....                          | 111 |
| Figure 24: Comparison of Cut Off Lighting Fixture Styles and Effects .....                | 113 |
| Figure 25: Lighting Temperature Ranges & Standards .....                                  | 113 |
| Figure 26: Noise Measurement Locations .....                                              | 127 |
| Figure 27: Sensitive Receptors.....                                                       | 129 |
| Figure 28: Proposed Project Noise Levels – With and Without Mitigation .....              | 136 |
| Figure 29: Proposed Project Low Frequency Noise Levels – With and Without Mitigation..... | 137 |
| Figure 30: Traffic Study Intersections .....                                              | 144 |

## List of Appendices

- Appendix A: Preliminary Site Phasing
- Appendix B: Wetland Delineation Report
- Appendix C: Stormwater Report
- Appendix D: Phase I and II Environmental Site Assessment
- Appendix E: Species Reports
- Appendix F: Cultural Resource Studies
- Appendix G: Lighting and Landscaping Plans
- Appendix H: Greenhouse Gas Quantification
- Appendix I: Traffic Impact Analysis and Construction Memo
- Appendix J: Draft AUAR Comment Responses
- Appendix K: Comments

## Alternative Urban Areawide Review

An Alternative Urban Areawide Review (AUAR) is an alternative to an Environmental Impact Statement (EIS) that responds to the items in the EAW form (December 2022 version) to the level of analysis similar to an EIS and substitutes for any EAW or EIS if required for specific qualifying projects. Minnesota Rules (Minn. R.) Chapter 4410.3610, subp. 4 states that “the contents 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 residential, commercial warehousing, and light industrial development and associated infrastructure.”<sup>1</sup> A light industrial facility is “a subcategory of industrial land use with a primary function other than manufacturing and less than 500 employees.”<sup>2</sup>

An AUAR for a certain specific large project consists of three steps: Scoping Document (used when a project exceeds a mandatory EIS threshold or will comprise at least 50 percent of the geographic area to be reviewed), Draft AUAR, and Final AUAR.<sup>3</sup> A Draft AUAR Order and Scoping Document were published in the Minnesota Environmental Quality Board’s (EQB) *EQB Monitor* on March 31, 2026, initiating a 30-day scoping comment period that concluded on April 30, 2026. The City of Hermantown (or City) considered comments received during the scoping comment period and relied on comments to inform the scope of the AUAR. Responses to comments received on the Scoping Document were included in the Final AUAR Order adopted by the City of Hermantown City Council on May 18, 2026.

A Draft AUAR was published for a second 30-day comment period from June 16 to July 16, 2026. This Final AUAR addresses the topics ordered in the Scoping Document, and public and agency comments submitted during the Draft AUAR comment period were considered in developing this Final AUAR. This EAW form is being used to delineate the issues and guide analyses that were reviewed in the Final AUAR. Where the AUAR guidance provided by the EQB indicates that an AUAR response should differ notably from what is required for an EAW, the guidance is noted in *italics*.

---

<sup>1</sup>See also City of Hermantown Zoning Code, Section 2304.1 (“An AUAR may be used as an alternative review document to review the anticipated cumulative environmental effects of residential, commercial, and industrial development and associated infrastructure in a particular area following the guidelines in Minnesota Rules 4410.3610.”).

<sup>2</sup> Minn. R. 4410.0200, subp. 42 a.

<sup>3</sup> Minn R. 4410.360, subp. 5a.

## 1. PROJECT TITLE

---

Updated Hermantown Industrial AUAR

## 2. PROPOSER

---

**Proposer:** Harmony Group LLC, a subsidiary of Google LLC

**Contact Person:** Margot Wickman

**Address:** 60 S. 6<sup>th</sup> Street, Suite 3400

**City, State, ZIP:** Minneapolis, MN 55402-4018

**Phone:** 612-334-5017

**Email:** [Margot.Wickman@KutakRock.com](mailto:Margot.Wickman@KutakRock.com)

## 3. RGU

---

**RGU:** City of Hermantown

**Contact Person:** Eric Johnson

**Title:** Community Development Director

**Address:** 5105 Maple Grove Road

**City, State, ZIP:** Hermantown, MN 55811

**Phone:** 218-729-3600

**Email:** [AUARcomments@hermantownmn.com](mailto:AUARcomments@hermantownmn.com)

#### 4. REASON FOR PREPARATION

*AUAR Guidance: Not applicable to an AUAR.*

The City of Hermantown and Project Proposer are voluntarily preparing an updated AUAR to provide the public with additional opportunities to comment on newly available Project details for the proposed data center campus. The information and analysis within the updated AUAR will provide the City of Hermantown with a more extensive and detailed examination of the potential environmental impacts from the proposed Project. An AUAR for an area that included the current study area was completed in fall 2025. This updated AUAR has a reduced Study Area.

The proposed Project meets the State's mandatory requirements for an environmental review process based on Minnesota Rules 4410.4400, subp. 11. Minnesota Rule 4410.3610 allows for an alternative form of review through an AUAR for qualifying projects, including this proposed Project.

An AUAR is an appropriate process for environmental review for the proposed Project due to the total Project's size. The 1.8 million square feet of light industrial, warehouse, storage, and office uses, and would be designed and constructed in a multi-year phased approach. The AUAR process was adopted to review incremental impacts accumulating from a series of sequential projects in a certain geographic area while analyzing the expected final buildout of the Study Area. It is permissible to review specific development projects through the AUAR process. Further, the City of Hermantown has adopted a comprehensive plan meeting the requirements of Minn. R. 4410.3610. See Minn. R. 4410.3610, subp. 1: "A local unit of government may use the procedures of this part . . . to review anticipated . . . light industrial development and associated infrastructure in a particular geographic area within its jurisdiction."<sup>4</sup> A light industrial facility is "a subcategory of industrial land use with a primary function other than manufacturing and less than 500 employees."<sup>5</sup>

Below is a list of the changes that have been made between the 2025 and 2026 AUAR:

**Table 1: Changes and Updates between 2025 and 2026 AUARs**

| AUAR Item No. and Topic | Updated in 2026 AUAR                                                                                                                                                                                                                                                         |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Introduction            | <ul style="list-style-type: none"> <li>The Updated AUAR includes a summary of the purpose of the AUAR.</li> <li>The introduction in the Updated AUAR explains that there are three steps in the AUAR process: a Scoping Document, a Draft AUAR, and a Final AUAR.</li> </ul> |
| 1. Project Title        | <ul style="list-style-type: none"> <li>Added "updated" to title to reflect that this AUAR would add additional project details to the previously completed AUAR.</li> </ul>                                                                                                  |
| 2. Proposer             | <ul style="list-style-type: none"> <li>Project Proposer was revised to reflect that Google LLC was publicly announced as the project proposer, and to</li> </ul>                                                                                                             |

<sup>4</sup>See also City of Hermantown Zoning Code, Section 2304.1 ("An AUAR may be used as an alternative review document to review the anticipated cumulative environmental effects of residential, commercial, and industrial development and associated infrastructure in a particular area following the guidelines in Minnesota Rules 4410.3610.").

<sup>5</sup> Minn. R. 4410.0200, subp. 42 a.

| AUAR Item No. and Topic                                                                                                                                                                                                                                                                                               | Updated in 2026 AUAR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                       | state that Harmony Group LLC, is a subsidiary of Google LLC.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 3. RGU                                                                                                                                                                                                                                                                                                                | <ul style="list-style-type: none"> <li>Updated email address to provide an AUAR-specific email address.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 4. Reason for Preparation                                                                                                                                                                                                                                                                                             | <ul style="list-style-type: none"> <li>The Updated AUAR includes a summary describing the Updated AUAR and its release for public review and comment with new project information.</li> <li>This section clarifies that the Updated AUAR includes a more detailed evaluation of potential environmental impacts based on new project information, while reflecting a reduced Study Area.</li> <li>In addition, to address concern about the availability of the AUAR process, the Updated AUAR includes language explaining that the AUAR is the appropriate process to review incremental impacts accumulating from a series of sequential projects in a certain geographic area while analyzing the expected final buildout of the Study Area, consistent with Minn. R. 4410.3610, subp. 1.</li> </ul>                                                                                                                                                                                                                                                                   |
| 5. Project Location                                                                                                                                                                                                                                                                                                   | <ul style="list-style-type: none"> <li>With additional design specifics, the Study Area boundary has been reduced by two parcels – removing the existing substation – which reduced the Study Area from 403 to 278 acres. In this section, the tax parcels were updated to remove the substation parcels, and figures were updated to reflect new Study Area boundary.</li> <li>All subsequent sections of the updated AUAR were updated to reflect this new Study Area.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 6. Project Description <ul style="list-style-type: none"> <li>a. Existing Site Conditions</li> <li>b. Site Selection &amp; Consideration of Alternative Sites</li> <li>c. Proposed Development and Utilities</li> <li>d. Construction Activities and Timing</li> <li>e. Future Permitting and/or Approvals</li> </ul> | <ul style="list-style-type: none"> <li>The Project Description was updated to reflect the reduced Study Area for the Updated AUAR by reducing the approximate land area, and clarifying that parcels were removed.</li> <li>In light of public comments about site selection, the Updated AUAR includes a new section on Site Selection &amp; Consideration of Alternative Sites, which is not a required AUAR section.</li> <li>A conceptual design scenario was presented that identified data center buildings. The Updated AUAR includes a discussion and analysis of on-site utilities, such as need for utility pads, equipment yards, and backup generators. The updated AUAR includes additional information about project needs.</li> <li>The discussion of construction activities and timing was updated to provide additional details on the project timeline and to provide more specifics on anticipated construction activities.</li> <li>New Section – Future Permitting and/or Approvals was added to identify elements that may be subject to</li> </ul> |

| AUAR Item No. and Topic                                                                 | Updated in 2026 AUAR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                         | <p>separate permitting and/or separate environmental review by other RGUs or federal agencies, depending on final design and applicable thresholds.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <p>7. Climate Adaptation and Resilience</p>                                             | <ul style="list-style-type: none"> <li>• Temperature and precipitation data and supporting graphs were updated with more recent data sets from National Environmental Modeling and Analysis Center (NEMAC) Average Daily Maximum Temperature and Total Precipitation Trends.</li> <li>• Flood Risk Section was updated to include FEMA Flood Insurance Rate Maps and the Minnesota Climate Mapping and Analysis Tool.</li> <li>• Cooling Degree Days Section was updated to define the difference between RCP 4.5 and RCP 8.5 to show that the Updated AUAR accounts for different climate outcomes.</li> <li>• Table 2 – Climate Trends and Climate Projections column, Potential Environmental Effects column, and Adaptation Strategies column were updated in the table to include additional potential environmental effects, and adaptation strategies, including data-center-specific adaptation strategies.</li> </ul> |
| <p>8. Cover Types</p>                                                                   | <ul style="list-style-type: none"> <li>• Added maximum development scenario conditions cover types figures to reflect the impacts of a maximum development scenario for a proposed data center project.</li> <li>• The Green Infrastructure paragraph was updated with additional information about green infrastructure systems that would be included in a proposed data center project.</li> <li>• A new paragraph with additional information about Natural Buffers was added to explain that use of natural buffers would be prioritized in site design.</li> </ul>                                                                                                                                                                                                                                                                                                                                                       |
| <p>9. Permits and Approvals Required</p>                                                | <ul style="list-style-type: none"> <li>• Four additional sections, which are not required sections of an AUAR, were added to give the public information about other processes related to approval of the proposed Project, or potential processes for future design elements: <ul style="list-style-type: none"> <li>○ New section - Approvals and Decisions Intended to be supported by the AUAR.</li> <li>○ New section - Approvals Not Supported by the AUAR and Other RGUs.</li> <li>○ New section - Public Finance Assistance.</li> <li>○ New section - Approvals Required for Public Utility Extensions.</li> </ul> </li> </ul>                                                                                                                                                                                                                                                                                         |
| <p>10. Land Use</p> <p>a. Describe</p> <p>b. Discuss the project compatibility with</p> | <ul style="list-style-type: none"> <li>• This section was updated throughout to reflect the updated Study Area.</li> <li>• The Land Use section was also updated to provide additional details about comprehensive planning, zoning, and the City of Hermantown's 2045 Comprehensive Plan,</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

| AUAR Item No. and Topic                                                                                                                                                                            | Updated in 2026 AUAR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>nearby land use, zoning, and plans...</p> <p>c. Identify measures incorporated into the proposed project to mitigate...</p>                                                                     | <p>and to reflect that the proposed data center project would require a special use permit.</p> <ul style="list-style-type: none"> <li>• St. Louis River Comprehensive Watershed Management Plan was updated to include additional information on site design requirements to show compliance.</li> <li>• To evaluate whether the proposed development is consistent with existing City plans, three additional sections were added to the Updated AUAR: <ul style="list-style-type: none"> <li>○ New Section – Consistency with Comprehensive Sanitary Sewer and Water Plans</li> <li>○ New Section – Consistency with Hermantown 2045 Comprehensive Plan</li> <li>○ New Section – Consistency with Zoning</li> </ul> </li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <p>11. Geology, Soils, and Topography/Landforms</p> <p>a. Geology</p> <p>b. Soils and topography</p>                                                                                               | <ul style="list-style-type: none"> <li>• Updated to include additional geotechnical report findings.</li> <li>• Tables and figures were updated to reflect the updated Study Area.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <p>12. Water Resources</p> <p>a. Surface Water</p> <p>b. Groundwater</p> <p>c. Wastewater</p> <p>d. Stormwater</p> <p>e. Water Appropriation</p> <p>f. Wetlands</p> <p>g. Other surface waters</p> | <ul style="list-style-type: none"> <li>• Surface water section was updated to include final wetland delineation information.</li> <li>• Added overview on the MPCA's Midway River study and how it relates to this Study Area.</li> <li>• Groundwater was updated to include additional information on groundwater springs, commitments regarding groundwater surveys being conducted before and during construction to monitor water levels. Additional study was added related to groundwater–surface water interaction and thermal considerations for final project design.</li> <li>• Added information on proposed wastewater generation and additional information on data center cooling systems evaluated.</li> <li>• Stormwater Environmental Effects section – updated project information based on the reduced Study Area. <ul style="list-style-type: none"> <li>○ Existing Conditions section– updated based on new project approximate acreage and updated Study Area.</li> <li>○ During Construction section – additional information provided about stormwater discharge permits.</li> <li>○ Post Construction section –added paragraphs on stormwater basin, snow melt, and runoff. The following sections were added to summarize the proposed stormwater treatment system:</li> </ul> </li> </ul> |

| AUAR Item No. and Topic                                                                                                                                                                                                                                                                                                                                                                            | Updated in 2026 AUAR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                    | <ul style="list-style-type: none"> <li>○ New Section - Stormwater Basin Details</li> <li>○ New Section - Rate Attenuation Summary</li> <li>○ New Section – Water Quality Summary</li> <li>○ New Section – Receiving Waters Impact Summary</li> <li>○ New Section – Next Steps</li> <li>• Updated water demands for commissioning water for a data center. The following sections were added to evaluate data center cooling technologies: <ul style="list-style-type: none"> <li>○ New Section – Cooling Technologies</li> <li>○ New section – Closed Loop System</li> <li>○ New section – Other Water Use Options</li> </ul> </li> <li>• Section was updated to include updates on USACE coordination and wetland mitigation related to the proposed Project and public utilities extension.</li> <li>• Tables and figures were updated throughout to reflect findings in updated reports and new study area boundary.</li> </ul> |
| <p>13. Contamination/Hazardous Materials/Wastes</p> <ul style="list-style-type: none"> <li>a. Pre-project Site Conditions</li> <li>b. Project related generation/storage of solid wastes</li> <li>c. Project Related Use/Storage of Hazardous Materials</li> </ul>                                                                                                                                 | <ul style="list-style-type: none"> <li>• Updated information in Pre-Project Site Conditions to reflect the additional information from the Phase I ESA and Phase II ESA. <ul style="list-style-type: none"> <li>○ Operation Generated Solid Waste – Additional information provided on data center e-waste.</li> </ul> </li> <li>• Construction Waste section – added sustainability measures. <ul style="list-style-type: none"> <li>○ Operational Waste Section – added information about backup generators and fuel quantities.</li> </ul> </li> </ul>                                                                                                                                                                                                                                                                                                                                                                          |
| <p>14. Fish, Wildlife, Plant Communities, and Sensitive Ecological Resources (Rare Features)</p> <ul style="list-style-type: none"> <li>a. Describe fish and wildlife resources...</li> <li>b. Describe rare features such as state-listed species, native plant communities...</li> <li>c. Discuss how the identified fish, wildlife, plant communities, rare features, and ecosystems</li> </ul> | <ul style="list-style-type: none"> <li>• Updated section with data from the latest MDNR Natural Heritage Review request and updated IPaC.</li> <li>• New Section – Bald and Golden Eagle Protection Act</li> <li>• Stormwater section – minor verbiage changes</li> <li>• New Section - Lightning</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

| AUAR Item No. and Topic                                                                                                                 | Updated in 2026 AUAR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>may be affected by project....</p> <p>d. Identify measures that will be taken to avoid, minimize, or mitigate adverse effects...</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 15. Historic Properties                                                                                                                 | <ul style="list-style-type: none"> <li>Updated to include information from the Phase I archaeological survey and MnSHPO's concurrence.</li> <li>New Section – Tribal Coordination</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 16. Visual                                                                                                                              | <ul style="list-style-type: none"> <li>This section was updated with more details about visual impacts for the Study Area including data center concept visualizations.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <p>17. Air</p> <p>a. Stationary Source Emissions</p> <p>b. Vehicle Emissions</p> <p>c. Dust and Odors</p>                               | <ul style="list-style-type: none"> <li>This section was updated with more details about data center backup generation needs, fuel storage, and permits/approvals.</li> <li>New Section – Air Quality Review of backup generators</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <p>18. Greenhouse Gas Emissions/Carbon Footprint</p> <p>a. GHG Quantification</p> <p>b. GHG Assessment</p>                              | <ul style="list-style-type: none"> <li>Additional information provided on how GHG emissions are calculated for electricity using the EQB's GHG calculator.</li> <li>GHG quantifications and mitigation updated to reflect data center development.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 19. Noise                                                                                                                               | <ul style="list-style-type: none"> <li>Noise section was updated to evaluate existing and proposed conditions for a data center development. The following were new sections added: <ul style="list-style-type: none"> <li>New section title – Existing Noise Conditions – more details added including ambient sound pressure measurements.</li> <li>New Section – Adjacent Noise Receptors</li> <li>New Section – Minnesota State Noise Standards</li> <li>New Section – Local Noise Regulations</li> <li>Construction Noise Section – Additional information provided.</li> <li>New Section – Low-frequency Noise</li> <li>New Section - Future Noise Conditions</li> <li>New Section – Required Mitigation</li> <li>New Section – Chiller Enclosures</li> <li>New Section – Noise Walls</li> <li>New Section – Landscaping (berms)</li> <li>New Section - Additional Mitigation</li> <li>New Section – Example Mitigation Scenario</li> </ul> </li> <li>Additionally, there were new tables and figures based on these updates.</li> </ul> |

| AUAR Item No. and Topic                                                                                                                                                                                                                                                                                                                                                | Updated in 2026 AUAR                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 20. Transportation <ul style="list-style-type: none"> <li>a. Describe traffic-related aspects of project construction..</li> <li>b. Discuss the effect on traffic congestion...</li> <li>c. Identify measures that will be taken to minimize or mitigate project related transportation effects</li> </ul>                                                             | <ul style="list-style-type: none"> <li>• Traffic generation updated to include both construction and operations traffic generation numbers and additional information provided from the 2026 traffic study.</li> <li>• Tables and figures were updated with reduced Study Area.</li> </ul>                                                                                                                                                                                              |
| 21. Cumulative Potential Effects <ul style="list-style-type: none"> <li>a. Describe geographic scales and timeframes of the project related environmental effects...</li> <li>b. Describe any reasonably foreseeable future projects...</li> <li>c. Discuss the nature of the cumulative potential effects and summarize any other available information...</li> </ul> | <ul style="list-style-type: none"> <li>• Background section added to provide more details on cumulative potential effects methodology.</li> <li>• New Section – Geography and timing evaluation on reasonably foreseeable projects.</li> <li>• Section was updated to include more details on foreseeable projects that may occur in the relevant area.</li> <li>• Additional information related to potential cumulative effects from Water Resources, Traffic, and Energy.</li> </ul> |
| 22. Other Potential Environmental Effects                                                                                                                                                                                                                                                                                                                              | The following additional topics were added to the AUAR based on scoping comments received:<br>New Section – Energy Use<br>New Section – Existing Utility Infrastructure<br>New Section – Proposed Energy Use<br>New Section – Infrastructure Upgrades<br>New Section – Costs<br>New Section – Electromagnetic Fields<br>New Section – Types of EMF Radiation<br>New Section – Heat<br>New Section – Fire Risk                                                                           |

**Table 2: AUAR Appendices Comparison**

| 2025 AUAR Appendix                                                                                                                                                      | Updated in 2026 AUAR                                                                                                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Appendix A - Wetland Delineation Report <ul style="list-style-type: none"> <li>• March 24, 2025, Memorandum</li> <li>• March 2025 Wetland Delineation Report</li> </ul> | Appendix B – Wetland Reports <ul style="list-style-type: none"> <li>• October 2025 Wetland Delineation Report</li> </ul> |

| 2025 AUAR Appendix                                                                                                                                                        | Updated in 2026 AUAR                                                                                                                                                                                                                                              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Appendix B – Agency Correspondence <ul style="list-style-type: none"> <li>March 21, 2025 - DNR Natural Heritage Review</li> <li>March 21, 2025 - USFWS IPaC</li> </ul>    | Appendix E – Species Reports <ul style="list-style-type: none"> <li>January 29, 2026 - Natural Heritage Report</li> <li>July 27, 2026 – USFWS IPaC</li> </ul>                                                                                                     |
| Appendix C – Phase 1A Cultural Resource Literature Review <ul style="list-style-type: none"> <li>March 10, 2025 – Phase 1A Cultural Resource Literature Review</li> </ul> | Appendix F – Cultural Resources Studies <ul style="list-style-type: none"> <li>July 15, 2026 SHPO Concurrence Letter</li> <li>January 7, 2025 – Phase 1A Cultural Resource Literature Review</li> <li>January 15, 2026 – Phase I Archaeological Survey</li> </ul> |
| Appendix D – Greenhouse Gas Analysis <ul style="list-style-type: none"> <li>2025 GHG</li> </ul>                                                                           | Appendix H – Greenhouse Gas Quantification <ul style="list-style-type: none"> <li>Includes response to MCEA’s Greenhouse Gas comments from Draft AUAR</li> <li>March 27, 2026 - Minnesota Climate Calculator</li> </ul>                                           |
| Appendix E – Traffic Study <ul style="list-style-type: none"> <li>June 2025 – Traffic Study</li> </ul>                                                                    | Appendix I – Traffic Impact Studies <ul style="list-style-type: none"> <li>March 27, 2026 – Traffic Study</li> </ul>                                                                                                                                              |
| Appendix F – Comment Responses <ul style="list-style-type: none"> <li>Through September 4, 2025</li> </ul>                                                                | Updated with new comment responses from June 16- July 16, 2026 comment period                                                                                                                                                                                     |
| Appendix G – Comments <ul style="list-style-type: none"> <li>September 4, 2025</li> </ul>                                                                                 | Updated with new comments from June 16- July 16, 2026 comment period                                                                                                                                                                                              |
|                                                                                                                                                                           | <b>New</b> Appendix A – Conceptual Phasing Plans <ul style="list-style-type: none"> <li>2025 Draft Conceptual Design</li> </ul>                                                                                                                                   |
|                                                                                                                                                                           | <b>New</b> Appendix C – Stormwater Management Plan <ul style="list-style-type: none"> <li>August 11, 2025 - Stormwater Management Plan</li> </ul>                                                                                                                 |
|                                                                                                                                                                           | <b>New</b> Appendix D – Phase I and II Environmental Site Assessment <ul style="list-style-type: none"> <li>January 7, 2026 - Phase I ESA</li> <li>June 19, 2026 - Phase II ESA</li> </ul>                                                                        |
|                                                                                                                                                                           | <b>New</b> Appendix G – Landscaping and Lighting Plans <ul style="list-style-type: none"> <li>2025 – Lighting Plans</li> <li>July 2025 Landscape Plan</li> </ul>                                                                                                  |

## 5. PROJECT LOCATION

---

**County:** St. Louis County

**City/Township:** Hermantown

**PLS Location (¼, ¼, Section, Township, Range):** Section 31, Township 50N, Range 15W

**Watershed (81 major watershed scale):** MW# 3 - St. Louis River

**Tax Parcel Numbers:** 395-0010-09100, 395-0010-09102, 395-0010-09103, 395-0010-09090, 395-0010-09095, 395-0010-09131, 395-0010-09135, 395-0010-09140, 395-0010-09155, 395-0010-09160, 395-0010-09170, 395-0010-09182, 395-0010-09110, 395-0010-09120, 395-0010-09130, 395-0010-09150, 395-0010-09161, 395-0010-09180, 395-0010-09305, 395-0010-09310, 395-0010-09320, 395-0010-09330, 395-0010-09340, 395-0010-09300, 395-0010-09302, 395-0010-09080.

**At a minimum, attach each of the following to the AUAR:**

- **US Geological Survey (USGS) 7.5 minute, 1:24,000 scale map indicating project boundaries** (See Figure 1)
- **Map depicting the boundaries of the AUAR and any subdistricts used in the AUAR analysis** (see Figure 2 and Figure 3)
- 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)
- **Cover type map as required for Item 8** (See Figure 8 and Figure 9)
- **Land use and planning and zoning maps as required in conjunction with Item 10** (See Figure 10, Figure 11, Figure 12)

**Legend**

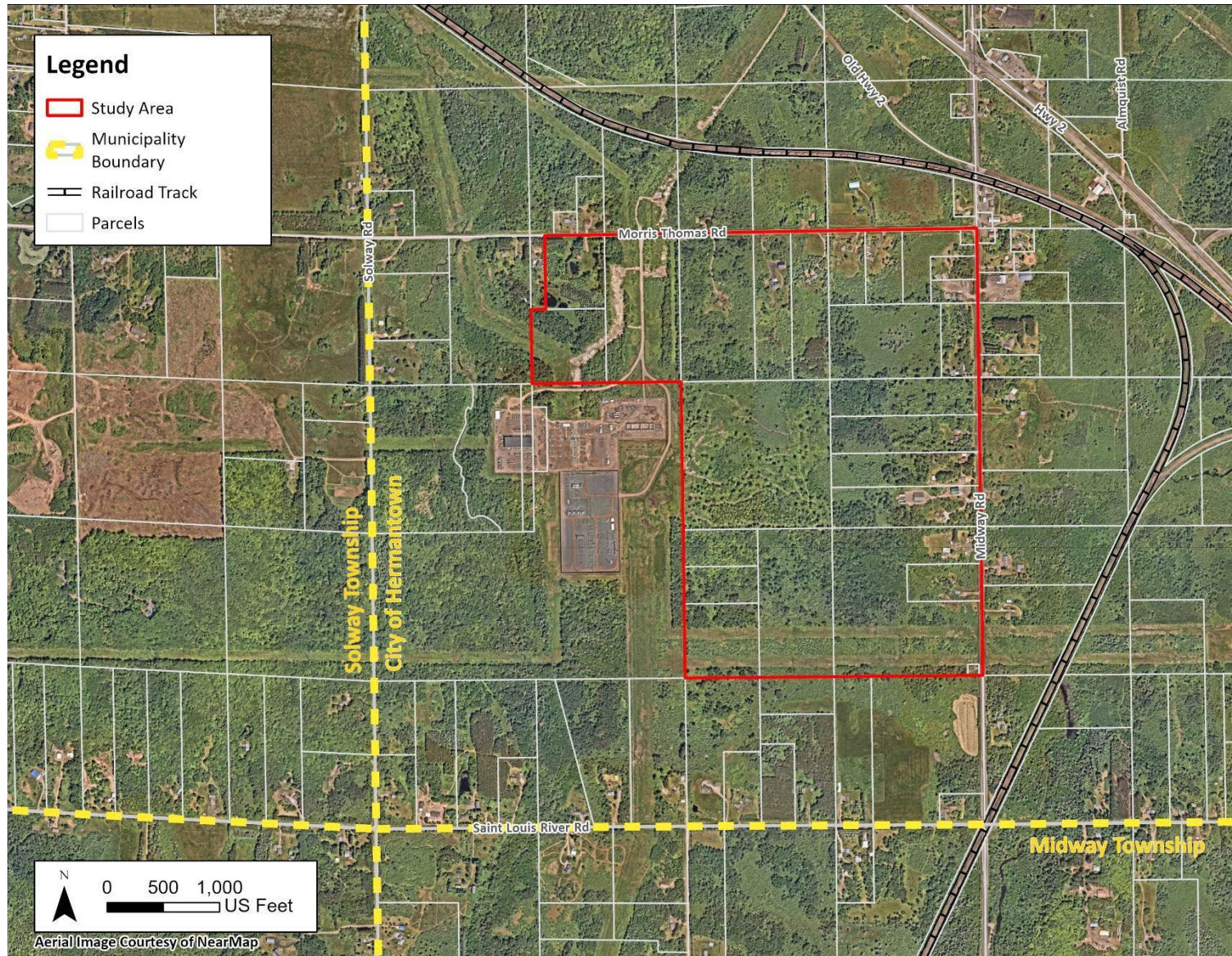
Study Area

0 1,000 2,000 US Feet

Topographic Map of the Adolph, Missouri Area

Copyright © 2013 National Geographic Society. All rights reserved.

**Figure 2: AUAR Study Area Boundary**



## 6. PROJECT DESCRIPTION

---

*AUAR Guidance: Instead of the information called for on the EAW form, the description section of an AUAR should include the following elements for each major development scenario included:*

- *Anticipated types and intensity (density) of residential and commercial/warehouse/light industrial development throughout the AUAR area.*
- *Infrastructure planned to serve development (roads, sewers, water, stormwater system, etc.). Roadways intended primarily to serve as adjoining land uses within an AUAR area are normally expected to be reviewed as part of an AUAR. More “arterial” types of roadways that would cross an AUAR area are an optional inclusion in the AUAR analysis; if they are included, a more intensive level of review, generally including an analysis of alternative routes, is necessary.*
- *Information about the anticipated staging of various developments, to the extent known, and of the infrastructure, and how the infrastructure staging will influence the development schedule.*

### Existing Site Conditions

The Study Area encompasses an area totaling approximately 278 acres on 26 parcels in the City of Hermantown, St. Louis County, Minnesota (shown on Figure 1 and Figure 2). Since the 2025 AUAR was published (see Item 4 for further explanation), an end user for the development has been identified and intends to own and operate a data center campus. With those additional design specifics, the Study Area boundary has been reduced by two parcels – removing the existing substation – which reduced the Study Area from 403 to 278 acres. The Study Area is bounded to the north by Morris Thomas Road, to the east by Midway Road, and to the west by Solway Road. The southern boundary of the Study Area extends parallel to Saint Louis River Road, approximately 0.25 miles to the north.

### Site Selection & Consideration of Alternative Sites

The Project Proposer uses a very rigorous process to select sites, which includes factors like proximity to customers and users, local talent, land, and availability of (or potential to bring new) carbon-free energy. Minnesota’s commitment to clean energy and availability of clean energy resources from Minnesota Power has made this an attractive site for development of a data center for the Project Proposer.

Within Minnesota, the Project Proposer evaluated several alternative sites for the Project. This Study Area was identified as the preferred site because it offers:

- Proximity to existing, reliable power infrastructure, including the Arrowhead Substation
- A cohesive land area within the City with the ability to extend municipal water and sewer service to the site
- The opportunity to minimize wetland and tree impacts compared with other sites in the area

- Favorable depth to bedrock
- Convenient access to existing County/State highways for ease of access for construction and operational vehicles and equipment

### **Proposed Development and Utilities**

This updated AUAR evaluates a data center campus within the Study Area that includes multiple buildings, constructed in distinct sequential phases, for a total of 1.8 million square feet of proposed data center buildings, warehouse, storage, and office space development (see Table 3).<sup>6</sup> For the purposes of evaluating the full buildout of the Study Area and “maximum build” scenario for environmental impacts, this AUAR studies in the subsequent sections up to four data center buildings (each one story tall), one warehouse, and two office buildings (see Figure 3).

Several utility pads are proposed for overhead electric line connections that would be located on the areas indicated on Figure 3 as substations. The areas labeled as equipment yards would house electrical and cooling equipment and could house backup generators; however, the specific number of equipment yard areas needed, as well as the number of backup generators and locations are uncertain and would be determined later as site design advances. Mechanical equipment may be shielded with individual enclosures or perimeter walls if acoustic or visual impacts require mitigation. Smaller generators for security entrances and fire pump engines may also be included in the final design. Additional environmental review may be required for backup generators, which would be completed with the Minnesota Pollution Control Agency (MPCA) or the Minnesota Public Utility Commission (MPUC or Commission) as the RGU depending on the amount of backup generation proposed.

The data center development would be supported by new roadways, parking areas, utilities, landscaping, stormwater, perimeter fencing, and other associated infrastructure; including private substations (one per building), transmission lines, and mechanical/electrical equipment.

New public infrastructure would be required for the development including upgrading or extending publicly owned City water service, sanitary sewer, stormwater management, streets, and other utilities extending from or upgrading existing publicly-owned systems to accommodate the new development. A new private driveway access will be needed on the northwest side of the Study Area from Morris Thomas Road. The private driveway would include a shared access with the parcels on the western half of the Study Area as well as a construction staging area for the development. No development is anticipated near the southern portions of the Study Area where the existing transmission lines are located.

### **Construction Activities and Timing**

Construction activities would include the construction of buildings, structures, access roadways, parking areas, and infrastructure improvements. Site preparation would include grading, excavation, and vegetation removal. A staging area for construction is planned to be located on the northwest

---

<sup>6</sup> A data center campus is a “Communication Service Facility” and requires a Special Use Permit in a Business and Light Manufacturing District. Hermantown Ord. 535.04.12

portion of the Study Area, in the location of the proposed private driveway. Preliminary construction work (i.e. tree clearing) is anticipated to begin as early 2027 followed by mass grading activities; however, this is dependent on permitting approvals. Types of earthwork equipment used would include scrapers, bulldozers, excavators, and motor graders. The campus would be constructed in distinct sequential phases, with the full master-planned campus anticipated to take more than 5 years to complete (see **Appendix A** for conceptual phasing plans). Construction on public utility extensions, including sanitary sewer and water, is anticipated to start as early as spring 2027 and would take approximately two years to complete. Actual construction start time is dependent on permitting approvals. See the list below for an estimate of construction durations, noise sources and traffic impacts for each phase. Note that full site preparation and grading would occur once at the start of construction, and concrete foundations, structure erection, and equipment deliveries would occur several times as each data center building and ancillary facility is built.

#### **Site Preparation (One Time)**

- Duration: 4-6 months
- Noise Sources: Tree removal and removal of existing structures within the Study Area.
- Maintenance: Water used to control dust. Full time street cleaning and sweeping. Controlled entry and exit zones to minimize street debris.
- Traffic Impacts: Logging trucks and dump truck traffic while removing demolition debris. Deliveries of large earthwork equipment during this time.

#### **Mass Grading Activities (One time)**

- Duration: 9-10 months
- Noise Sources: Large earth moving equipment
- Maintenance: Water would be used to control dust. The Project Proposer would monitor the city streets for sweeping any dirt/mud that may be near the entrance/exits of the site. This is localized to the adjacent streets to the Project site. Controlled entry and exit zones to minimize street debris.
- Traffic Impacts: Aggregate deliveries, large equipment confined to jobsite.

#### **Concrete Foundations**

- Duration: 12-16 months (for all phases)
- Noise Sources: Minimal
- Maintenance: Washout stations onsite. Project Proposer would monitor the city streets to keep clean, sweeping any dirt/mud that may be near the entrance/exits of the site. This is localized to the adjacent streets to the Project site.. Controlled entry and exit zones to minimize street debris.
- Traffic Impacts: Concrete mix trucks, with continuous traffic on pour days.

#### **Structure Erection**

- Duration: 10-14 months (for all phases)
- Noise Sources: Minimal

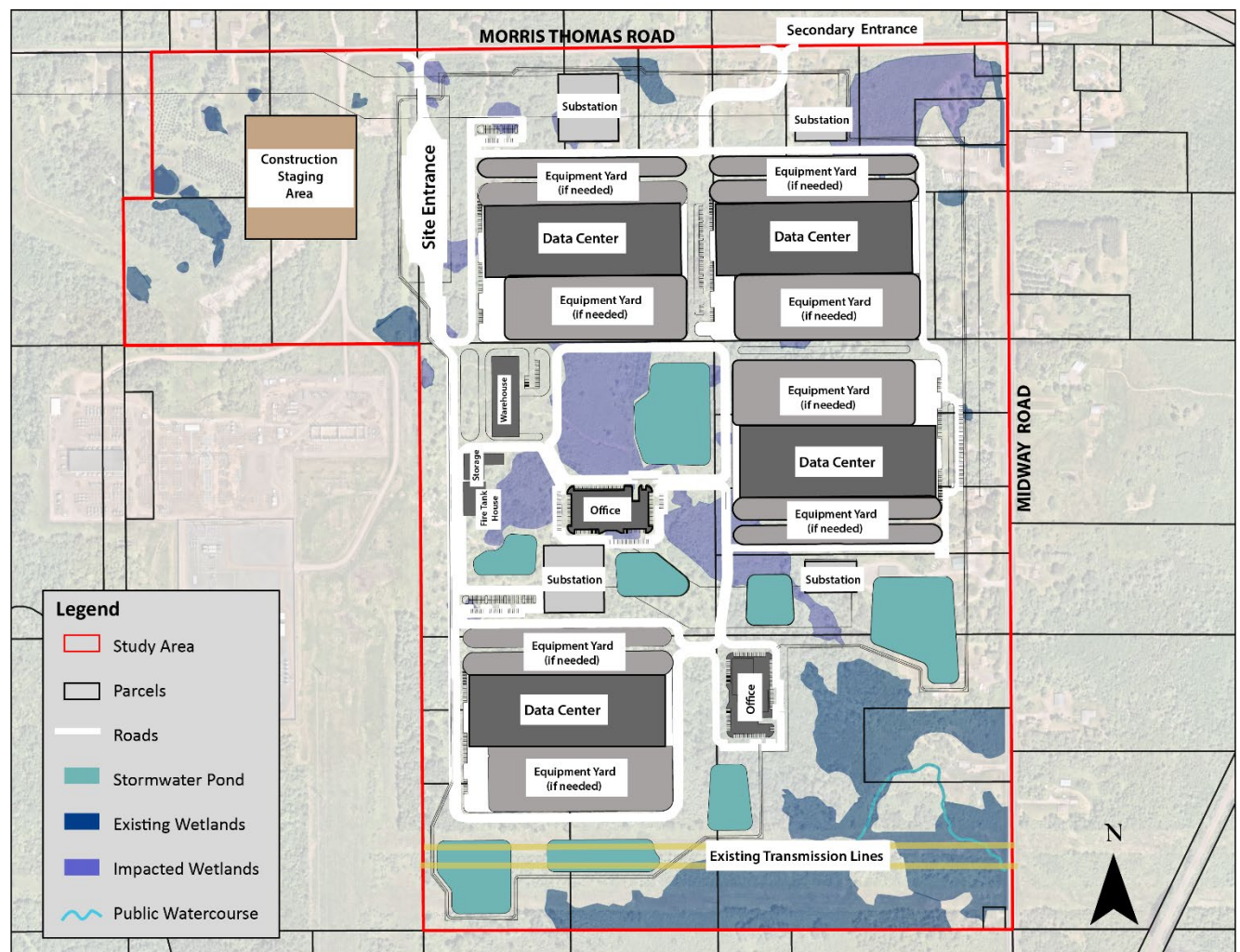
- Maintenance: Full time street cleaning and sweeping. Controlled entry and exit zones to minimize street debris.
- Traffic Impacts: Large precast panel and steel deliveries ongoing.

#### **Delivery and Installation of Permanent Equipment**

- Duration: 10-14 months (for all phases)
- Noise Sources: Minimal
- Maintenance: Full time street cleaning and sweeping. Controlled entry and exit zones to minimize street debris.
- Traffic Impacts: Semi truck deliveries of large pieces of equipment. Equipment removed and trucks leaving site.

**Table 3: Proposed Project**

| Component                              | Proposed Project |
|----------------------------------------|------------------|
| Industrial Building Area (square feet) | 1,800,000        |
| <b>Total Project Area (acres)</b>      | <b>278 acres</b> |

**Figure 3: Conceptual Proposed Project Site Layout**

### Future Permitting and/or Approvals

The proposed Project could include elements that may be subject to separate permitting and/or separate environmental review by other RGUs or federal agencies, depending on final design and applicable thresholds (e.g., certain utility scale transmission improvements, backup generation, fuel storage, battery energy storage, or other air permitted equipment - *See Minn. R. 4410.3610, subp. 1*). This updated AUAR identifies such elements to the extent reasonably known at the time of AUAR preparation, explains the basis for the AUAR's treatment of those elements (included, bounded, or addressed as cumulative effects), and describes how subsequent environmental review—if required—would incorporate the AUAR into the separate analysis and would evaluate the remaining elements with sufficient detail into the separate environmental review.

Two such elements that may be subject to separate permitting or environmental review are potential on-site energy storage systems and/or backup generators. The Project Proposer anticipates that some combination of battery energy storage and/or emergency backup generation may be required to support data center reliability (lighting and emergency power). At the time of

this AUAR, however, the type, number, capacity, location, operating profile, and fuel storage volumes for any battery energy storage or backup generation are not definitive and may vary based on final interconnection requirements, reliability standards, and equipment selection.

## 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.**

Trends in temperature, precipitation, flood risk, and cooling degree days are described below for the general Project location. Some of the climate projections summarized below use shared socioeconomic pathways (SSPs), which are greenhouse gas concentration scenarios used by the Intergovernmental Panel on Climate Change. The SSPs reflect assumptions about how industrialization, fossil fuel dependence, land use, and population density evolve in the future. The assumptions are based on population growth, urbanization, economic growth, technological advances, greenhouse gas and aerosol emissions, energy supply and demand, land-use changes, and more. SSP 245 is an intermediate scenario in which emissions decline after peaking around 2040, and SSP 370 is a high-emission scenario in which emissions continue to rise through the 21st Century.

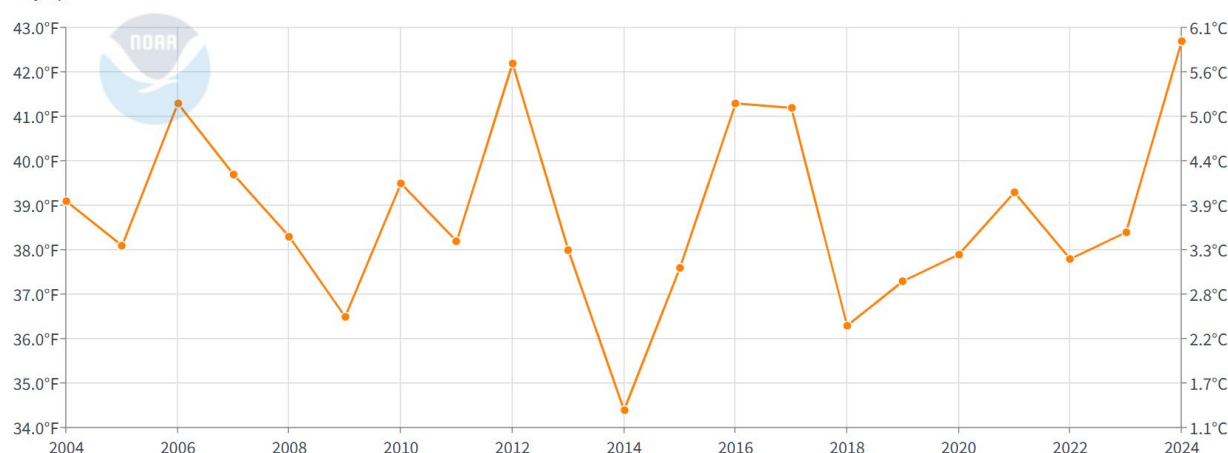
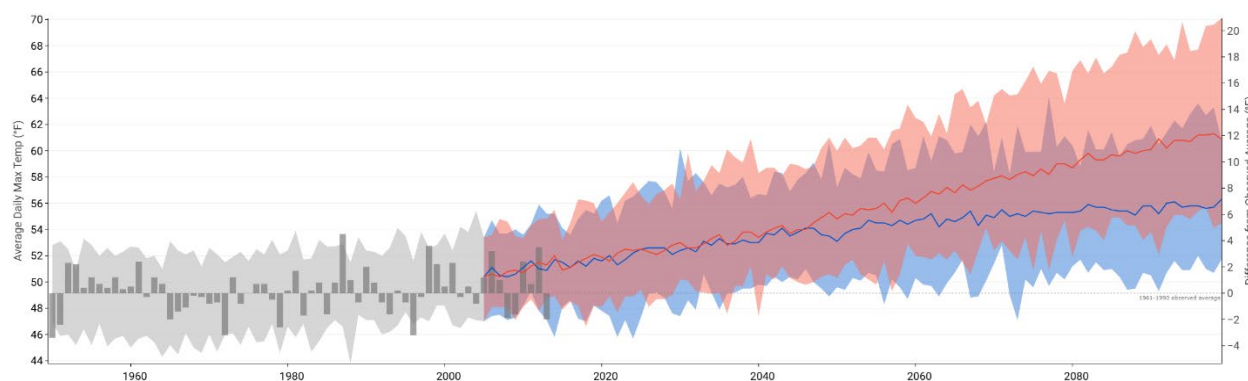
### Temperature

According to the National Centers for Environmental Information (NCEI), the historical average temperature in St. Louis County between 2004 and 2024 was approximately 38.8°F, with the lowest average in 2014 (34.4°F) and the highest average in 2024 (48°F).<sup>7</sup> According to the Minnesota Climate Mapping and Analysis Tool, the annual daily average temperature in the Study Area is projected to increase to 41.49°F from 2040 to 2059 under an intermediate emissions pathway (SSP 245). In 2080-2099, the annual daily average temperature is projected to further increase to 55.7°F and 57.8°F under an intermediate (SSP 245) and high emissions pathway (SSP 370), respectively.<sup>8</sup> See Figure 4 for past trends and Figure 5 for future projections.

---

<sup>7</sup> National Centers for Environmental Information, National Oceanic and Atmospheric Administration. *County Time Series*. Available at: <https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/county/time-series>.

<sup>8</sup> Minnesota CliMAT. University of Minnesota. Available at: [https://app.climate.umn.edu/?output\\_type=modelVal&scenario=ssp370\\_2080-2099&model=ensemble&variable=tmax-degF&time\\_frame=yearly&aoi=none#intro\\_pane](https://app.climate.umn.edu/?output_type=modelVal&scenario=ssp370_2080-2099&model=ensemble&variable=tmax-degF&time_frame=yearly&aoi=none#intro_pane)

**Figure 4: NCEI County Time Series - Average Temperature in St. Louis County**
**St. Louis County, Minnesota Average Temperature**  
 May-April
**Figure 5: National Environmental Modeling and Analysis Center (NEMAC) Average Daily Maximum Temperature<sup>9</sup>****Urban Heat Island**

An urban heat island occurs when a city experiences much warmer temperatures than nearby rural areas. The difference in temperature between urban and less-developed rural areas has to do with how well the surfaces in each environment absorb and hold heat. Urban heat island effects generally result from the replacement of vegetated land with buildings, pavement, and other impervious surfaces that absorb and re-radiate solar energy. According to the University of Minnesota's Heat Vulnerability Map Tool, the Study Area is located in an area of low heat vulnerability.<sup>10</sup> See Item 22 for more evaluation on this topic.

**Precipitation**

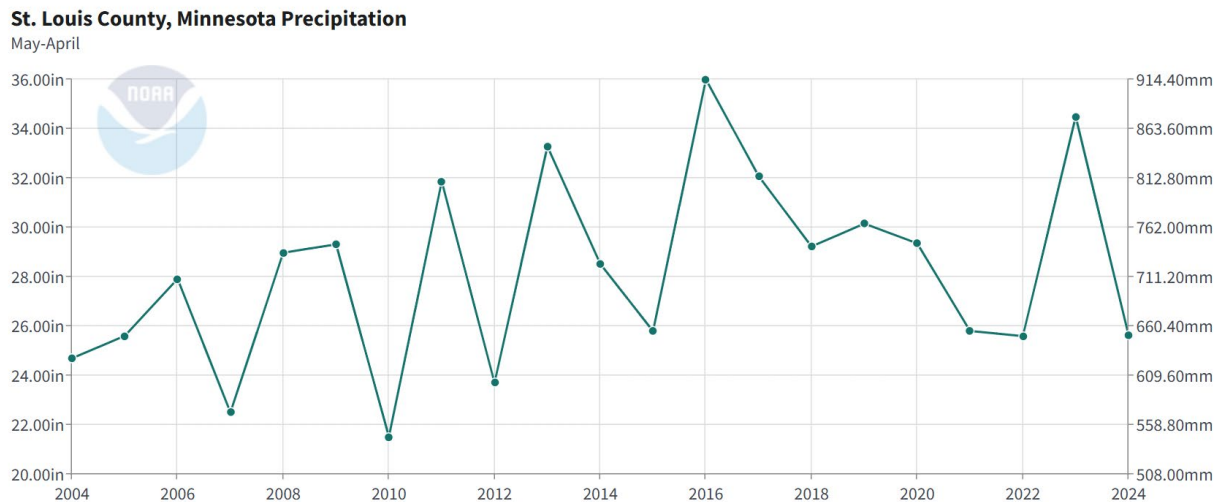
According to the NCEI, historic average annual precipitation in St. Louis County between 2004 and 2024 was approximately 28.2 inches, with the lowest average in 2010 (21.52 inches) and the

<sup>9</sup> Source: [National Environmental Modeling and Analysis Center \(NEMAC\)](#)

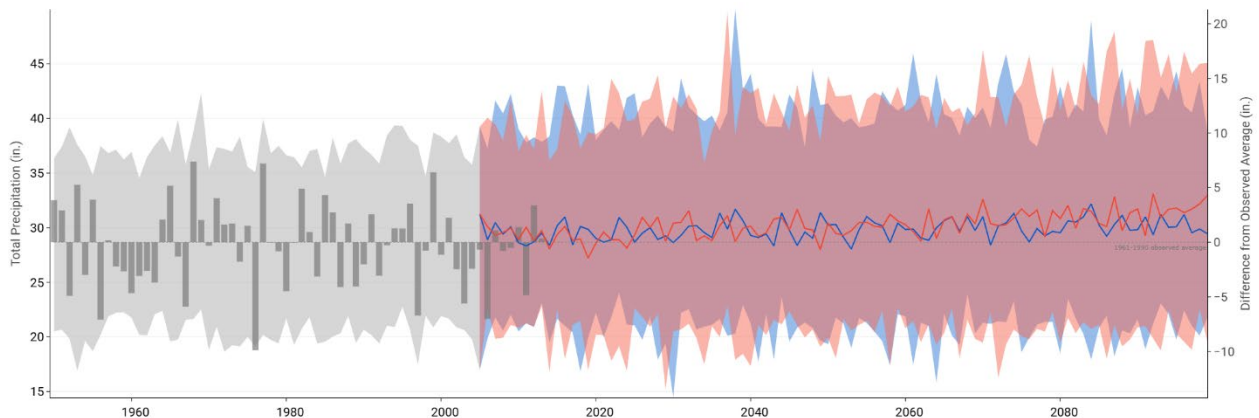
<sup>10</sup> Heat Vulnerability in Minnesota. University of Minnesota. Available at [https://maps.umn.edu/climatehealthtool/heat\\_app/](https://maps.umn.edu/climatehealthtool/heat_app/)

highest average in 2016 (36 inches). Average annual precipitation under an immediate emissions pathway (SSP 245) in St. Louis County from 2040-2059 is projected to be 33.2 inches. From 2080-2099, average annual precipitation is projected to be 33 inches under RCP 4.5 and 32.7 inches under an intermediate (SSP 245) and high emissions pathway (SSP 370), respectively (see Figure 6 for past trends and Figure 7 for future projections).

**Figure 6: NCEI County Time Series - Average Precipitation Trends in St. Louis County**



**Figure 7: National Environmental Modeling and Analysis Center (NEMAC) – Total Precipitation Trends in St. Louis County<sup>11</sup>**



<sup>11</sup> Source: [National Environmental Modeling and Analysis Center \(NEMAC\)](#)

### Flood Risk

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (panels 27137C3743E, effective on 3/25/2025 and 27137C3744E, effective on 3/25/2025), the entirety of the Study Area is currently located outside of the FEMA 100-year flood zones (see Figure 16). According to the Climate Mapping for Resilience & Adaptation tool,<sup>12</sup> the Study Area is not anticipated to experience flooding risk in the future (projected to the year 2064), with only 1 day expected annually that will result in precipitation that exceeds 99<sup>th</sup> percentile.

### Cooling Degree Days

As defined by the National Weather Service, cooling degree days, which are often used as a proxy to estimate cooling needs for buildings, can be examined as a baseline and projected exposure indicator under the RCP 4.5 and RCP 8.5 scenarios. RCP 4.5 reflects a future with proactive climate mitigation steps, whereas RCP 8.5 anticipates more extreme warming due to minimal action. Cooling degree days are indexed units, not actual days, which roughly describe the demand to heat or cool a building. Cooling degree days accumulate on days warmer than 65°F when cooling is required. For example, if a weather station recorded an average daily temperature of 78°F, cooling degree days for that station would be 13.

According to Heat Vulnerability in Minnesota,<sup>13</sup> the number of cooling degree days in 2019 for St. Louis County was 73. The projected number of cooling degree days in 2050 for St. Louis County is projected to be 142 and 214 for RCP 4.5 and RCP 8.5, respectively.

- b. For each resource category in the table below, describe the project's proposed activities and how the project's design will interact with those climate trends. Describe proposed adaptations to address the project effects identified.**

<sup>12</sup> Source: <https://resilience.climate.gov/#assessment-tool>

<sup>13</sup> Heat Vulnerability in Minnesota. Minnesota Department of Health and the University of Minnesota. Available at [https://maps.umn.edu/climatehealthtool/heat\\_app/](https://maps.umn.edu/climatehealthtool/heat_app/).

**Table 4: Interaction of Proposed Activities with Each Climate Trend and Projection Listed in 7a**

| Resource Category     | Climate Trends and Climate Projections                                                                                                                                                    | Project Components                                                | Potential Environmental Effects                                                                                                                                                                                                                                                                                                                                                 | Adaptation Strategies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Project Design</b> | In the coming decades, the location of the Study Area is anticipated to experience increased annual temperatures, increased annual precipitation and more frequent heavy rainfall events. | Development of the Study Area would increase impervious surfaces. | <p>Aspects of building architecture/materials choices and site design may impact urban heat island conditions in the surrounding area, including changing climate zones, temperature trends, and potential for extended heat waves.</p> <p>Impervious surfaces can influence changes to stormwater runoff volumes, temperatures, and rates and reduce groundwater recharge.</p> | <p>Energy efficient appliances, equipment and lighting would be incorporated into building design.</p> <p>The Project Proposer would use building construction materials that maintain indoor temperatures and/or are resilient to increasing temperatures during high heat conditions. This could include consideration of using more concrete over bituminous in an effort to reduce heated stormwater runoff; however, stormwater would be treated for thermal loading regardless.</p> <p>The landscaping plan would include overstory trees and vegetation to increase shade and reduce runoff and</p> |

| Resource Category | Climate Trends and Climate Projections | Project Components | Potential Environmental Effects | Adaptation Strategies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------|----------------------------------------|--------------------|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   |                                        |                    |                                 | <p>mitigate heat island effect.</p> <p>Water-efficient design would be incorporated for landscape vegetation choices, landscape irrigation, appliances, and equipment.</p> <p>Alternative pavement surfaces and materials that are more heat-resistant to reduce heat impacts and surface temperatures would be evaluated.</p> <p>The Project Proposer would regularly monitor the condition of access roads and internal roadways and conduct maintenance to address wear and tear from high temperatures and heatwaves.</p> <p>The Project Proposer would use cooling technologies (such as reflective coating; high-</p> |



| Resource Category | Climate Trends and Climate Projections | Project Components | Potential Environmental Effects | Adaptation Strategies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------------|----------------------------------------|--------------------|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   |                                        |                    |                                 | <p>reflectivity hardscape; decrease impervious surfaces and/or install permeable surfaces; incorporate green infrastructure; maintain and/or expand urban tree canopy) to reduce surface temperatures during periods of high temperatures and/or heatwaves.</p> <p>The Project Proposer would use building construction materials that maintain indoor temperatures and/or are resilient to increasing temperatures during high heat conditions and heatwaves.</p> <p>Design electrical systems to handle increased cooling demand, especially from extreme heat events.</p> <p>Design the campus to include cooling systems for critical infrastructure</p> |

| Resource Category                                       | Climate Trends and Climate Projections                                                                                   | Project Components                                                                                      | Potential Environmental Effects                                                                                                                                                                                                                                                                                                                                                               | Adaptation Strategies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                         |                                                                                                                          |                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                               | <p>or equipment sensitive to overheating during periods of high temperatures and/or heatwaves.</p> <p>For a full list of climate adaptations, see <b>Appendix H.</b></p>                                                                                                                                                                                                                                                                                                                                                                |
| <b>Land Use</b><br><i>(See Item 10 for more detail)</i> | <p>In the coming decades, the location of the Study Area is anticipated to experience increased annual temperatures.</p> | <p>Development of the Study Area would convert land use from residential/vacant to industrial uses.</p> | <p>Land use change would increase impervious surfaces within the Study Area.</p> <p>Reduction of tree cover may lead to more intense stormwater runoff, increased urban heat island effect, loss of shade for protection during extreme heat, and potential reduction in air quality.</p> <p>The Project may result in wetland impacts. Wetlands can hold carbon in soils and vegetation.</p> | <p>Design of the site and stormwater management facilities would be completed to control detention for the 2-year, 10-year, and 100-year, 24-hour rainfall events in the AUAR Study Area. Filtration areas would be used to improve water quality and reduce stormwater runoff in the Project vicinity.</p> <p>The Project Proposer would minimize wetland impacts to the extent practicable by locating Project facilities outside of delineated wetlands, and comply with wetland mitigation requirements through the purchase of</p> |

| Resource Category                                                                                 | Climate Trends and Climate Projections                                                                                                                                                                                                                                                                                                                                                                                                  | Project Components                                                                                             | Potential Environmental Effects                                                                                              | Adaptation Strategies                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                |                                                                                                                              | wetland banking credits and performing a comprehensive MN Wetland Conservation Act (WCA) Sequencing Analysis.                                                                                                                                                                                                                                                                                                                             |
| <b>Water Resources</b><br><i>(See Item 12 for more detail)</i>                                    | <p>Current Minnesota climate trends and anticipated climate change in the general location of the Project may influence water resources such as extreme storm events, drought, groundwater depletion.</p> <p>It is projected that there will be more severe storm events with high, intense rain amounts, which will require drainage systems to be adequately maintained to accommodate for the increase in water volume and rate.</p> | <p>Development of the Study Area may impact water resources. See more information in Item 12.</p>              | <p>The Project would result in an increase in water runoff and impervious surfaces.</p>                                      | <p>Project Proposer would use native plants and perennials for landscaping, and place adjacent to stormwater features to absorb water therefore reducing the water demand for irrigation and provide water resource buffers.</p> <p>Stormwater best management practices (BMPs) shall be designed to meet City of Hermantown criteria for rate control and runoff volume reduction, and criteria for MPCA water quality requirements.</p> |
| <b>Contamination/<br/>Hazardous Materials/<br/>Wastes</b><br><i>(See Item 13 for more detail)</i> | <p>Current Minnesota climate trends and anticipated climate change in the general location of the Project may influence the</p>                                                                                                                                                                                                                                                                                                         | <p>The proposed development is not anticipated to generate hazardous waste or materials during operations.</p> | <p>Data center use may require storage of hazardous materials and wastes for backup generators. If not managed properly,</p> | <p>No hazardous materials or waste would be stored in floodplain areas because no floodplain areas are located within the Study Area.</p>                                                                                                                                                                                                                                                                                                 |

| Resource Category                                                                                                                    | Climate Trends and Climate Projections                                                                                                                       | Project Components                                                                     | Potential Environmental Effects                                                                                          | Adaptation Strategies                                                                                                                                                                                                                                                                          |
|--------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                      | potential environmental effects of the generation/use/storage of hazardous waste and materials.                                                              |                                                                                        | leaks/spills could result in hazardous substances to enter soils, groundwater, surface water, and air.                   | <p>Project Proposer would ensure hazardous materials are stored in temperature-controlled environments to accommodate for high temperatures and heatwaves.</p> <p>Construction and operational waste would be stored and handled in compliance with local, state and federal requirements.</p> |
| <b>Fish, Wildlife, Plant Communities, and Sensitive Ecological Resources (Rare Features)</b><br><i>(See Item 14 for more detail)</i> | Current Minnesota climate trends and anticipated climate change in the general location of the Project may influence the local species and suitable habitat. | Development of the Study Area would change land use cover and availability of habitat. | Suitable habitat for species may become unsuitable due to land use changes, increased temperature, and increased runoff. | <p>Climate-appropriate native plantings and stormwater BMPs would provide suitable habitat for small mammals, insects, and bird species.</p> <p>The Project Proposer would retain mature trees as part of design and during construction.</p>                                                  |

## 8. COVER TYPES

*AUAR Guidance: The following information should be provided:*

- *A cover type map, at least at the scale of a USGS topographic map, depicting:*
  - *Wetlands (identified by Circular 39 type)*
  - *Watercourses (rivers, streams, creeks, ditches)*
  - *Lakes (identify public waters status and shoreland management classification)*
  - *Woodlands (break down by classes where possible)*
  - *Grassland (identify native and old field)*
  - *Cropland*
  - *Current development*
- *An overlay map showing anticipated development in relation to the cover types. This map should also depict any “protection areas,” existing or proposed, that will preserve sensitive cover types. Separate maps for each major development scenario should be generally provided.*

The AUAR Study Area is comprised of approximately 278 acres of woodland, wetland, grassland, and impervious surfaces. There are several structures currently within the Study Area. The majority of the AUAR Study Area has been altered from pre-development conditions to support utility and rural residential development patterns occurring within the adjacent and surrounding area. These existing cover types were determined by reviewing recent aerial photography (see Table 5 and Figure 8). Proposed cover types are shown in Table 5 and Figure 9, and depicts the “maximum build” conditions for potential environmental impacts. The proposed Project cover types of woodland, grassland/landscaping, and wetlands are subject to change (equal to or greater acreage) based on individual development.

**Table 5: Existing and Proposed Cover Types**

| Cover Type                                    | Existing (Acres) <sup>14</sup> | Proposed Project (Acres) |
|-----------------------------------------------|--------------------------------|--------------------------|
| Woodland                                      | 132                            | 37                       |
| Grassland/Landscaping                         | 77                             | 74                       |
| Wetlands                                      | 58                             | 26                       |
| Impervious Surface                            | 11                             | 126                      |
| Stormwater/Green Infrastructure (see Table 6) | 0                              | 15                       |
| <b>Total</b>                                  | <b>278</b>                     | <b>278</b>               |

The proposed Project would increase the total acres of impervious surface in the Study Area, and decrease the acreage of wetlands and woodlands. Grass/landscaping acreage would remain

<sup>14</sup> Acreage reduced from Final Scoping document due to recent tree survey that provided refined totals for existing areas of woodland and grassland/landscaping.

approximately equal before and after development. The Project Proposer proposes to include stormwater systems and green infrastructure systems within the Study Area.

Green infrastructure systems proposed include stormwater filtration basins, filtration trenches, rainwater gardens, bioretention areas without underdrains, and vegetated swales with impermeable check dams. Table 5 lists the before and after acreages for these systems. The Project Proposer would use native plants in landscape design and would maintain existing post-construction wetland complexes to the greatest extent feasible.

The “maximum build” conditions for potential wetland impacts are shown on Figure 22 and the proposer would be required to comply with all federal, state, and local wetland requirements for permitting and replacement of the wetlands impacted directly or indirectly by the development of the Study Area (see Item 12 Water Resources for more information).

The site design would prioritize the preservation of substantial natural buffers along the North, East, and South perimeters to maintain a visual screen and protect the surrounding area’s natural character. By utilizing these existing trees and adhering to all regulatory standards including those for landscaping/screening, noise, stormwater, and wetland management, the proposed development intends to remain in alignment with the local landscape.

**Table 6: Green Infrastructure**

| Green Infrastructure                                                                                                                                                                           | Before (acres) | Proposed Project (acres) |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|--------------------------|
| Constructed filtration Systems (filtration basins, filtration trenches, rainwater gardens, bioretention areas without underdrains, vegetated swales with impermeable check dams) <sup>15</sup> | 0              | 15                       |
| <b>Total</b>                                                                                                                                                                                   | <b>0</b>       | <b>15</b>                |

**Table 7: Trees**

| Trees                                                    | Number |
|----------------------------------------------------------|--------|
| Number of Trees Removed During Development <sup>16</sup> | 10,783 |
| Number of New Trees Planted <sup>17</sup>                | 245    |

<sup>15</sup> Based on preliminary stormwater requirement calculations based on estimated impervious surface area.

<sup>16</sup> Determined based on a tree survey completed for the Study Area.

<sup>17</sup> Exact number to be determined as design plans advance. Higher quality trees will be preserved to the extent practicable as site design advances. The Project Proposer will not include ash trees in landscape plans, to prevent the spread of the invasive insect emerald ash borer.

**Figure 8: Existing Cover Types**

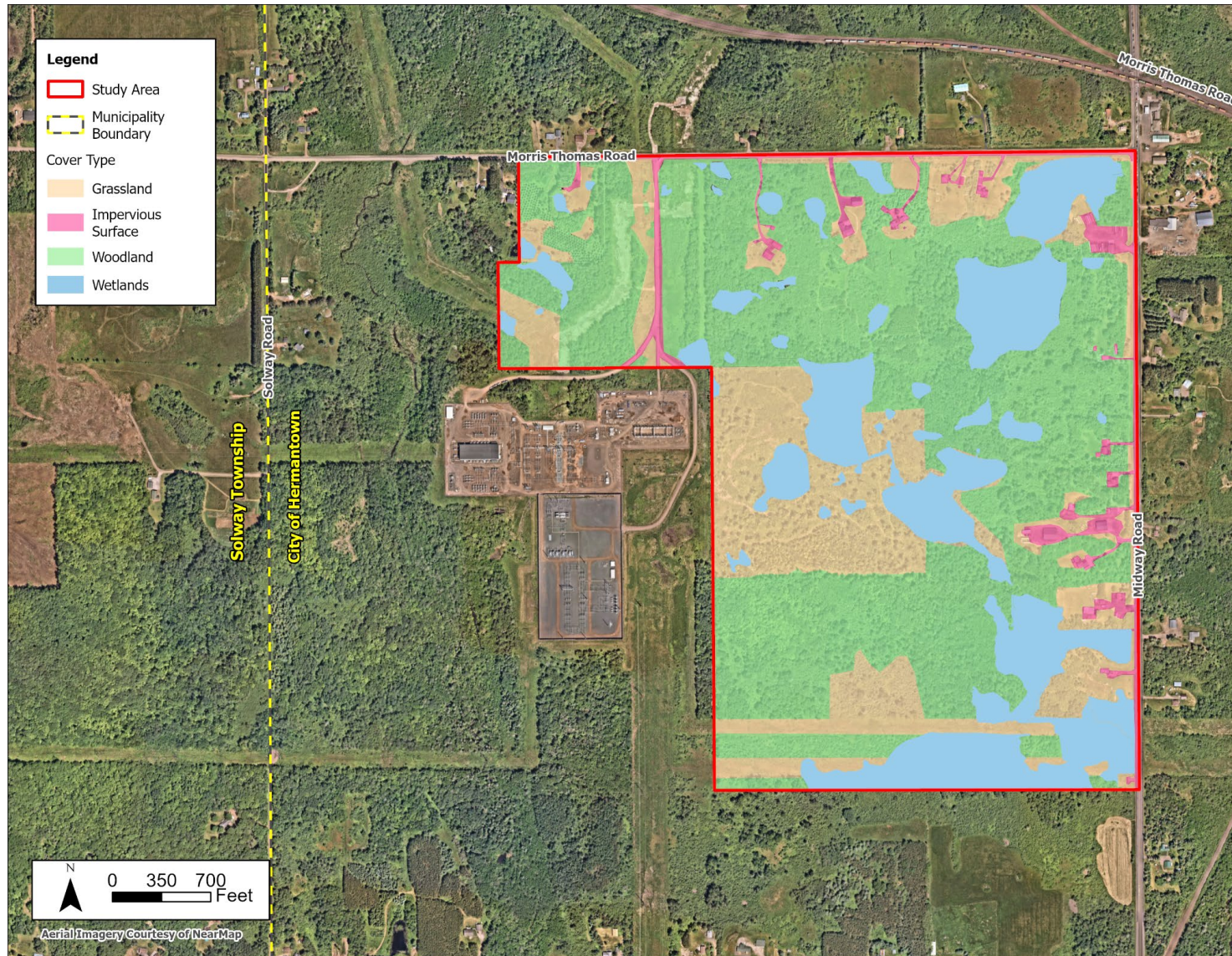
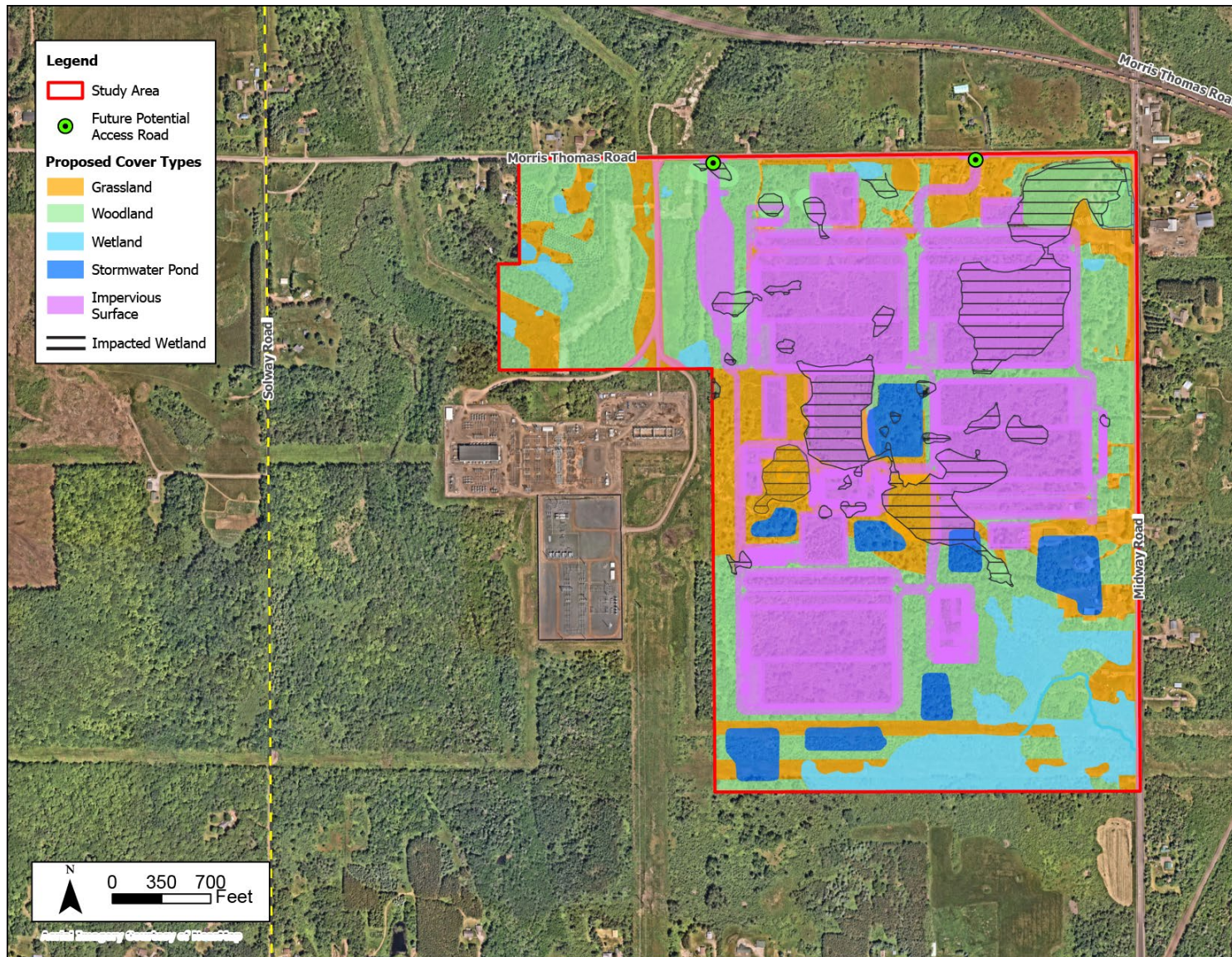


Figure 9: Proposed Cover Types



## 9. PERMITS AND APPROVALS REQUIRED

*AUAR Guidance: A listing of major approvals (including any comprehensive plan amendments and zoning amendments) and public financial assistance and infrastructure likely to be required by the anticipated types of development projects should be given for each major development scenario. This list will help orient reviewers to the framework that will protect environmental resources. The list can also serve as a starting point for the development of the implementation aspects of the mitigation plan to be developed as part of the AUAR.*

**Approvals and Decisions Intended to be Supported by the AUAR.** Environmental review is required before a government action with the potential for significant environmental effects to understand the impact a proposed project may have on the environment. The updated AUAR fulfills the City of Hermantown's obligation to complete environmental review before any City approvals that would implement the proposed Project, including: a Preliminary and a Final Plat, Commercial Industrial Development Permit, Special Use Permit, Land Alteration Permit, WCA Permit, and Building Permit (see Table 8). The updated AUAR identifies the specific City and other agency approvals that may be required for the proposed Project in Table 8. The updated mitigation plan also explains how mitigation measures would be implemented and enforced through those approvals in the Mitigation Plan section (see Table 28).

**Table 8: Anticipated Permits and Approvals<sup>18</sup>**

| Unit of Government                           | Type of Application                                             | Status                           |
|----------------------------------------------|-----------------------------------------------------------------|----------------------------------|
| <b>Federal</b>                               |                                                                 |                                  |
| U.S. Army Corps of Engineers (USACE)         | Section 404 Permit                                              | To be applied for, if applicable |
| U.S. Fish & Wildlife Service (USFWS)         | Section 7 Endangered Species Act Consultation                   | To be applied for, if applicable |
| <b>State</b>                                 |                                                                 |                                  |
| Minnesota Public Utilities Commission (MPUC) | Certificate of Need                                             | To be applied for, if applicable |
|                                              | Site Permit                                                     | To be applied for, if applicable |
| MPCA                                         | Section 401 Water Quality Certification                         | To be applied for, if applicable |
|                                              | Construction Contingency Plan and Response Action Plan approval | To be completed, if applicable   |
|                                              | Notice of Intent of Demolition                                  | To be applied for                |

<sup>18</sup> Additional environmental review may be necessary should potential improvements and supporting infrastructure for the proposed Project exceed mandatory environmental thresholds. In addition to the permits and approvals listed in Table 6 that are the responsibility of either the city or the Project Proposer, the local utility company will design and obtain site or route permit and approvals needed for any potential grid infrastructure projects that may be required through the City of Hermantown or the MPUC.

| Unit of Government                               | Type of Application                                                    | Status                           |
|--------------------------------------------------|------------------------------------------------------------------------|----------------------------------|
|                                                  | Industrial Wastewater Permit                                           | To be applied for, if applicable |
|                                                  | Construction Stormwater General Permit                                 | To be applied for                |
|                                                  | Fuel Storage Tank                                                      | To be applied for, if applicable |
|                                                  | Air Permit                                                             | To be applied for, if applicable |
|                                                  | Wastewater Discharge Permit                                            | To be applied for, if applicable |
| Minnesota Department of Natural Resources (MDNR) | Temporary Water Appropriation Permit for Construction Dewatering       | To be applied for, if applicable |
| Minnesota Department of Health (MDH)             | Notification of Intent to Perform a Demolition                         | To be applied for                |
|                                                  | Notification of Asbestos Related Work                                  | To be applied for, if applicable |
|                                                  | Well and Boring Sealing Record                                         | To be applied for                |
| Minnesota Department of Labor                    | Industrial plumbing review and electrical permit                       | To be applied for                |
| Minnesota Department of Transportation (MnDOT)   | Right-of-Way Permit                                                    | To be applied for, if applicable |
|                                                  | Utility Permit                                                         | To be applied for, if applicable |
| <b>County</b>                                    |                                                                        |                                  |
| St. Louis County                                 | Street and Utility Permits                                             | To be applied for, if applicable |
|                                                  | Right-of-Way Permit                                                    | To be applied for, if applicable |
| <b>City</b>                                      |                                                                        |                                  |
| City of Hermantown                               | Preliminary/Final Plat                                                 | To be applied for                |
|                                                  | Land Alteration Permit                                                 | To be applied for                |
|                                                  | Sign Permit                                                            | To be applied for                |
|                                                  | Building Permit                                                        | To be applied for                |
|                                                  | Erosion Control, Grading, and Stormwater Permit                        | To be applied for                |
|                                                  | Right-of-Way Temporary Access Permit                                   | To be applied for, if applicable |
|                                                  | WCA (Boundary & Type, Exemption, Replacement Plan) Review and Approval | To be applied for                |
|                                                  | Wetland Buffer Zone Management Plan approval                           | To be applied for                |

| Unit of Government | Type of Application                      | Status                           |
|--------------------|------------------------------------------|----------------------------------|
|                    | Zoning Map Amendment                     | To be applied for                |
|                    | Demolition Permit                        | To be applied for, if applicable |
|                    | Sewer Connection Permit                  | To be applied for                |
|                    | Stormwater Certificate                   | To be applied for                |
|                    | Water Connection Permit                  | To be applied for                |
|                    | Commercial Industrial Development Permit | To be applied for                |
|                    | Special Use Permit                       | To be applied for                |

**Approvals Not Supported / Other RGUs.** Certain permits or approvals may be issued by other state or federal agencies and may require additional environmental review depending on final design and applicable thresholds. For this proposed Project, these could include:

- Air Permit and/or Site Permit - An air permit and/or Site Permit, including additional environmental review may be required for backup generators, which would be completed with MPCA or the MPUC as the RGU. The trigger for this is described in Minn. Rules 4410.4100 and 4410.4300, subps. 3 and 15. This process would include a public review and comment period as part of the environmental review.
- Transmission Line Approvals - New transmission lines from the existing Arrowhead Substation to the proposed data center campus would also need their own environmental review and siting permit process led by Minnesota Power, with the City of Hermantown or MPUC as the RGU.
- Large Fuel Storage – If more than 1,000,000 gallons of fuel storage are added for emergency backup generators then additional environmental review may be required with the MPCA as the RGU. The trigger for this is described in Minn. Rules 4410.4300 Subp. 10(b). This process would include a public review and comment period as part of the environmental review.

This updated AUAR does not cover impacts and mitigation associated with these possible future reviews or approvals, because the need for these reviews and approvals is currently uncertain, and these types of projects are outside of the scope of an AUAR. If air permit, site permit, transmission line, or large fuel storage approvals are needed, the Project Proposer would seek approval from the appropriate agency, and environmental review would be led by other state agencies or the local governments, as applicable. If the Project Proposer, Responsible Government Unit or permitting authority determines that additional reviews or approvals are required, for these reasons or any other reasons, the Project Proposer must complete these additional steps prior to construction.

**Public Finance Assistance.** The Project Proposer has applied for public financial assistance in accordance with the City of Hermantown's adopted Business Subsidy Policy. The City is conducting a

financial analysis to determine the viability of providing potential tax abatement. City approvals for public financial assistance and the corresponding development obligations would be implemented and enforced by a Development Agreement and a Tax Abatement Agreement.

Information about the proposed development agreement and tax abatement agreement can be found at the following links:

<https://hermantownmn.com/wp-content/uploads/2026/05/Loon-Abatement-Mechanics-Presentation-May-4.pdf>

<https://hermantownmn.com/wp-content/uploads/2026/04/Updated-Abatement-Agreement-Data-Center.pdf>

Today, the land uses in the Study Area generate approximately \$80,000 per year in city, county, and school district tax revenue. The Project would bring significantly higher, long-term tax revenue. Though not finalized, the amount the Project Proposer is anticipated to pay in annual property taxes if the proposed Project is fully built and operational is estimated to be more than 50 times the current annual tax revenues. All future taxes will be subject to assessments conducted by the St. Louis County Assessor.

#### **Approvals Required for Public Utility Extensions**

The updated AUAR describes in Item 12 Water Resources the anticipated public infrastructure improvements associated with the proposed Project (water and sewer extensions). The public actions and permits related to those improvements include:

- MDH Permit for the watermain extension
- MPCA Sanitary Sewer Extension Permit for the sanitary sewer extension
- Canadian National Railway/Wisconsin Central Limited Utility Crossing/Encroachment Permit
- If needed based on final design:
  - WCA (Boundary & Type, Exemption, Replacement Plan) Review and Approval from the City of Hermantown
  - U.S. Army Corps of Engineers (USACE) approval
  - Stream crossing permit(s) from the MDNR

This infrastructure expansion would benefit the surrounding community and support growth in a portion of the City and County that has been planned for future development. There would not be any public utility assessment levied against private property owners for the installation of the new utilities. Installation of the public utility improvements would be financed by the Project Proposer. The public utilities would be turned over to the City upon Project completion. The infrastructure would then be a publicly owned asset to be maintained and managed by the City in accordance with ordinance and policy.

## 10. LAND USE

### a. Describe:

#### i. Existing land use of the site as well as areas adjacent to and near the site, including parks, trails, and prime or unique farmlands.

Land use is the characterization of land based on what can be built on it and how the land is used. Land cover documents how much of a region is covered by forests, wetlands, impervious surfaces, agriculture, and other land and water types, including wetlands.

The AUAR Study Area is located in a semi-rural area in the southwest corner of the City of Hermantown, Minnesota. The Study Area consists of 26 existing parcels and consists of a mix of industrial, transitional, and residential land uses. According to the City's existing land use map<sup>19</sup>, the majority of the Study Area land uses are currently vacant, utility, and single-family residential (see Figure 10). An electrical substation is located directly west of the Study Area and associated above-ground transmission lines run along Morris Thomas Road, Midway Road, the western boundary of the site, bisecting the Study Area from east to west through the south portion of the site. Existing land uses adjacent to the Study Area also include agricultural land to the east and south, and residential land to the east, south, and north. There are 18 residences immediately adjacent to the Study Area.

There are no existing parks or trails within or adjacent to the Study Area. According to the Natural Resources Conservation Service (NRCS), 62.4 percent of the Study Area is considered farmland of statewide importance (see Table 10); however, there are no active or fallow farmland uses within the Study Area.

Land cover of the Study Area is summarized in Table 5 and shown on Figure 8.

#### ii. Planned land use as identified in comprehensive plans (if available) and any other applicable plan for land use, water, or resource management by a local, regional, state, or federal agency.

##### *Hermantown 2045 Comprehensive Plan*

The Hermantown 2045 Comprehensive Plan is used to guide the City's housing, transportation, community facilities, parks, and land use planning over the next 20 years. The 2045 Comprehensive Plan describes the City of Hermantown's current development character as "dominated by residential areas, a mix of rural and suburban residential patterns, and a regional commercial corridor along Hwy 53 and Haines Road." Vacant land represents a significant portion of the City of Hermantown, at 21 percent. The City of Hermantown has two corridors with commercial land uses, one

<sup>19</sup> Source: [https://hermantownmn.com/wp-content/uploads/2025/03/Hermantown-Comprehensive-Plan-Update\\_20250305\\_reduced.pdf](https://hermantownmn.com/wp-content/uploads/2025/03/Hermantown-Comprehensive-Plan-Update_20250305_reduced.pdf)

along Miller Trunk Highway and Haines Road, and a secondary commercial/industrial corridor follows Highway 2 and Midway Road in southwest Hermantown, near the Study Area.

According to this plan, the Study Area is designated as Business and Light Manufacturing (BLM)<sup>20</sup> (see Figure 12 and Table 9).

**Table 9: Hermantown 2045 Comprehensive Plan designations within the AUAR Study Area**

| Future Land Use Designation      | Purpose                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Business and Light Manufacturing | Land guided for the integration of commercial and industrial land uses which are compatible with each other, including office, light industrial, and retail/service uses. The intent of this land use category is to provide additional flexibility that supports the creation of significant employment centers, generally characterized by a broader diversity of jobs, higher development densities and jobs per acre, higher quality site and architectural design, and increased tax revenues. |

#### *St. Louis River Comprehensive Watershed Management Plan*

The St. Louis River Comprehensive Watershed Management Plan<sup>21</sup> is used to guide and prioritize projects that would protect the watershed's natural resources and solve water quality issues. The watershed is split into five sub-planning areas, with the Study Area being part of the Duluth Urban Area and Lake Superior Streams. The primary concerns for the area are high-quality resource protection and restoration. The relevant topics covered in the plan relate to concerns around urban expansion and impervious surface increase that comes with development and increased pollutant loading via stormwater, altered hydrology, and species habitat.

The proposed development would need to demonstrate compliance with these above listed goals from the Plan via:

- Advanced stormwater best management practices
- Rate/volume control to protect downstream trout streams
- Careful handling of chemical storage and deicing/salt use
- Preserve habitat connectivity where possible

The proposed pre-and post-construction stormwater management proposed would comply with the Plan's goals as well as the City of Hermantown and MPCA's stormwater regulations and requirements. For more information on stormwater plans see Item 12 Water Resources and **Appendix C**.

<sup>20</sup> Source: [https://hermantownmn.com/wp-content/uploads/2025/03/Hermantown-Comprehensive-Plan-Update\\_20250305\\_reduced.pdf](https://hermantownmn.com/wp-content/uploads/2025/03/Hermantown-Comprehensive-Plan-Update_20250305_reduced.pdf)

<sup>21</sup> Source: [https://www.nslswcd.org/wp-content/uploads/2025/02/A\\_StLouis-Comprehensive-Watershed-Management-Plan-Final-11032022.pdf](https://www.nslswcd.org/wp-content/uploads/2025/02/A_StLouis-Comprehensive-Watershed-Management-Plan-Final-11032022.pdf)

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

*AUAR Guidance: Water-related land use management districts should be delineated on appropriate maps, and the land use restrictions applicable in those districts should be described. If any variances or deviations from these restrictions within the AUAR area are envisioned, this should be discussed.*

Zoning is a regulatory tool used by local governments (cities, counties, and some townships) to guide specific land uses within specific geographic areas. A community's zoning ordinance is the principal legal tool available for the implementation of its comprehensive plan and the definition of the community's land use policies. The City of Hermantown is the zoning authority responsible for the Study Area.

*Existing Zoning*

The Study Area parcels are zoned as Business and Light Manufacturing (BLM), as shown on Figure 11. The BLM zoning district is designed mainly for light industrial businesses including communication services, warehouses, distribution centers, and office warehouse buildings.<sup>22</sup>

"Communication services" is defined in the Hermantown City Code as businesses, facilities or establishments used primarily to house or operate networked computers, data and transaction processing and related support equipment used to provide digital storage, data and transaction processing services, including all related utility and ancillary facilities and services such as [backup] power generation and cooling equipment, office, administrative, and accessory uses involved in or related to any services or activities described in this category, including utility substations, whether taking place in the same or appurtenant buildings, utility facilities or structures.<sup>23</sup>

The parcels surrounding the Study Area are a mix of BLM and Rural Residential (S-1) as shown on Figure 11. The S-1 zoning district is intended to provide suitable areas within the community for one and two family residential dwellings.

The proposed data center use would be considered as communication services under the Hermantown Zoning Code and would require a special use permit to be approved by the City.

Under Hermantown Zoning Ordinances,<sup>24</sup> this Special Use Permit must include certain requirements for setback distances from structures, visual screening, hours of operation, and noise. Those requirements include the following:

<sup>22</sup>Source: <https://hermantownmn.com/government/city-ordinances/>

<sup>23</sup> Source: <https://hermantownmn.com/wp-content/uploads/2023/04/ZONING-CHAPTER-2-DEFINITIONS-1.pdf>

<sup>24</sup> Chapter 5 of the Hermantown Ordinances governs Land Use Regulations, and is available at [ZONING-CHAPTER-5-LAND-USE-REGULATIONS-1.pdf](#)

- 535.04.12.1 Dimensional standards: 50' setback for all structures, inclusive of incidental uses, from ROW and residential property lines
- 535.04.12.2 Operation. Communication service facilities may operate on a continual basis, 24 hours a day, 7 days a week provided there is perimeter landscaping and screening of the facility.
- 535.04.12.3 Perimeter Landscaping and Screening. Utility and related ancillary facilities such as backup generation and cooling equipment shall implement screening methods including earth berms, fencing, and landscaping (e.g., trees and shrubs), or other methods as may be approved by the Community Development Director.
- 535.04.12.4 Noise. Communication Service Facilities must develop one or more noise models to assure conformance of the facility during normal operations with applicable noise regulations. Mitigation strategies may consist of walls, buffers, acoustical dampening equipment, and other mitigation strategies as may be approved by the Community Development Director. Noise emanating from the temporary use of backup generators during periods of maintenance, or when otherwise necessary, is not required to be included in the noise model(s). Backup generator maintenance and testing shall be performed during the hours from 8:00 a.m. to 5:00 p.m., Monday-Friday. Noise models are to be reviewed and approved by the City of Hermantown.
- 535.04.12.5 Phased Development. An applicant for a Communication Service Facility may seek approval of a special use permit for one or more buildings/facilities as part of the same application with the submission of a phased master plan.
  - 535.04.12.5.1 Master Plan to include general locations of buildings, accessory uses, parking, stormwater facilities and screening.
  - 535.04.12.5.2 Master plan approval is valid for 10 years for the properties identified within the master plan. The Community Development Director may approve minor changes/variations to the master plan over the course of the approval period, provided the applicant satisfies the requirements of Section 535.04.12.

#### *FEMA National Flood Hazard*

According to the FEMA Flood Insurance Rate Map (panels 27137C3743E, effective on 3/25/2025 and 27137C3744E, effective on 3/25/2025), the entirety of the AUAR Study Area is located outside of the FEMA 100-year flood zones (see Figure 16). The floodplain mapped east of the Study Area generally aligns with the Midway River and the floodplain mapped to the west of the Study Area generally aligns with West Rocky Run Creek.

#### *Other Special Districts and Zoning Overlays*

There are no other special districts or zoning overlays within the AUAR Study Area.

- iv. **If any critical facilities (i.e., facilities necessary for public health and safety, those storing hazardous materials, or those 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.**

No critical facilities are proposed in floodplain areas. No hazardous materials are proposed to be stored in floodplain areas.

- 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 Guidance: The extent of conversion of existing farmlands anticipated in the AUAR should be described. If any farmland will be preserved by special protection programs, this should be discussed.*

*If development of the AUAR will interfere or change the use of any existing designated parks, recreation areas, or trails, this should be described in the AUAR. The RGU may also want to discuss under this item any proposed parks, recreation areas, or trails to be developed in conjunction with development of the AUAR area.*

*The AUAR must include a statement of certification from the RGU that its comprehensive plan complies with the requirements set out at Minnesota Rules, part 4410.3610, subpart 1. The AUAR document should discuss the proposed AUAR area development in the context of the comprehensive plan. If this has not been done as part of the responses to Items 6, 9, 11, 18, and others, it must be addressed here; a brief synopsis should be presented here if the material has been presented in detail under other items. Necessary amendments to comprehensive plan elements to allow for the development scenarios should be noted. If there are any management plans of any other local, state, or federal agencies applicable to the AUAR area, the document must discuss the compatibility of the plan with the development scenarios studied, with emphasis on any incompatible elements.*

#### *Compatibility with Existing Land Use*

The Study Area and adjacent properties consist of a mix of industrial, transitional, and residential land uses. While the Study Area's current zoning is BLM and the City's Comprehensive Plan indicates that the Study Area is guided for Business and Light Manufacturing (as defined in Table 9), there are residential homes in the area that would see the transition of this land use over time.

A data center facility has the potential to be considered incompatible with existing residential areas. For example, data center buildings would be aesthetically distinct from residences, and have the potential to produce noise from chillers and backup generators, if any.

A data center facility could be considered compatible with other existing land uses such as the existing contractor and service businesses, electric substation and railroad corridor due to their industrial nature.

#### *Consistency with Future Land Use*

The existing land within the Study Area is expected to transition to different land uses as the city develops. Any new development, redevelopment, change in land use, or change in zoning is required to be consistent with the Comprehensive Plan and comply with all the development requirements for the associated zoning.

The Project Proposer is consistent with the future land uses (designated as Business and Light Manufacturing) under the City of Hermantown 2045 Comprehensive Plan (see Figure 12 and Table 9). The City of Hermantown has certified that the updated Comprehensive Plan complies with the requirements set forth in Minnesota Rules, part 4410.3610, subpart 1.

#### *Consistency with Comprehensive Sanitary Sewer and Water Plans*

The proposed Project's sanitary sewer and watermain extensions would be designed in accordance with the City's comprehensive plan in terms of routing and sizing for the appropriate level of demand based on the future build out.

#### *Consistency with Hermantown 2045 Comprehensive Plan*

The proposed Project is consistent with the adopted Hermantown 2045 Comprehensive Plan. One of the goals of the 2045 Comprehensive Plan is to, "[f]ocus the development of new business, light manufacturing, and industrial uses in designated areas with strategic highway access to create desirable environments for attracting and retaining businesses, increasing local job opportunities, and limiting impacts on residential areas."<sup>25</sup> The plan discusses doing so by targeting growth and expansion of business, light manufacturing and industrial use in three general locations, including the area around Highway 2 and Midway Road, in the southwest corner of Hermantown.<sup>26</sup> Specifically, the Hermantown 2045 Comprehensive Plan includes areas identified as a Business & Light Manufacturing district in the southwest corner of the City, which the Study Area is within and adopted an urban services boundary (USB) expansion area in the southwest. The Plan notes that because, "there is less vacant/developable land within the current USB for commercial, business, and industrial uses, a USB expansion in the southwest area for these uses may make sense in the future." The proposed Project is a business and light industrial use that would increase local job opportunities and implement mitigation to limit impacts on surrounding residences, consistent with the 2045 Comprehensive Plan. The Project Proposer also plans to extend utilities to serve the Business & Light Manufacturing district and

---

<sup>25</sup> Comprehensive Plan at 53.

<sup>26</sup> Comprehensive Plan at 53.

enable the City to target growth and expansion of business, light manufacturing and industrial uses, consistent with the goal identified in the 2045 Comprehensive Plan.

#### *Consistency with Zoning*

The Zoning Code is one of the major implementation tools of the Comprehensive Plan. The Study Area is currently zoned as BLM, as shown on Figure 11. The existing zoning of BLM allows for communication services such as the Project. Even within a BLM zoning district, the proposed Project would require a special use permit approval to construct a data center to include additional provisions to mitigate any land use conflicts in terms of noise and visual requirements.

**c. Identify measures incorporated into the proposed project to mitigate any potential incompatibility as discussed in Item 9b above.**

A special use permit is required for a data center use in the City of Hermantown. In addition to the mitigation plan included with this updated AUAR, the special use permit would include conditions to mitigate potential land use conflicts, including potential conflicts with adjacent residential uses. These conditions would include setbacks from property lines and visual screening to mitigate visual impacts, and a requirement to comply with state noise standards, confirmed by a development of noise models to assure conformance of the facility during normal operations.

If backup generators are part of the design, backup generator use is limited by Hermantown Ordinance to operation during power outages and for testing and maintenance purposes. Testing and maintenance may only take place on weekdays between 8:00 a.m. and 5:00 p.m. Frequency of testing is anticipated to occur:

- 6 hours at 10 percent load for all engines for monthly maintenance (30 minutes/month, 12 months)
- 1 hour at 100 percent load for all engines for annual maintenance

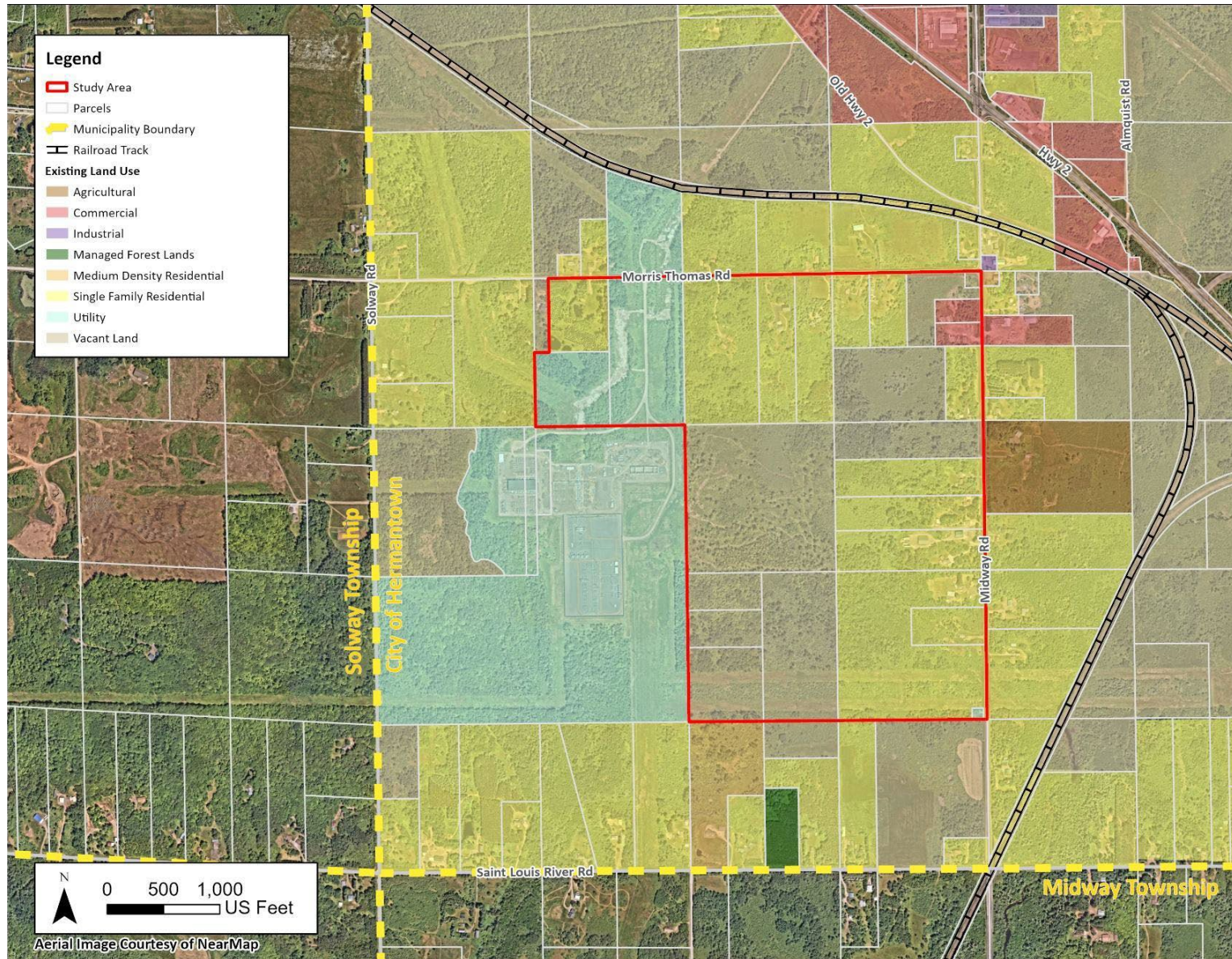
Additional limits may apply within 100 feet of a residential dwelling unit.<sup>27</sup>

Additionally, all construction and development within the Study Area would follow best management practices regarding stormwater, erosion control, and drainage to comply with the St. Louis River Comprehensive Watershed Management Plan.

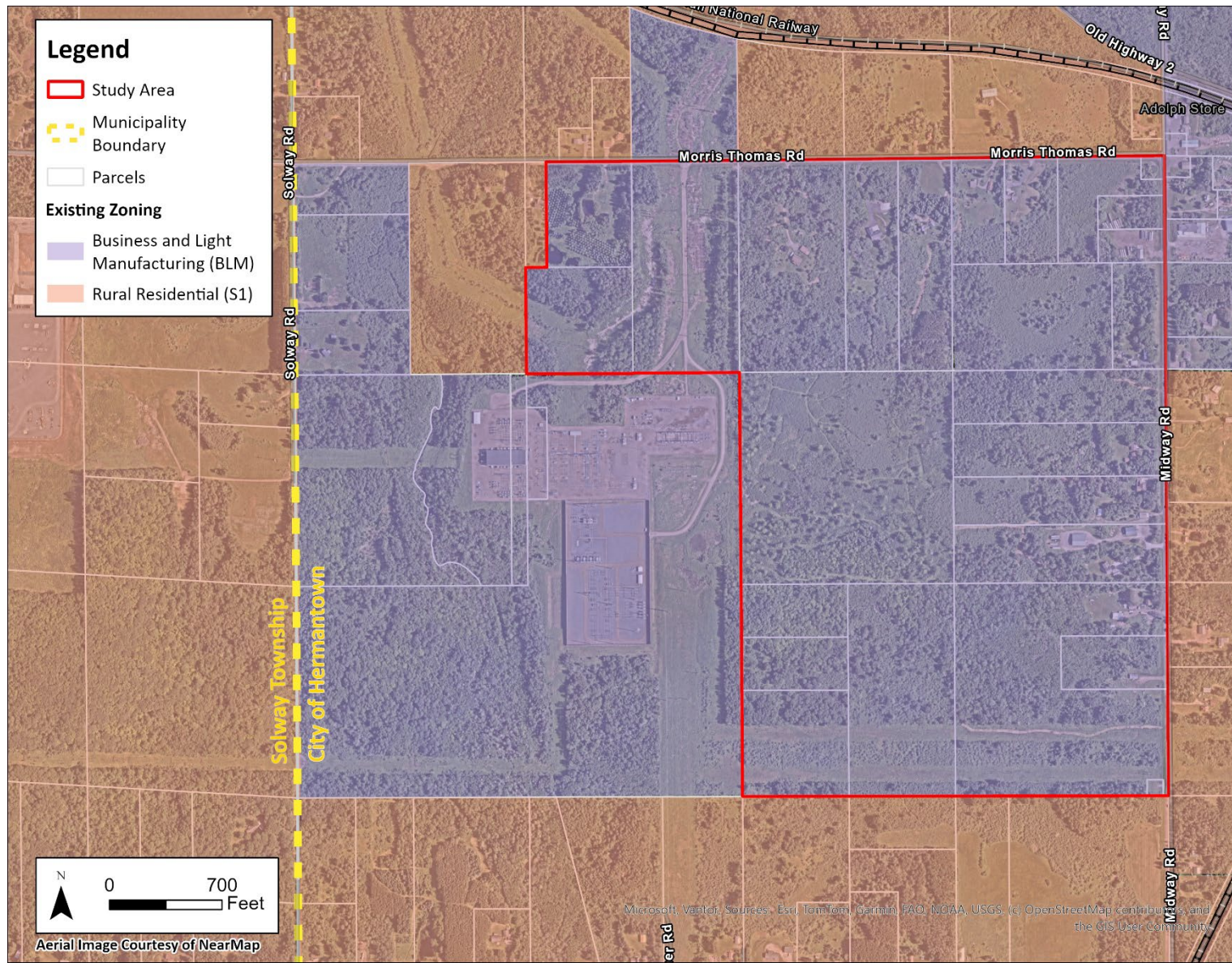
---

<sup>27</sup> Hermantown Ordinances § 480.10.2 (<https://hermantownmn.com/wp-content/uploads/2023/04/CHAPTER-4-LICENSING-BUSINESS-REGULATIONS.pdf>).

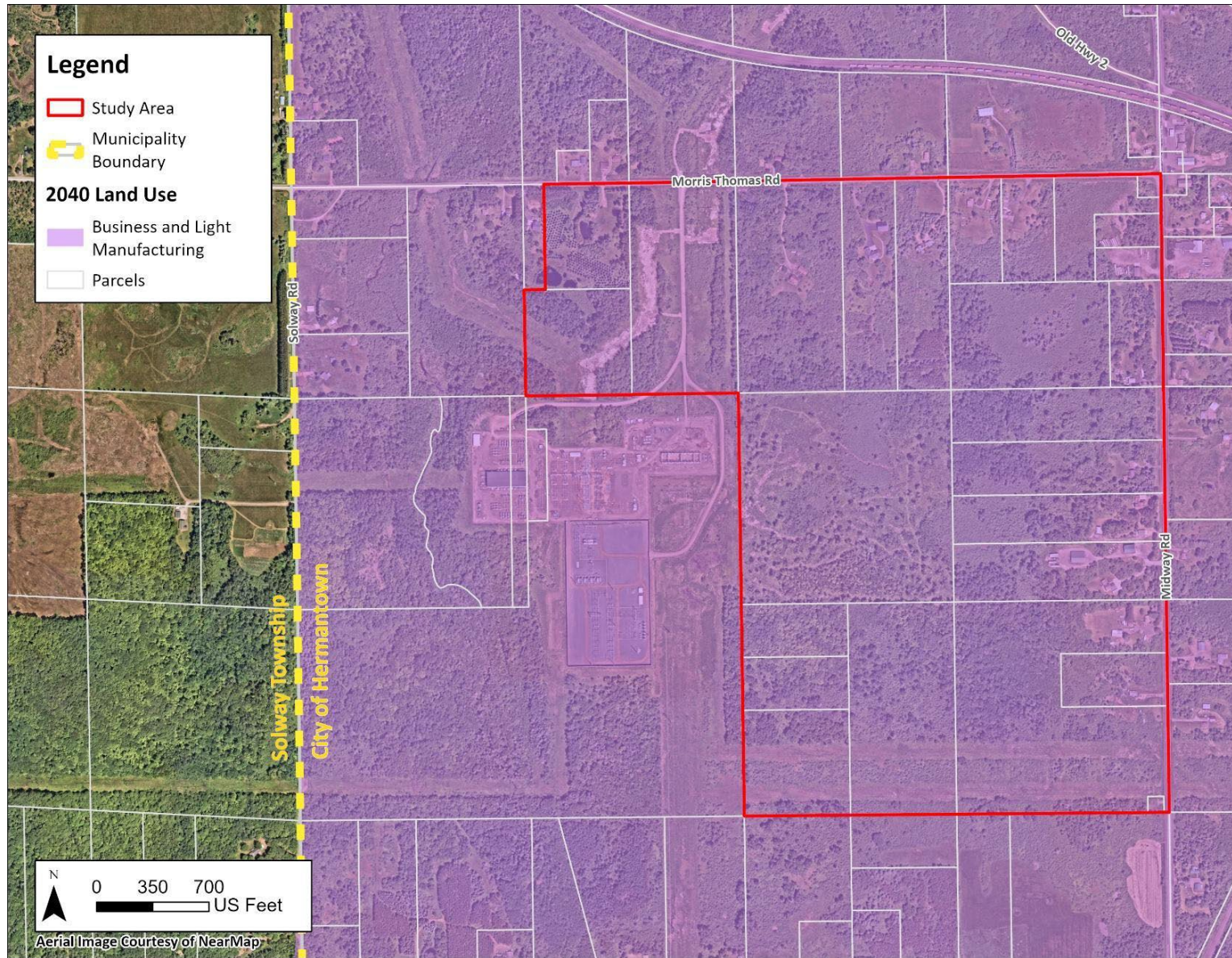
**Figure 10: Existing Land Use**



**Figure 11: Existing Zoning**



**Figure 12: Future Land Use**



## 11. GEOLOGY, SOILS, AND TOPOGRAPHY/LANDFORMS

---

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

*AUAR Guidance: A map should be included to show any groundwater hazards identified.*

A preliminary geotechnical report was conducted by Braun Intertec in August 2025 for the Study Area bound to the east by Midway Road, to the north by Morris Thomas Road, to the south by St. Louis River Road, and to the west by the electrical substation.

According to the geotechnical report, the AUAR Study Area's soils predominately consist of glacially deposited soils consisting of a mixture of silt, clay, sand, and gravel associated with the Cromwell glacial formation. The soils have loamy sands and silts over dense till or glacial outwash. The bedrock for the majority of the Study Area is a part of the Animikie Group, specifically within the Virginia and Thompson Formations. The mean depth to bedrock is approximately 50-250 feet below ground surface. Bedrock is composed of basalt, slate, and graywacke. In descending order, the upper formations are the Ely's Peak basalts and the Virginia and Thompson formations. Based on a review of the geology maps and well indices, bedrock is anticipated to get shallower moving across the site from west to east with the shallowest bedrock in the southeast corner of the site.

Based on a review of topography contour maps from MnTOPO, topography and site surface grades range from approximately 1,250 feet to 1,360 feet above mean sea level with grades generally downward sloping from west to east. The highest elevations are located in the northwest portion of the site and lowest elevations are located in the southeast portion of the Study Area.

Geotechnical soil tests conducted within the Study Area indicate that groundwater was typically present 7-44 feet beneath the current ground surface.

There are no known sinkholes, shallow limestone formations, or unconfined/shallow aquifers located within the AUAR Study Area. There are no known karst conditions located within the Study Area or within approximately 500 feet from the Study Area.

### *Construction Phase*

The geotechnical investigation that was performed indicated various deep bedrock elevations and water tables on-site. Based on the proposed grading plan, it is not anticipated that bedrock would be encountered during construction, nor that blasting of any kind would be necessary on the development site. Most of the on-site soils are conducive to the development of zones of perched water, where water is being trapped in the higher-permeable sandy soils on top of the lower permeable clayey and silty soils. During construction, perched groundwater conditions

should be expected where fine grained clay- or silt-laden soils are encountered in excavations. Project planning should anticipate seasonal and annual fluctuations of groundwater. These types of conditions are typical in this region and should be accounted for by the selected earthwork contractor.

The contractor should note the on-site silty and clayey soils are highly susceptible to disturbance due to repeated construction traffic and excessive moisture. Disturbance of these soils may cause areas that were previously prepared or suitable for exterior slabs or pavement support to become unstable and require additional moisture conditioning, compaction, and/or subcutting. The contractor should take care to avoid disturbing the soils. This may include limiting wheeled traffic through wet areas, utilizing smooth lipped buckets on backhoes for excavations of sensitive soils, and utilizing crushed rock to provide protection in high traffic areas such as equipment/material storage areas.

- 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 soil limitations, such as steep slopes or highly permeable soils. Provide estimated volume and acreage of soil excavation and/or grading. Discuss impacts from project activities (distinguish between construction and operational activities) related to soils and topography. Identify measures during and after project construction to address soil limitations including stabilization, soil corrections, or other measures. Erosion/sedimentation control related to stormwater runoff should be addressed in response to Item 11.b.ii.**

*AUAR Guidance: The number of acres to be graded and number of cubic yards of soil to be moved need not be given; instead, a general discussion of the likely earthmoving needs for development of the area should be given, with an emphasis on unusual or problem areas. In discussing mitigation measures, both the standard requirements of the local ordinances and any special measures that would be added for AUAR purposes should be included. A standard soils map for the area should be included.*

According to the NRCS Web Soil Survey, the Study Area is comprised of 11 different soil types. Soil information is included in Table 10 and Figure 13. The erosion hazard rating included in Table 10 indicates the hazard of soil loss from off-road areas after the soil surface is exposed from disturbance activities. Within the Study Area, approximately 69 percent of the soil surface is mapped with a “moderate” erosion rating, indicating that some erosion is likely in these areas and that erosion control measures may be needed. Less than 1 percent of the Study Area, roughly 0.1 acres along its northern border, is mapped with a “very severe” erosion rating, indicating that erosion is expected, soil productivity would likely be lost, off-site damage is probable, and erosion-control measures are both costly and generally impractical. The remaining 31 percent of the Study Area was not rated or was mapped with a “slight” rating, meaning that erosion is unlikely under ordinary climatic conditions.

### *Construction Phase*

The proposed Project would require up to approximately 2.3 million total cubic yards of excavation over 184 acres. Types of earthwork equipment used would include scrapers, bulldozers, excavators, and motor graders. Where existing grades are steeper than 4 units of horizontal distance - run, the slope changes by 1 unit of vertical distance – rise, fill would be placed from low to high elevations on benches so that successive lifts are spread and compacted on level surfaces. The height of a given bench may vary, but the width would consistently be great enough to accommodate compaction equipment. In addition, site grading would be maintained in such a manner as to minimize the ponding of water following rain events during construction activities. The near surface soils are sensitive to moisture intrusion and may require additional soil corrections prior to paving if allowed to become unstable due to moisture intrusion.

Based on the results of the geotechnical soil borings, the site is suitable for support of the proposed buildings using conventional spread footing foundations and ground-supported slabs. However, the topsoil, undocumented fill, and soft/unstable near-surface glacial soils are not suitable for supporting the proposed building structures nor are they suitable for the support of engineered fill soils to attain proposed grades. These soils should be removed from beneath the building pad and other development areas. To reduce risks of settlement and poor structural performance as a result of the soft soils, additional subgrade improvements would be needed beneath building structures consisting of a soil correction to support the proposed buildings.

Slope stabilization would be provided by means of vegetation establishment, erosion control blankets, or other standard methods of erosion and sediment control. Stringent erosion and sediment control measures as part of the stormwater management plans would be implemented in specific drainage areas to limit potential negative impacts to rare mussels in the Midway River (see Item 12ii Water Resources and **Appendix C** for more details on stormwater plans). The proposed development within the Study Area would require compliance with the St. Louis River Watershed Comprehensive Watershed Management Plan and the City of Hermantown's erosion and sediment control standards. A National Pollutant Discharge Elimination System (NPDES) and Stormwater Pollution Prevention Program (SWPPP) Construction Stormwater Permit would be obtained prior to any earthwork or grading activities within the Study Area.

### *Operational Activity*

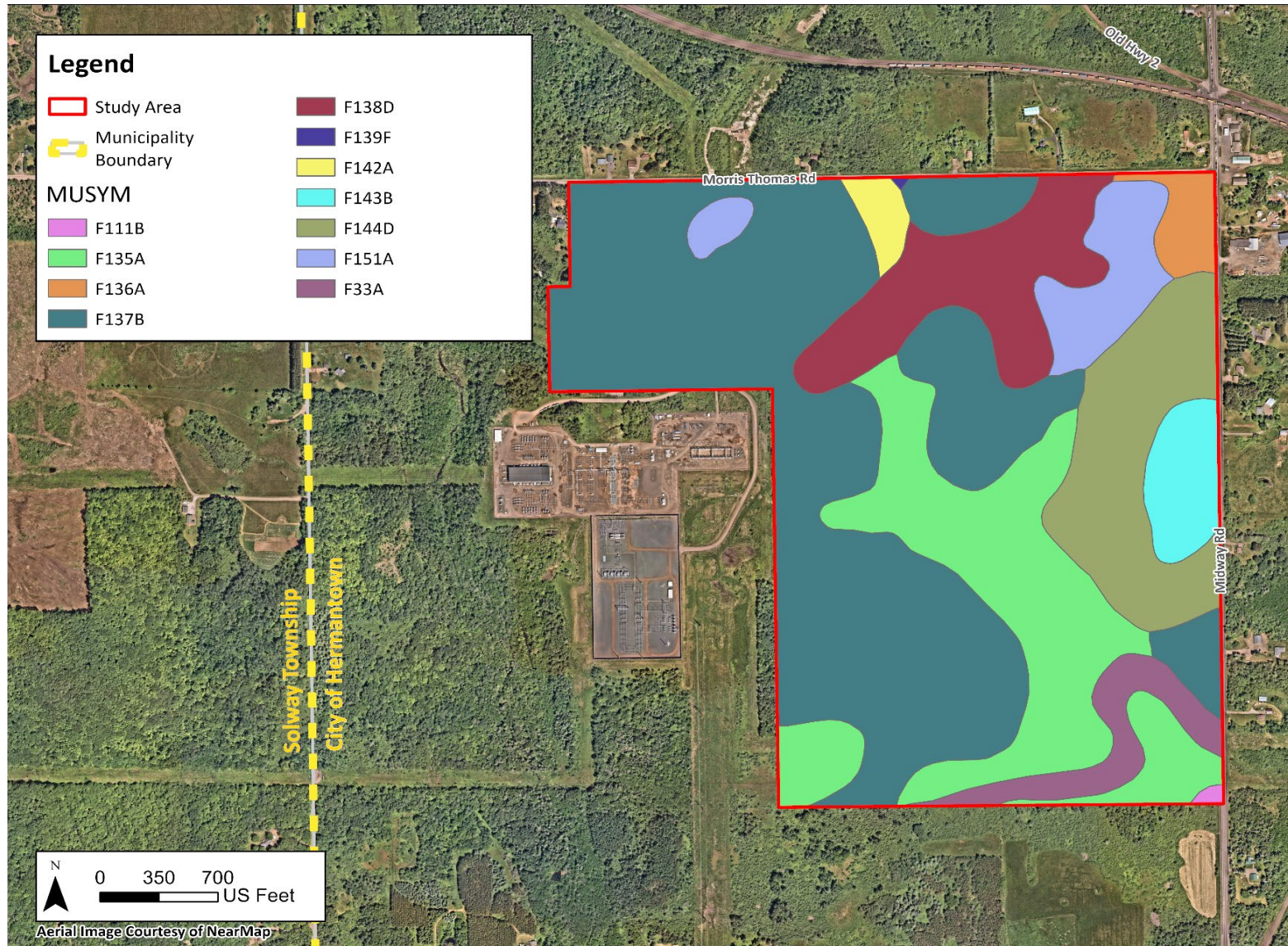
Operational activities are not expected to have an impact on soils within the Study Area. Post-construction, permanent BMPs would be established to stabilize soils and prevent erosion. Once BMPs are established, erosion and sedimentation would be minimized during normal site operations.

**Table 10: Soil Types**

| Map unit symbol | Map unit name                                                          | Acres in Study Area | Percent in Study Area | Farmland Rating                  | Hydrologic Soil Group         | Hydric | Erosion Hazard Rating |
|-----------------|------------------------------------------------------------------------|---------------------|-----------------------|----------------------------------|-------------------------------|--------|-----------------------|
| F33A            | Cathro muck, depressional, dense substratum, 0 to 1 percent slopes     | 9.9                 | 3.5%                  | Not prime farmland               | Hydric soil                   | B/D    | Slight                |
| F111B           | Augustana-Hegberg complex, 1 to 8 percent slopes                       | 0.4                 | 0.1%                  | Farmland of statewide importance | Predominantly non-hydric soil | B/D    | Slight                |
| F135A           | Hermantown-Canosia-Giese, depressional, complex, 0 to 3 percent slopes | 54.5                | 19.5%                 | Farmland of statewide importance | Partially hydric soil         | C/D    | Slight                |
| F136A           | Hermantown silt loam, 1 to 3 percent slopes                            | 5.1                 | 1.8%                  | Farmland of statewide importance | Predominantly non-hydric soil | C/D    | Slight                |
| F137B           | Normanna-Canosia-Hermantown complex, 0 to 8 percent slopes             | 127.4               | 45.6%                 | Farmland of statewide importance | Predominantly non-hydric soil | B/D    | Moderate              |
| F138D           | Ahmeek-Normanna-Canosia complex, 0 to 18 percent slopes                | 25.9                | 9.3%                  | Not prime farmland               | Predominantly non-hydric soil | C      | Moderate              |
| F139F           | Ahmeek-Canosia complex, 0 to 45 percent slopes                         | 0.1                 | 0.0%                  | Not prime farmland               | Predominantly non-hydric soil | C      | Very Severe           |
| F142A           | Canosia loam, 0 to 2 percent slopes                                    | 3.2                 | 1.2%                  | Not prime farmland               | Predominantly hydric soil     | C/D    | Slight                |

| Map unit symbol | Map unit name                                               | Acres in Study Area | Percent in Study Area | Farmland Rating                  | Hydrologic Soil Group         | Hydric | Erosion Hazard Rating |
|-----------------|-------------------------------------------------------------|---------------------|-----------------------|----------------------------------|-------------------------------|--------|-----------------------|
| F143B           | Normanna-Aldenlake-Canosia complex, 0 to 8 percent slopes   | 8.8                 | 3.2%                  | Farmland of statewide importance | Predominantly non-hydric soil | B/D    | Moderate              |
| F144D           | Aldenlake-Ahmeek complex, 8 to 18 percent slopes            | 29.6                | 10.6%                 | Not prime farmland               | Predominantly non-hydric soil | A      | Moderate              |
| F151A           | Tacoosh mucky peat, dense substratum, 0 to 1 percent slopes | 14.4                | 5.1%                  | Not prime farmland               | Hydric soil                   | A/D    | Slight                |

**Figure 13: Soil Types**



## 12. WATER RESOURCES

*AUAR Guidance: The information called for on the EAW form should be supplied for any of the infrastructure associated with the AUAR development scenario, and for any development expected to physically impact any water resources. Where it is uncertain whether water resources will be impacted depending on the exact design of future development, the AUAR should cover the possible impacts through a “worst case scenario” or else prevent impacts through the provisions of the mitigation plan.*

### a. Describe surface water and groundwater features on or near the site below.

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

A comprehensive level 2 on site wetland delineation was completed for the Study Area in September and October of 2024, and in June and September of 2025 (see **Appendix B**). In total, 36 wetlands, 1 wet ditch, 7 ephemeral streams, and 1 upland erosional feature were identified and delineated during field surveys within the Study Area. Several Technical Evaluation Panels with the City of Hermantown and the Board of Water and Soil Resources (BWSR) have been completed to date. Additionally, Kimley-Horn participated in an on-site visit with USACE on May 13, 2026 to evaluate the jurisdictional status of wetlands and linear features identified within the Study Area. Specifically, Wetlands 1 and 15 were evaluated for the potential presence of continuous surface connection (CSC) to an offsite relatively permanent water (RPW), the Midway River. On June 10, 2026, USACE issued an Approved Jurisdictional Determination (AJD) for the majority of the Study Area. USACE determined that Wetlands 2 through 20 and 22 through 29, and Streams ES-2 through ES-7, are non-jurisdictional because they lacked CSC to an RPW or Traditional Navigable Waterway (TNW). Portions of the AUAR Study Area did not receive a jurisdictional determination, including Wetlands 1, 21, and 30 through 36 or Stream ES-1. No impacts to Wetlands 1, 21, and 30 through 36 or Stream ES-1 are proposed at this time; however, if impacts are proposed later a revised or additional AJD may be required in the future as final design progresses.

Minnesota’s Wetland Conservation Act (WCA) is expected to apply to wetlands within the Study Area. The regulatory provisions of WCA are primarily administered by LGUs, with oversight by BWSR. Each LGU has an associated Technical Evaluation Panel (TEP) to provide technical expertise, advise and make recommendations to the LGU on WCA compliance. The TEP includes a BWSR wetland specialist as well as representatives from the MDNR, the local Soil and Water Conservation District (SWCD) and the LGU.

Kimley-Horn is anticipating a joint application submission under WCA in 2026, which will request Type and Boundary concurrence for all delineated wetland boundaries as well as wetland mitigation plan approval. Resources are described below in Table 11 and shown in Figure 14.

No migratory waterfowl feeding / resting areas or designated wildlife lakes are present within or adjacent to the Study Area.

**Table 11: Aquatic Resource Delineation Summary**

| Resource ID       | Size (acres or Linear Feet) | HGM <sup>28</sup> | Cowardin Classification |
|-------------------|-----------------------------|-------------------|-------------------------|
| Wetland 1 (W-1)   | 21.83 ac                    | Depression        | PEMA/B, PSSD, PFOA      |
| Wetland 2 (W-2)   | 11.81 ac                    | Mineral Flat      | PEMA, PSSD              |
| Wetland 3 (W-3)   | 0.07 ac                     | Mineral Flat      | PEMA, PSSD              |
| Wetland 4 (W-4)   | 0.22 ac                     | Depression        | PEMA                    |
| Wetland 5 (W-5)   | 0.11 ac                     | Depression        | PEMB                    |
| Wetland 6 (W-6)   | 2.06 ac                     | Mineral Flat      | PSS1D, PFOA             |
| Wetland 7 (W-7)   | 0.23 ac                     | Depression        | PEMB                    |
| Wetland 8 (W-8)   | 0.05 ac                     | Depression        | PEMB                    |
| Wetland 9 (W-9)   | 0.07 ac                     | Depression        | PEMB                    |
| Wetland 10 (W-10) | 0.20 ac                     | Depression        | PEMA                    |
| Wetland 11 (W-11) | 0.21 ac                     | Depression        | PSSD                    |
| Wetland 12 (W-12) | 0.46 ac                     | Depression        | PSSD                    |
| Wetland 13 (W-13) | 0.73 ac                     | Depression        | PEMC, PSSD              |
| Wetland 14 (W-14) | 0.07 ac                     | Mineral Flat      | PEMA                    |
| Wetland 15 (W-15) | 13.73 ac                    | Mineral Flat      | PEMA/B/C, PSSD, PUBG    |
| Wetland 16 (W-16) | 0.19 ac                     | Depression        | PSSC                    |
| Wetland 17 (W-17) | 0.35 ac                     | Depression        | PSSD                    |
| Wetland 18 (W-18) | 0.16 ac                     | Depression        | PEMA                    |
| Wetland 19 (W-19) | 0.07 ac                     | Depression        | PEMA                    |
| Wetland 20 (W-20) | 0.11 ac                     | Depression        | PEMB                    |
| Wetland 21 (W-21) | 0.62 ac                     | Depression        | PSSD                    |
| Wetland 22 (W-22) | 0.67 ac                     | Depression        | PSSD                    |
| Wetland-23 (W-23) | 0.22 ac                     | Depression        | PEMC, PSSD              |

<sup>28</sup> The Hydrogeomorphic (HGM) classification system is described at: [https://bwsr.state.mn.us/sites/default/files/2018-12/WETLANDS\\_delin\\_Circular\\_39\\_MN.pdf](https://bwsr.state.mn.us/sites/default/files/2018-12/WETLANDS_delin_Circular_39_MN.pdf)

| Resource ID                | Size (acres or Linear Feet) | HGM <sup>28</sup> | Cowardin Classification |
|----------------------------|-----------------------------|-------------------|-------------------------|
| Wetland-24 (W-24)          | 0.67 ac                     | Depression        | PEMA, PSSC              |
| Wetland 25 (W-25)          | 0.44 ac                     | Depression        | PSSD                    |
| Wetland 26 (W-26)          | 0.38 ac                     | Depression        | PSSD                    |
| Wetland 27 (W-27)          | 0.06 ac                     | Depression        | PSSD                    |
| Wetland 28 (W-28)          | 0.21 ac                     | Depression        | PEMB/C                  |
| Wetland 29 (W-29)          | 0.05 ac                     | Depression        | PEMB/C                  |
| Wetland 30 (W-30)          | 0.07 ac                     | Depression        | PEMA                    |
| Wetland 31 (W-31)          | 0.06 ac                     | Depression        | PUBHx                   |
| Wetland 32 (W-32)          | 0.18 ac                     | Depression        | PUBHx                   |
| Wetland 33 (W-33)          | 0.25 ac                     | Depression        | PUBHx                   |
| Wetland 34 (W-34)          | 0.88 ac                     | Depression        | PUBHx, PSSD             |
| Wetland 35 (W-35)          | 0.04 ac                     | Depression        | PEMB                    |
| Wetland 36 (W-36)          | 0.28 ac                     | Organic Flat      | PEMA                    |
| Wet Ditch 1 (WD-1)         | 0.27 ac                     | Depression        | PEMA/C                  |
| Ephemeral Stream 1 (ES-1)  | 1,275 LF                    | N/A               | N/A                     |
| Ephemeral Stream 2 (ES-2)  | 201 LF                      | N/A               | N/A                     |
| Ephemeral Stream 3 (ES-3)  | 77 LF                       | N/A               | N/A                     |
| Ephemeral Stream 4 (ES-4)  | 125 LF                      | N/A               | N/A                     |
| Ephemeral Stream 5 (ES-5)  | 129 LF                      | N/A               | N/A                     |
| Ephemeral Stream 6 (ES-6)  | 235 LF                      | N/A               | N/A                     |
| Ephemeral Stream 7 (ES-7)  | 108 LF                      | N/A               | N/A                     |
| Erosional Feature 1 (EF-1) | 32 LF                       | N/A               | N/A                     |

Within the Study Area, there is an MDNR public watercourse (ID: S-002-010-003.4-001) which aligns with Ephemeral Stream 1. Coordination with the MDNR regarding this feature is ongoing.

In 2025, the MPCA conducted the Midway River Watershed Protection Study in coordination with local partners to guide potential development near the Midway River and its tributaries. The study was conducted to protect and restore cold-water stream habitats, with an emphasis on protection of native Brook Trout in the Midway River watershed. The study identifies undersized culverts, human development, and the presence of key cold-water habitats on private land as the main threats to cold-water stream habitats. The study defines next steps including targeting allocated funds to protect high-quality cold-water habitats and to restore impaired cold-water habitats. In the study, Adolph Creek, which is located approximately 1,500 feet northeast of the Study Area, was designated as a protected trout stream. Additionally, an unnamed tributary to Adolph Creek, which extends west into the northeast portion of the Study Area, was designated as a protected tributary. See Item 12bii for more information on stormwater impacts and mitigation. Because the proposed Project would result in

stormwater discharges to Adolph Creek, a protected tributary of the Midway River, MPCA has specific temperature control requirements. The proposed Project must be designed so the discharge from the proposed Project minimizes any increase in the temperature of trout streams resulting from the one and two year 24-hour precipitation events.

Outside, but within the vicinity of the Study Area, two additional MDNR public watercourses, West Rocky Run (ID: S-002-010-003) and Midway River (S-002-010), are mapped to the west and southeast of the Study Area respectively. West Rocky Run Creek is also designated as a designated trout stream, a MPCA impaired water (due to *E. coli*), and a National Hydrography Dataset (NHD) flowline. Additionally, Midway River is designated as a MDNR trout stream, and NHD flowline. Wetlands, mapped as a part of the National Wetland Inventory by the MDNR, are mapped outside of the Study Area (see Figure 15). There are no waters designated as impaired by the MPCA within the Study Area. The FEMA 100-year floodplain (panel numbers 2707083743E and 2707083744E, effective 03/25/2025) is shown on Figure 16. The Study Area is located outside of the FEMA 100-year floodplains, which are mapped just east and west of the Study Area. The floodplain mapped east of the Study Area generally aligns with the Midway River and the floodplain mapped to the west of the Study Area generally aligns with West Rocky Run.

Figure 14: Surface Water Resources Within Study Area

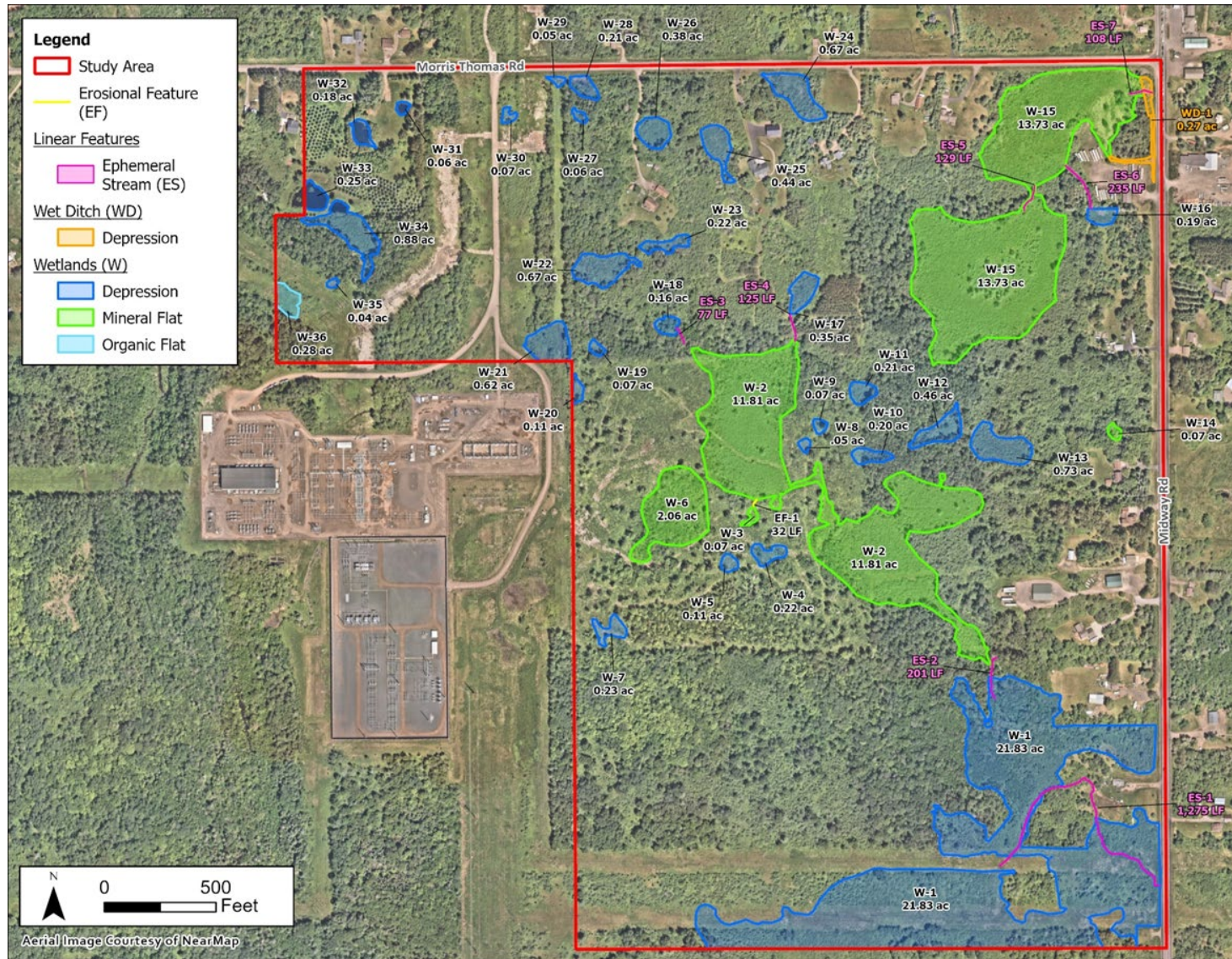


Figure 15: Surface Water Resources (within 1 mile)

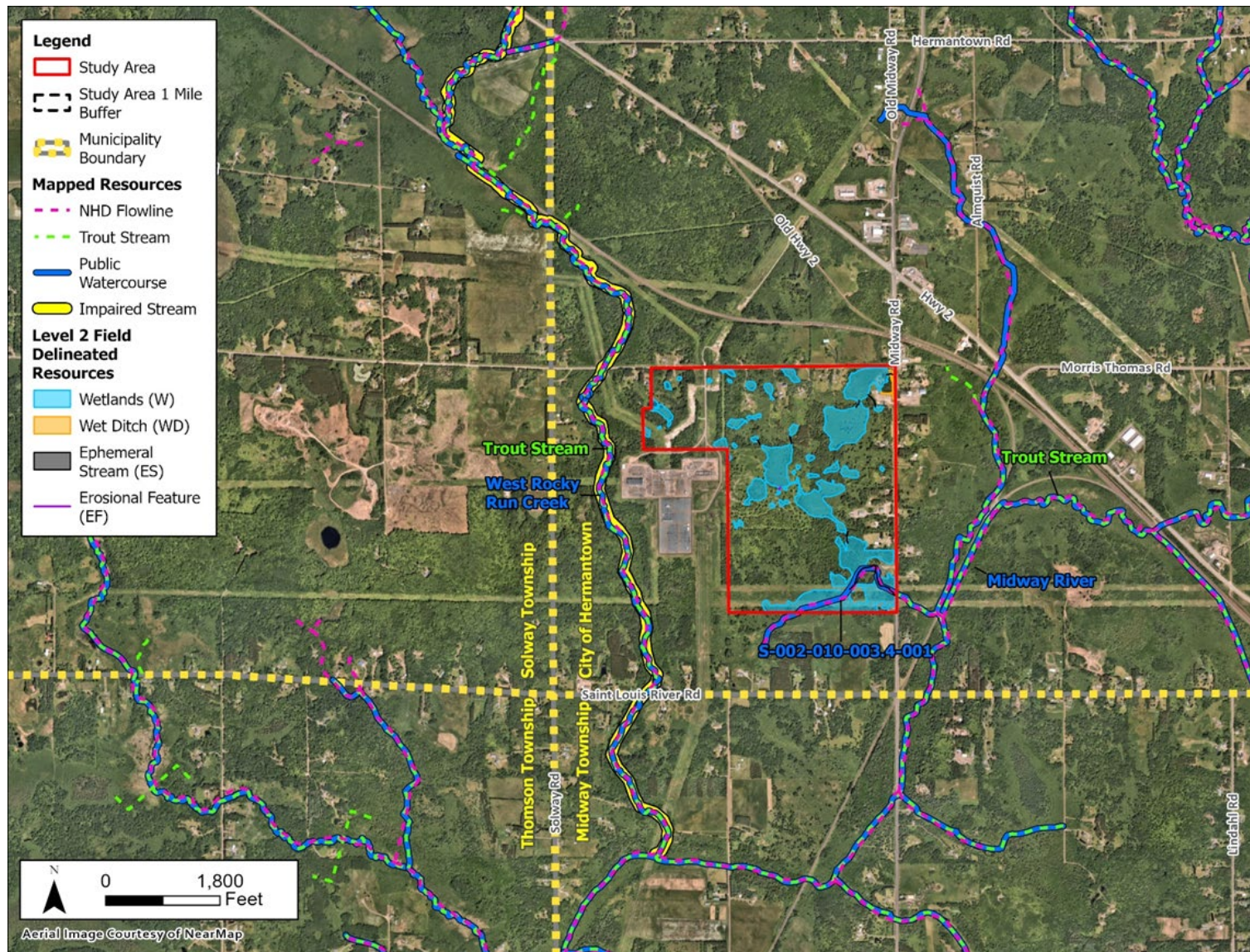
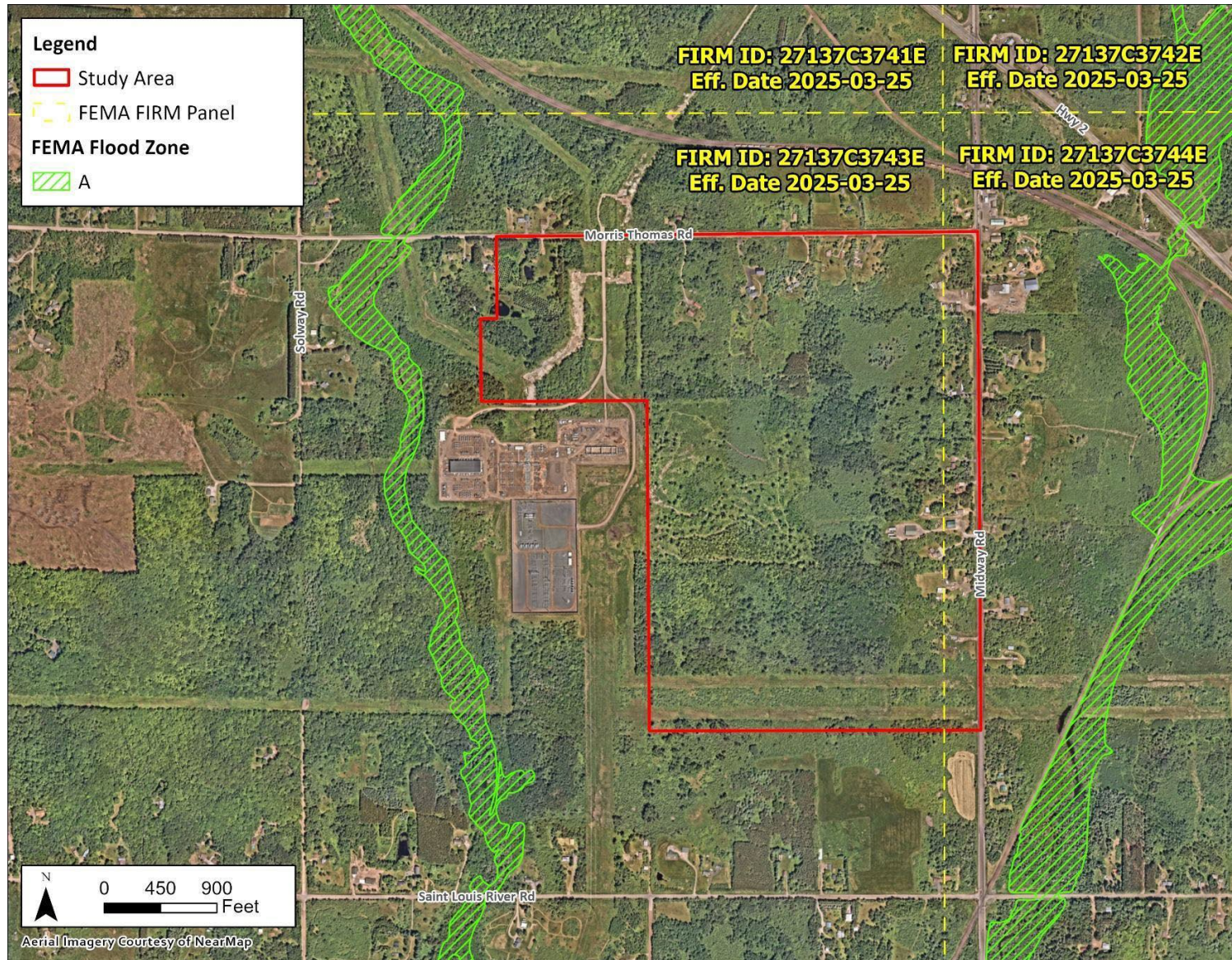


Figure 16: FEMA Floodplain Map



- ii. **Groundwater – aquifers, springs, and seeps. Include 1) depth to groundwater; 2) if project is within a MDH well protection area; and 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.**

#### *Groundwater Resources*

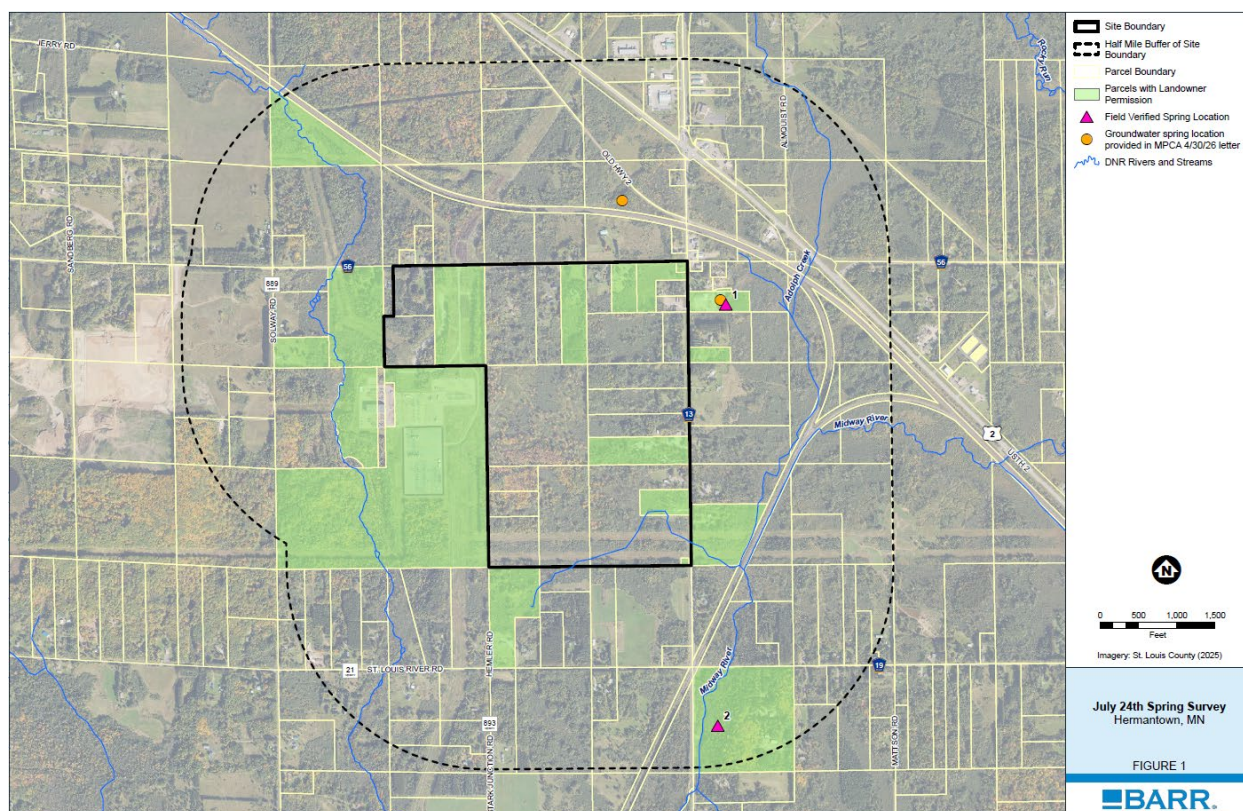
Geotechnical soil tests conducted within the Study Area indicate that groundwater was typically present 7-44 feet beneath the current ground surface.

The Project Proposer will complete a spring inventory and survey to identify and document potential springs, seeps, and other groundwater-discharge features within the Study Area and targeted adjacent areas. The survey will include desktop review and field reconnaissance components and will be used to further evaluate existing groundwater–surface water interactions and potential connections to nearby wetlands, headwater drainage features, and coldwater streams.

The desktop review will compile and evaluate available information relevant to spring occurrence, including the Minnesota DNR Spring Inventory, Minnesota Geological Survey Karst Features Database, National Hydrography Dataset, National Wetland Inventory, LiDAR-derived terrain data, historic and recent aerial imagery, the Midway River Watershed Protection Study, spring locations identified by the MPCA, and available Project-specific wetland, geotechnical, and water-resource information. The review will identify terrain and landscape characteristics that may indicate groundwater discharge, such as slope breaks, toe-of-slope areas, concave landforms, headwater wetlands, persistent wet areas, abrupt channel origins, vegetation signatures, and other potential seepage features. The desktop findings will be used to identify and prioritize areas for field reconnaissance.

Field reconnaissance will be completed within accessible portions of the Study Area and targeted adjacent areas identified during the desktop review, subject to landowner permission. At the time of the Final AUAR, one spring survey mobilization has occurred. Where access was obtained within areas deemed by the desktop as potentially containing springs, a spring survey occurred on July 23, 2026, in accordance with the survey plan. Two springs were identified, including one that was previously identified by the MPCA west of Adolph Creek and one previously undocumented spring east of Midway River and south of the Study Area (see Figure 17).

The results will inform the evaluation of groundwater–surface water interactions and the need for additional avoidance, minimization, monitoring, or mitigation measures during final Project design and operations.

**Figure 17: Spring Locations**

### *Groundwater - Construction and Operations*

The Study Area is located in northeast Minnesota, where shallow groundwater systems may be seasonally perched and influenced by glacial sediments and bedrock fractures. The MDNR recognizes that groundwater and surface water in this region are commonly hydraulically connected, particularly where seepage, springs, or headwater drainage features are present (MDNR, Groundwater–Surface Water Interaction Guidance, Minn. Stat. § 103G). No mapped springs were previously identified within the Study Area based on the MDNR Spring Inventory, National Wetlands Inventory (NWI) data, and water resource inventories. However, consistent with MDNR guidance, the presence of intermittent or unmapped groundwater discharge features cannot be entirely excluded given site geology and topography. To supplement and verify existing mapping, a field spring survey will be conducted within the Study Area to identify and document springs and other groundwater discharge features that may not be represented in currently available datasets, including the MDNR Spring Inventory.

The proposed development would utilize a non-evaporative system (dry or air cooled) for cooling and would not withdraw groundwater or surface water. (Dry- and air- cooled systems are discussed in section 12.ii.b, below.) No production wells, high-capacity wells, dewatering systems, or consumptive process water use are proposed. As such, the Project does not require appropriations permitting under Minn. Stat. § 103G.271 and is not expected to affect aquifer storage, groundwater levels, or regional

groundwater flow. Although no direct groundwater withdrawal would occur, increased impervious surface coverage has the potential to reduce natural infiltration and groundwater recharge if unmanaged. The proposed development would comply with the MPCA Construction Stormwater Permit (NPDES/SDS Permit No. MNR100001) and applicable post-construction standards. Stormwater systems are designed in accordance with:

- MPCA Minnesota Stormwater Manual
- NPDES Stormwater Permit for water quality, rate control, erosion control, and maintenance/monitoring.
- City of Hermantown stormwater requirements

The proposed Project would incorporate precautionary protection measures consistent with MDNR spring protection recommendations and best practices:

- Avoidance of deep excavation near drainageways and topographic lows
- No groundwater cutoff walls or subsurface barriers that could intercept lateral groundwater flow
- Preservation of vegetated buffers adjacent to natural drainage features to the extent practicable

If groundwater seepage or spring flow is encountered during construction, the Project Proposer would implement an adaptive management response consistent with MPCA and MDNR best practices, including evaluation by a qualified professional and design modification to maintain existing recharge–discharge relationships. Construction activities would follow all requirements of the MPCA Construction Stormwater Permit, including erosion prevention and sediment control practices designed to protect infiltration capacity and downstream water resources. Any unanticipated groundwater inflow encountered during excavation would be documented and managed to avoid alteration of natural groundwater discharge patterns, consistent with Minn. Stat. § 103G.211 (duty to prevent water resource impairment).

Due to the shallow groundwater in various areas that is perched on clay layers, dewatering during construction may be needed. A MDNR Water Appropriation Permit is required if a withdrawal exceeds 10,000 GPD or one million gallons per year. It is not anticipated that significant dewatering efforts would be necessary to install below grade foundations/utilities; however, the Project Proposer is committing to the following mitigation measures before and during construction:

- Complete a pre-construction survey of groundwater elevations. The Project Proposer must report on the status of this survey to the City prior to construction.

- Monitor the groundwater table elevation from on-site wells for the duration of construction. The Project Proposer must report on the status of this monitoring to the City during construction.
- Monitor surface water quality from MDNR Public Watercourse S-002-010-003.4-001 located in the SE corner of the Study Area before and during construction.

If any dewatering activities are required on site, piezometers or shallow wells would be installed within and on the perimeter of the Study Area to monitor groundwater during the temporary construction dewatering process to see if there are any significant (greater than 5 feet sustained for 72 consecutive hours) changes to groundwater levels. Any major non-seasonal fluctuations would result in the ceasing of dewatering operations.

Because the proposed Project does not rely on groundwater extraction and incorporates recharge preserving stormwater practices, the proposed Project is consistent with MDNR groundwater sustainability principles and MPCA water quality protection objectives and would not directly affect groundwater supply. Potential indirect effects related to increased impervious surfaces are mitigated through a conservative, distributed stormwater management strategy designed in accordance with MPCA and MDNR guidance.

As discussed in AUAR Item 7 and 22, roads, parking lots, and buildings absorb and re-emit heat. This can contribute to urban heat island effect. An urban heat island occurs when a city experiences much warmer temperatures than nearby rural areas. The difference in temperature between urban and less-developed rural areas has to do with how well the surfaces in each environment absorb and hold heat, which is also discussed in Item 7. Warming of groundwater has been observed associated with urban development in other parts of Minnesota<sup>29</sup>. Nearby trout streams rely on cold groundwater discharge to sustain trout populations.

The Project Proposer will complete a phased evaluation of groundwater–surface water interaction and related thermal considerations within the Study Area and surrounding area. The purpose of the evaluation is to improve the understanding of existing groundwater and surface-water conditions, assess potential hydraulic and thermal connections between the Project area and nearby coldwater resources, and evaluate how proposed development could influence groundwater discharge and groundwater temperatures. The evaluation will help inform avoidance, minimization, monitoring, and mitigation as part of the final project design and operations.

The evaluation will begin with a review and synthesis of available information relevant to groundwater–surface water interaction and thermal conditions. Information reviewed is anticipated to include regional and site-specific geologic and hydrogeologic data, groundwater elevations and flow patterns, recharge characteristics, surface-water

---

<sup>29</sup> Source: <https://www.sciencedirect.com/science/article/abs/pii/S0022169409004004>

resources, available groundwater and surface-water temperature data, applicable technical studies, and proposed site grading, stormwater management, and development concepts.

Following the desktop review, the Project Proposer will conduct a field investigation to further understand existing groundwater levels, flow directions, and temperatures. This information will be used to develop a conceptual understanding of groundwater flow directions, recharge and discharge areas, groundwater-dependent resources, and the relationships between shallow groundwater, springs, wetlands, and nearby streams. The conceptual evaluation will identify potential pathways by which groundwater may interact with surface waters and provide a framework for assessing potential Project-related changes, if any.

The Project Proposer will then conduct screening-level evaluations to assess potential changes associated with development, including changes in groundwater recharge, potential shifts in groundwater flow directions or discharge patterns, and whether thermal signals in shallow groundwater could plausibly migrate toward nearby surface-water resources. The screening-level analyses will be used to evaluate the potential magnitude of Project-related effects and determine whether additional analysis is warranted.

If appropriate based on the results of the screening-level evaluations, additional numerical modeling may be completed using site-specific information, Project design details, and input obtained through ongoing agency coordination. This adaptive approach is intended to improve the understanding of potential groundwater–surface water interactions and thermal impacts, support project design, and facilitate implementation of mitigation strategies where warranted.

### [Wells](#)

The Minnesota Well Index (MWI) is a public, online database managed by the MDH. It maps and provides detailed records for hundreds of thousands of water wells, soil borings, and environmental testing holes drilled across the state. The MWI database provides basic information about wells and borings, such as location, depth, geology, construction, and static water level. Based on the MDH MWI, there are 11 active wells located within the Study Area and six wells within 0.25 miles of the Study Area (see Table 12, Table 13, Table 14 and Figure 18).

**Table 12: MWI Wells within the AUAR Study Area**

| Well ID Number | Index Status | Well Use | Well Diameter (inches) | Well Depth (feet) |
|----------------|--------------|----------|------------------------|-------------------|
| 527085         | Active       | Domestic | 6                      | 155               |
| 703765         | Active       | Domestic | 6                      | 99                |
| 724051         | Active       | Domestic | 6                      | 92                |
| 798471         | Active       | Domestic | 6                      | 79                |
| 845877         | Active       | Domestic | 6                      | 99                |

Not all private water wells are listed in the MWI database. In addition, the MDH maintains a database of water well records disclosed and registered during real estate property transactions, the Well Disclosure Certificate database, within their Well Management Section that may contain well records not listed in the MWI. Table 13 includes additional wells within the Study Area that were identified from a review of the Well Disclosure Certificate database.

**Table 13: MDH Well Records within the AUAR Study Area**

| Well Disclosure Certificate Number | Number of Wells Disclosed | Physical Status of Well |
|------------------------------------|---------------------------|-------------------------|
| 122038                             | 1                         | In Use                  |
| 329112                             | 1                         | In Use                  |
| 339206                             | 1                         | In Use                  |
| 184082                             | 1                         | In Use                  |
| 403150                             | 1                         | In Use                  |
| 1045211                            | 1                         | In Use                  |
| 469826                             | 1                         | Sealed (H000021985)     |

**Table 14: MWI Wells within 0.25-miles of the Study Area**

| Well ID Number | Index Status | Well Use   | Well Diameter (inches) | Well Depth (feet) |
|----------------|--------------|------------|------------------------|-------------------|
| 111614         | Active       | Domestic   | 6                      | 86                |
| 251881         | Active       | Industrial | 6                      | 152               |
| 251883         | Active       | Industrial | 6                      | 92                |
| 530572         | Active       | Domestic   | 6                      | 47                |
| 541078         | Active       | Domestic   | 6                      | 92                |
| 781718         | Active       | Industrial | 6                      | 52                |

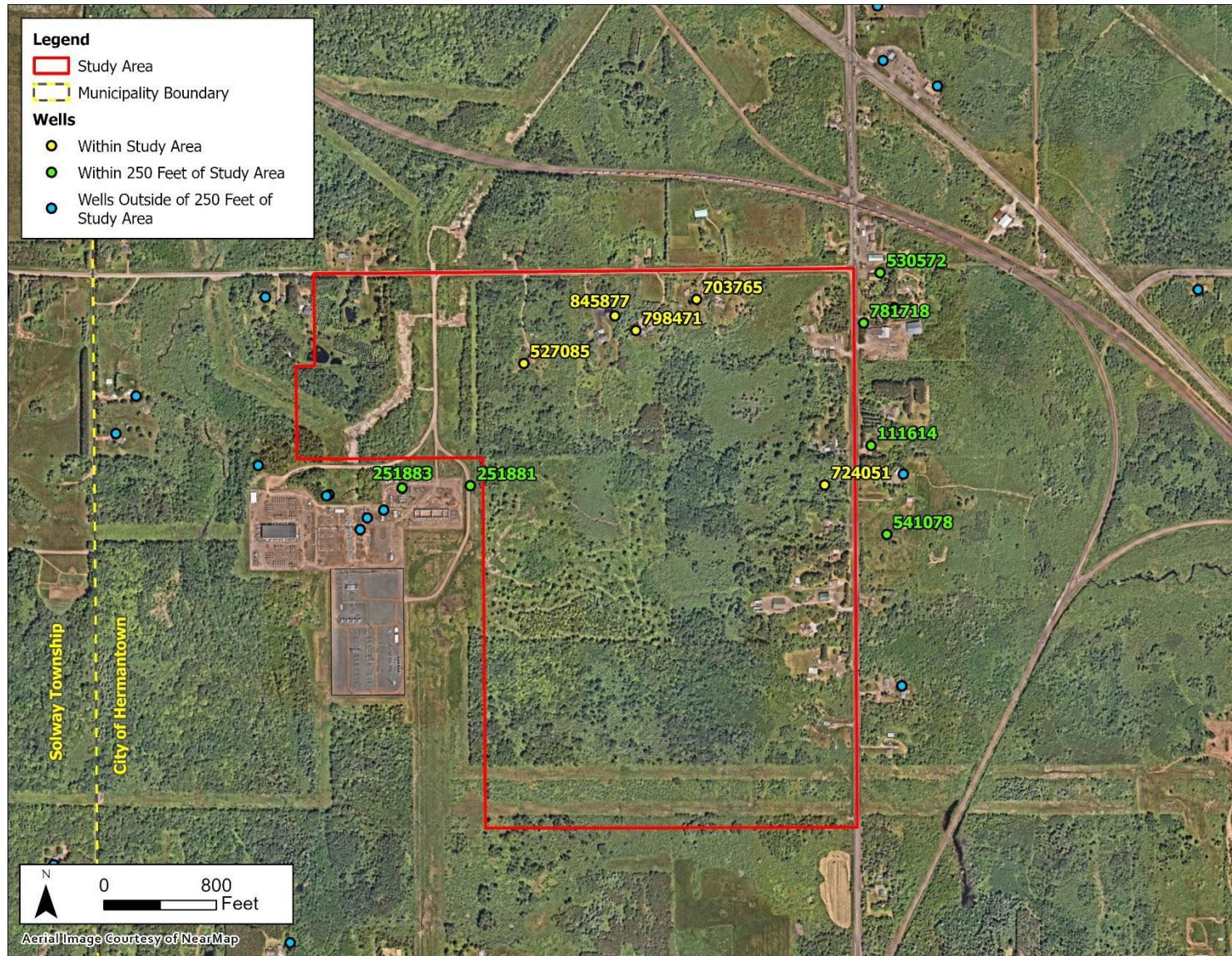
All wells located within the Study Area would be properly sealed by a licensed well contractor prior to development within the Study Area per MPCA and MDH well-sealing requirements.<sup>30</sup> If unidentified wells are found, the MDH Well division would be notified and determine if the well is in service or not. Wells would then be sealed per the MDH well-sealing requirements by a licensed well contractor.

The Study Area is not located within a wellhead protection area or Drinking Water Supply Management Area.

<sup>30</sup> See *Sealing Unused Wells*, MDH

<https://www.health.state.mn.us/communities/environment/water/wells/sealing/abandwel.html> for a discussion of well sealing requirements in Minnesota.

**Figure 18: Groundwater Resources**



**b. Describe effects from project activities on water resources and measures to minimize or mitigate the effects below.**

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

*AUAR Guidance: Observe the following points of guidance in an AUAR:*

- *Only domestic wastewater should be considered in an AUAR—industrial wastewater would be coming from industrial uses that are excluded from review through an AUAR process*
- *Wastewater flows should be estimated by land use subareas of the AUAR area; the basis of flow estimates should be explained*
- *The major sewer system features should be shown on a map and the expected flows should be identified*
- *If not explained under Item 6, the expected staging of the sewer system construction should be described*
- *The relationship of the sewer system extension to the RGU’s comprehensive sewer plan and (for metro area AUARs) to Metropolitan Council regional systems plans, including MUSA expansions, should be discussed. For non-metro area AUARs, the AUAR must discuss the capacity of the RGU’s wastewater treatment system compared to the flows from the AUAR area; any necessary improvements should be described.*
- *If on-site systems will serve part of the AUAR, the guidance in the February 2000 edition of the EAW Guidelines on page 16 regarding item 18b under Residential development should be followed.*

**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.**

Under the proposed Project, the development is expected to generate up to 50,000 gallons per day (GPD) of wastewater, primarily from routine domestic facility uses such as restrooms, break areas, kitchens, and other employee-support spaces. Domestic wastewater combined with discharges of cooling-system water, if any, would not exceed this 50,000 GPD maximum. Utility systems designed to serve the Project would be appropriately sized to safely collect, convey, and treat this demand in accordance with applicable regulatory and environmental standards.

### *Cooling Technologies*

In addition to domestic uses, water may be used as part of data center cooling. Information technology equipment, including the equipment inside a data center, generates heat. Data centers use cooling systems to dissipate or remove heat. These cooling technologies are essential to prevent overheating, which could cause servers to fail or break down earlier than expected. Cooling technologies for data centers are rapidly developing, and their environmental impacts can vary widely.

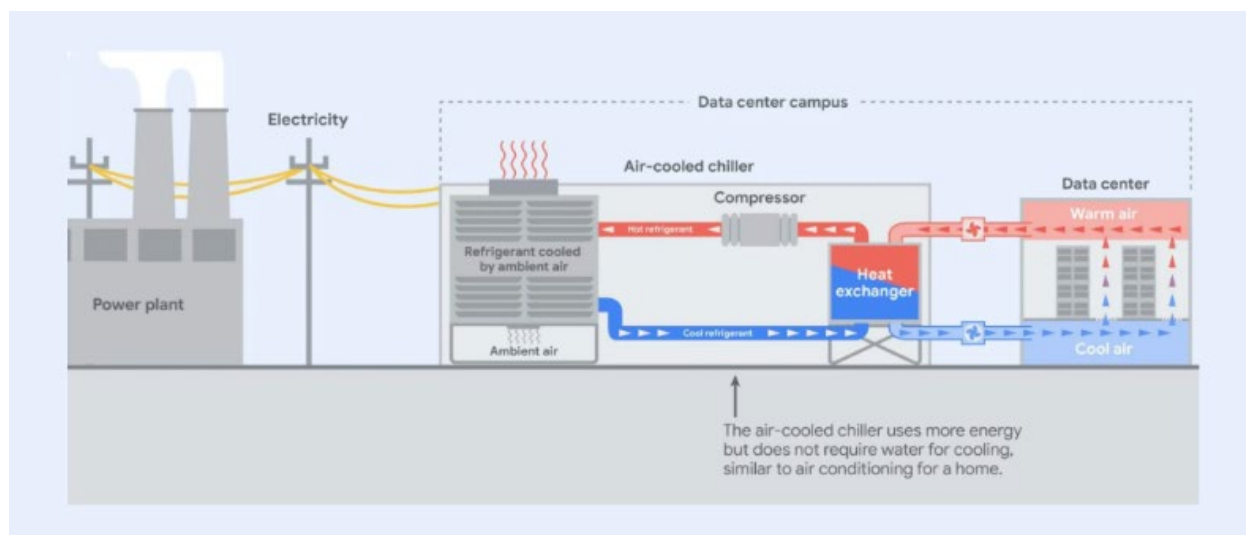
The Project Proposer is considering two types of cooling technology for the Project: a dry cooled or air-cooled system. Both technologies are types of non-evaporative, closed loop systems. If new cooling technologies are developed before the proposed Project construction design is completed, the Project Proposer may consider alternative cooling technologies to further reduce environmental impacts beyond the air-cooled systems and dry cooled systems discussed here.

Dry-cooling and air-cooled chillers are both data center industry-standard cooling technologies that do not evaporate water as part of their process. Both have water as part of the cooling loop, but the water is within a closed system after being built, cleaned and commissioned. Because the loop is closed and sealed, it avoids the daily water discharge associated with traditional evaporative cooling approaches.

As shown on Figure 19, below, air-cooled chillers utilize modern, U.S. Environmental Protection Agency (USEPA)-regulated refrigerants to remove heat from the water loop, similar to a household AC unit, which lastly rejects the heat via fans. Means of cooling with dry-coolers involves the exchange of heat from one closed-loop water system to the other, which then rejects the heat via fans. Both technologies utilize specialized fans to reduce noise emission from the units which are also highly-energy efficient.

Generally, dry-cooler systems perform better in colder climates, and air-cooled systems in hotter climates. However, both technologies are suited for vast ranges of temperatures. Overall energy use between the two is comparable, with air-cooled systems slightly higher.

For a closed-loop cooling system (either dry-cooled or air-cooled chillers), a one-time, initial fill and flush of water would be required at the time of commissioning. The volume of wastewater associated with filling and flushing of the closed-loop cooling system is accounted for in the estimated wastewater demand listed in Table 15. See the graphic below for a flow chart of how a closed-loop cooling system would operate.

**Figure 19: Example of an Air-Cooled, Closed-Loop Cooling System**

To maintain operational efficiency, minimize scale formation, and control biological growth within the closed-loop cooling water system, a chemical treatment program would be implemented. The system would be treated with specialized water treatment formulations comprising of the following primary functional constituents:

- **Corrosion Inhibitors and Metal Passivators:** The system utilizes organic azoles (specifically sodium tolyltriazole), sodium hydroxide, and inorganic sodium silicate to protect yellow metals and mild steel components from oxidation and corrosion.
- **Antimicrobials (Microbiological Control):** To prevent biofouling, algae, and slime accumulation, the system will utilize non-oxidizing biocides. The active organic constituents include quaternary phosphonium salts (tributyl tetradecyl phosphonium chloride) and isothiazolinone compounds (5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one), supported by inert stabilizing salts (magnesium dinitrate and magnesium chloride).

All additives will be managed, stored, and applied in strict accordance with their respective Safety Data Sheets (SDSs) and applicable federal, state, and local environmental regulations. The City of Hermantown enforces chemical and hazardous material storage through the adopted Minnesota State Fire Code and local land use regulations and the project would be subject to the Federal Clean Water Act and the Western Lake Superior Sanitary District (WLSSD) Pretreatment Ordinance, which regulates the controlled maintenance discharges of the closed loop cooling system. Because this is a closed-loop system, environmental exposure is minimized to controlled maintenance events. All chemical additives utilized in the system are strictly PFAS-free (per- and polyfluoroalkyl substances).

The makeup of the wastewater associated with the commissioning process would be coordinated with Western Lake Superior Sanitary District (WLSSD) to ensure it is

acceptable for sanitary sewer discharge or whether it is required to be hauled off-site or otherwise managed separately in accordance with state and federal regulations.

Domestic wastewater would be discharged to the City of Hermantown collection system. This would require the existing infrastructure to be extended approximately 4.5 miles to the Study Area. The Hermantown collection system discharges to the WLSSD. The facility treats an average daily flow of approximately 36 million GPD. In current conditions, the City of Hermantown has approximately 600,000 GPD of domestic wastewater capacity available through their agreement with WLSSD, which is sufficient for the anticipated flows that could be generated in the proposed Project. The proposed Project would produce primarily domestic wastewater of the type typically treated at the Hermantown Collection System, and the Hermantown Collection System has capacity to process the additional discharge from the proposed Project. If a closed loop system is needed for cooling purposes, the make up of the commissioning water and cooling system maintenance discharge water would be coordinated with WLSSD in order to obtain a connection permit and any pretreatment measures would be identified at that time, if applicable.

The following table describes maximum wastewater demand during commissioning and operations. During commissioning, the proposed Project could produce up to 1.7 million gallons of wastewater per building. Discharges of this one time commissioning water would be coordinated with WLSSD to ensure adequate capacity, or hauled off-site or otherwise managed separately in accordance with state and federal regulations. After commissioning, operational discharges would not exceed 50,000 gallons per day. If discharges are required as part of cooling system maintenance, discharges would not exceed 2,000 gallons per month, and would be included within the 50,000 gallon per day limit.

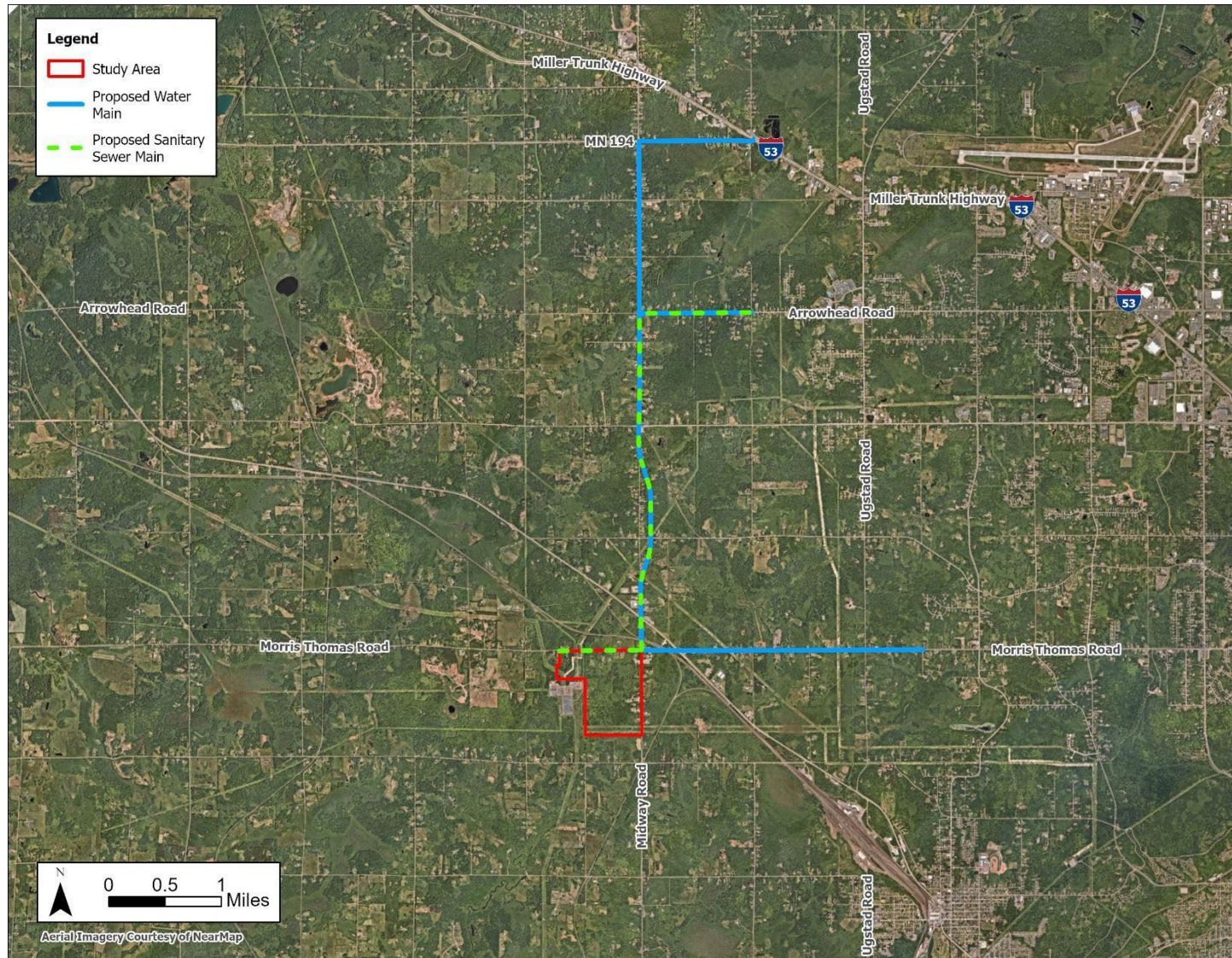
**Table 15: Estimated Wastewater Demand**

| Use                                  | Building Square Footage | Maximum Flow Volume (gallons)                 | Frequency               |
|--------------------------------------|-------------------------|-----------------------------------------------|-------------------------|
| Domestic Wastewater                  | 1,800,000               | 50,000                                        | Daily                   |
| Commissioning Water Discharge        |                         | 1.7 million (per building, up to 4 buildings) | Once                    |
| Cooling System Maintenance Discharge |                         | 2,000 (per building, up to 4 buildings)       | Up to 12 times annually |

#### *Public Infrastructure*

The public infrastructure extension that would be used by the proposed Project had been considered planned on an independent planning trajectory. The utility extension has had the intention of providing growth-inducing public infrastructure designed to enable industrial development in a planned industrial area. The publicly owned infrastructure would be installed to connect and serve the Study Area. It would be designed to support existing and future development, sized well beyond the proposed Project potable and wastewater needs, to advance the goals of the City outlined within the Hermantown 2045 Comprehensive Plan, and is an independent municipal interest for expanding service territory. The proposed Project is resulting in future development of that considered extension. Wastewater conveyance infrastructure (lift stations, force main, and gravity sewer) would be installed and connected to the existing sanitary sewer located near Arrowhead Road and Lindahl Road (see Figure 20 for approximate locations – this is subject to change as designs advance). It is projected that sewer services would be available to 395 parcels along and adjacent to the routes.

**Figure 20: Off-Site Utility Improvements**



- 2) If the wastewater discharge is to a subsurface sewage treatment system (SSTS), describe the system used, the design flow, and suitability of site conditions for such a system.

No SSTS are anticipated within the Study Area for the proposed Project.

- 3) If the wastewater discharge is to surface water, identify the wastewater treatment methods, discharge points, and proposed effluent limitations to mitigation impacts. Discuss any effects to surface or groundwater from wastewater discharges.

No wastewater discharge to surface waters is anticipated for the proposed Project.

- 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.**

*AUAR Guidance: For an AUAR the following additional guidance should be followed in addition to that in EAW Guidelines:*

- *It is expected that an AUAR will have a detailed analysis of stormwater issues*
- *A map of the proposed stormwater management system and of the water bodies that will receive stormwater should be provided*
- *The description of the stormwater systems would identify on-site and “regional” detention ponding and also indicate whether the various ponds will be new water bodies or converted existing ponds or wetlands. Where on-site ponds will be used but have not yet been designed, the discussion should indicate the design standards that will be followed.*

- *If present in or adjoining the AUAR area, the following types of water bodies must be given special analyses:*
  - *Lakes: Within the Twin Cities metro area, a nutrient budget analysis must be prepared for any “priority lake” identified by the Metropolitan Council. Outside of the metro area, lakes needing a nutrient budget analysis must be determined by consultation with the MPCA and DNR staffs.*
  - *Trout streams: If stormwater discharges will enter or affect a trout stream, an evaluation of the impacts on the chemical composition and temperature regime of the stream and the consequent impacts on the trout population (and other species of concern) must be included.*

#### *Environmental Effects*

Stormwater runoff can cause a number of environmental problems. When untreated stormwater drains from manmade locations such as agricultural fields, impervious surfaces, and construction sites, it can carry sediments and/or pollutants that can harm aquatic ecosystems and wildlife. Additionally, as the stormwater is running off the manmade locations, the temperature of the water can rise, affecting nearby surface water and associated plant and animal species.

#### *Existing Conditions*

The AUAR Study Area encompasses an area totaling approximately 278 acres on 26 parcels in the City of Hermantown. The existing Study Area includes single-family residential areas that make up about 11 acres of impervious area, wooded regions and approximately 58 acres of wetlands. About 85 percent of this site drains eastward through wetlands and collects in ephemeral stream segments prior to leaving the site and entering Midway River. The remaining 15 percent of the Study Area, where the construction staging area is planned, drains west towards West Rocky Run. No detention or stormwater treatment facilities are present in existing conditions.

#### *During Construction*

During construction, erosion and sediment control BMPs would be implemented to prevent impacts to aquatic ecosystems and maintain strict conformance with the MPCA NPDES General Construction Stormwater Permit. The Project discharges within one mile of designated special or impaired waters; therefore, additional precautions are required including erosion and sediment controls from items 23.9–23.12 of the MPCA NPDES General Construction Stormwater Permit. The following design/construction standards are to be adhered to during construction:

- Provide necessary precautions to prevent soil erosion, damage to adjacent property, and control runoff to surface water.
- Maintain a minimum 100-foot undisturbed buffer from a special water.

- The erosion and sediment control measures shall be maintained and repaired throughout construction and until such time as the property has been either sodded or a seeded vegetative cover has taken hold.
- Temporary rock entrances are required on every construction site and are required after backfilling of foundation.
- Exposed soil, including stockpiles, shall be stabilized immediately where activity has permanently or temporarily ceased on any portion of this site and would not resume for a period of time exceeding 7 days.
- The last two hundred (200) linear feet of any drainage ditch or swale must be stabilized within 24 hours after connecting to surface water.
- Temporary sedimentation basins must be provided for common drainage areas of 5 or more acres that are to be disturbed at any one time.
- If dewatering is to take place, adequate treatment must be provided so that nuisance conditions would not result from the discharge.
- Design for minimum freeboard of 2 feet above the 100-year high water level, or 1 foot above the emergency overflow elevation whichever is more restrictive.
- Compliance with the NPDES Construction Permit requirements.
- Construct channels, if any, to withstand velocities from a 10-year storm event without erosion.

By strictly adhering to the MPCA Construction Stormwater General Permit requirements, this Project provides adequate mitigation for the downstream *E. coli* impairment. Because *E. coli* bacteria readily adsorb to fine soil particles, the Project's stringent sediment and erosion controls serve as a direct surrogate for bacteria reduction. Implementing accelerated 7-day stabilization timelines, enhanced vegetative buffers, and high-efficiency sediment traps would maximize the capture of clay and silt fractions. Preventing the transport of these fine, sediment-bound pathogens before final discharge ensures that the Project would not contribute to or exacerbate the *E. coli* impairment of the receiving water.

Temporary sedimentation basins used in construction would be able to hold stormwater generated from the site in extreme storm events such as the 100-year storm. By providing an elevated pond volume, this Project would protect nearby properties from flooding and soil erosion.

#### *Post Construction*

The proposed development within the Study Area would require compliance with the stormwater rules and standards of the City of Hermantown, and the NPDES Stormwater Permit for water quality, rate control, erosion control, and maintenance/monitoring.

Overall impervious surface area is proposed to increase to an estimated  $\pm 126$  acres in the post construction conditions. The increase in impervious areas would result in increased runoff volume from the site. The City of Hermantown's stormwater ordinance does not allow the runoff rate to increase. The increase in runoff volume would be

stored and controlled via outlet control structures. To mitigate the volume, the Study Area would be graded to maintain existing drainage patterns with a majority of the stormwater runoff discharging to the east towards Midway River and the northwest construction staging area discharging to the west towards West Rocky Run. To maintain existing drainage patterns, storm sewer would be constructed to collect runoff between buildings and along roadway corridors. The storm sewer would discharge into the onsite constructed stormwater basins that provide attenuation and water quality treatment prior to discharging to the existing drainage paths that leave the site to the east and west. Green Stormwater Infrastructure such as filtration basins are currently planned to be used as the primary treatment. Additional Green Stormwater Infrastructure may be provided throughout the site to further increase the water quality, support retention and provide additional detention.

Post-construction stormwater basins would be able to hold stormwater generated from the site in extreme storm events such as the 100-year storm. By providing an elevated pond volume, this Project would protect nearby properties from flooding and soil erosion.

To minimize the impact of snow melt on the adjacent natural resources, snow would be stockpiled and managed in the proposed landscape. To mitigate the effects of frost heave and ice blockages, the proposed filtration basins utilize engineered sandy soils and deep-rooted plantings. This helps maintain healthy soil porosity, enhancing the basin functionality during spring melt events. The basin storage volume provided on-site would provide excess storage to compensate for the runoff volume expected during spring thawing.

To reduce chloride runoff, the Project would focus on source reduction, deicer and salt storage BMPs, and smart salting techniques. All winter maintenance individuals or contractors for the development must be MPCA Smart Salting Level 1 Certified. Winter maintenance individuals must be responsible for the application of appropriate deicing material at the proper amount and rate; the employment of correct procedures for temperature and conditions; accurate record-keeping and data recordation; and calibration of equipment. If deicer or salt is stored onsite, the storage areas must be covered or indoors and located on impervious surfaces.

Current land uses in the AUAR Study Area do not have any stormwater quantity or quality control, so it is anticipated that incorporating stormwater management under the proposed Project would be an improvement over the existing conditions.

Any future development would also be required to treat the stormwater on site and to comply with state, watershed, local requirements for water quality and rate control, and erosion control at the time of the proposed development.

### *Stormwater Basin Details*

An initial Stormwater Management Plan in **Appendix C** is based on a general plan with area assumptions based on the proposed Project. A site-specific Stormwater Management Plan would be submitted at time of permitting.

A series of eight filtration basins are proposed to be located throughout the Study Area to serve as the primary stormwater management system for the development. Filtration with underdrains is proposed due to the inability to infiltrate with the presence of poor soils and nearby trout streams. The proposed system has three separate “treatment trunklines” that each outlet to the southeastern wetland and eventually discharge through the existing culvert under Midway Road. See **Appendix C** for the stormwater management plans for the basin numbers.

Treatment trunkline A: Basin 1 + Basin 2 + Basin 8 → Southeast wetland

Treatment trunkline B: Basin 3 + Basin 4 → Southeast wetland

Treatment trunkline C: Basin 5 + Basin 6 + Basin 7 → Southeast wetland

Each basin is designed to fully treat the required Water Quality Volume (WQv) for its respective drainage area. Additionally, each basin includes extra storage capacity to manage discharge rates from storm events up to a 100-year, 24-hour storm.

The design aims to efficiently manage water quality treatment and flood control across the drainage areas, while also optimizing the performance and longevity of the filtration media.

The proposed development would be developed in phases, with stormwater ponds constructed during each stage. The initial phase covers approximately 70.6 acres on the western portion of the site. Four basins would be built to manage stormwater for this stage, all routing into the existing southeast wetland.

- Basin 1: ± 1.0-acre basin that serves 20.7 acres of drainage area. Basin 1 discharges to the east and connects with the outlet pipe from Basin 2 before discharging east to an existing wetland.
- Basin 2: ± 1.3-acre basin that serves 8.3 acres of drainage area. Basin 2 discharges to W6 to the east. The Basin 1/Basin 2 combined outlet pipe would have a gate valve to stop flow in case of a spill.
- Basin 3: ± 2.5-acre basin that serves 22.2 acres of drainage area. Basin 3 and Basin 4 would work together to treat and detain the runoff from this drainage area.
- Basin 4: ± 1.8-acre basin that serves 16.8 acres of drainage area and would work with Basin 3 to manage the runoff from the upstream drainage area. The Basin 3/Basin 4 combined outlet pipe would have a gate valve to stop flow in case of a spill.

The full build out (Day-N) scenario includes the development of the remaining 163.4 acres of the northern and eastern portions of the site. Four additional basins would be constructed in the Day-N scenario to manage the treatment and detention of the fully developed site. Each basin would be routed to the existing wetland in the southeast (W7).

- Basin 5:  $\pm$  3.5-acre basin that serves 56.5 acres of drainage area from the north. Basin 5 discharges to the south and connects with the outlet pipe from Basin 6 and Basin 7 before flowing into W7 in the southeast.
- Basin 6:  $\pm$  1.1-acre basin that serves 16.3 acres of drainage area. Basin 6 discharges to the east and connects with the outlet pipe serving Basin 5, 6 and 7 before flowing into W7 in the southeast.
- Basin 7:  $\pm$  3.6-acre basin that serves 37.1 acres of drainage area. Basin 7 discharges to W7 in the southeast. The Basin 5/Basin 6/Basin 7 combined outlet pipe would have a gate valve to stop flow in case of a spill.
- Basin 8:  $\pm$  1.4-acre basin that serves 7.9 acres of drainage area. Basin 8 discharges to the existing wetland in the southeast. Basin 2 outlet would be rerouted to the south and connect with the outlet of Basin 8 in the Day-N scenario. The Basin 1/Basin 2/Basin 8 combined outlet pipe would have a gate valve to stop flow in case of a spill.

Any additional phases for the development would be required to meet the then-current city surface water management plan requirements. Current (as of 5/22/25) city stormwater standards include:

- Provide stormwater treatment for 1 inch of runoff from the new and fully reconstructed impervious surfaces.
- Controlled detention for the 2-year, 10-year, and 100-year, 24-hour rainfall events.
- No net increase in Total Suspended Solids (TSS) and no net increase in Total Phosphorous (TP) on an annual basis when compared to existing conditions.
- Onsite stormwater design would follow the design criteria for discharge to trout streams.
- Additional detailed stormwater analysis would be provided at later stages of the design phase.

Preliminary stormwater basins are shown on Figure 21. A detailed Stormwater Management Plan has been prepared for the City to incorporate the site-specific developments (see **Appendix C**).

### *Rate Attenuation Summary*

The City requires that the runoff rate does not exceed the existing runoff rates for the 2-, 10-, and 100-year, 24-hour storm events. The proposed development achieves this requirement using multi-stage outlet control structures in each pond. Discharge Point #1 is the culvert crossing Midway Road in the northeast corner of the property. Discharge Point #2 is the culvert crossing Midway Road in the southeast corner of the property. The results are listed in Table 16. The construction staging area draining to West Rocky Run would be temporary and would implement construction stormwater management BMPs. See **Appendix C** for detailed HydroCAD analysis in the Stormwater Management Plan.

**Table 16: Rate Attenuation Summary**

|                                | 2 Year<br>(2.70 in.) | 10 Year<br>(4.00 in.) | 100 Year<br>(6.40 in.) |
|--------------------------------|----------------------|-----------------------|------------------------|
| <b>Discharge Point #1 - NE</b> |                      |                       |                        |
| Pre-Development (CFS)          | 16.77                | 21.29                 | 26.51                  |
| Post-Development (CFS)         | 7.24                 | 9.54                  | 12.84                  |
| <b>Discharge Point #2 - SE</b> |                      |                       |                        |
| Pre-Development (CFS)          | 22.02                | 54.84                 | 182.34                 |
| Post-Development (CFS)         | 17.55                | 45.95                 | 75.73                  |

Rate attenuation would be achieved by providing large storage volumes in the onsite basins and safely releasing the treated stormwater through an engineered outlet structure and culvert. These stormwater basins would be able to hold stormwater generated from the site in extreme storm events such as the 100-year storm. By providing an elevated pond volume, this Project would protect nearby properties from flooding and soil erosion.

### *Water Quality Summary*

The City of Hermantown's minimum stormwater management requirements state that new developments must treat stormwater for 9,100 SF per lot plus the stormwater from additional impervious surfaces. Since the development is over 9,100 SF, the treatment volume uses the MPCA guidance of 1" over the proposed impervious surfaces. The treatment would occur in each pond for the corresponding direct drainage area. Biofiltration with underdrain is the treatment method for stormwater throughout the site. Ponding depth is limited to 1.6' to achieve the 24-hour maximum drawdown time assuming a filtration rate of 0.8 in/hr based on the Minnesota stormwater manual. See **Appendix C** for a summary of required water quality volume and proposed filtration volume.

Additionally, the City of Hermantown requires no net increase in TSS and no net increase in TP on an annual basis when compared to existing conditions. The existing and proposed effluent was modeled using MIDS version 4. See the attached SWMP for more discussion on water quality modeling in **Appendix C**.

See Table 17 for a summary of existing and proposed TSS and TP loading on an annual basis.

**Table 17: Water Quality Modeling Results**

|                  | Annual TSS Discharge (lbs) | Annual TO Discharge (lbs) |
|------------------|----------------------------|---------------------------|
| Pre-Development  | 6,952.9                    | 38.27                     |
| Post-Development | 3,687.1                    | 37.82                     |

#### *Receiving Waters Impacts Summary*

The MPCA NPDES Construction Stormwater Permit outlines requirements for discharge to trout streams. The permanent stormwater treatment system must minimize any increase in the temperature of trout streams resulting from the one and two year 24-hour precipitation events. This includes all tributaries of designated trout streams located within the same Public Land Survey System Section. Permittees must incorporate one or more of the following measures, in order of MPCA's preference:

- a) Provide stormwater infiltration or other volume reduction practices.
- b) Filtration systems must discharge all stormwater routed to the system within 24 hours.
- c) Minimize the discharge from connected impervious surfaces by discharging to vegetated areas, or grass swales, and using other non-structural controls.
- d) If ponding is used, the design must include an appropriate combination of measures such as shading, vegetated swale discharge or constructed wetland treatment cells that limit temperature increases. The pond must be designed as a dry pond and should drawdown in 24 hours or less. Additionally, outlet controls would be designed to draw from the bottom of the pond.
- e) Other methods that minimize any increase in the temperature of the trout streams.

The stormwater management system incorporates these mitigation measures to the greatest extent practicable. Each filtration pond is engineered to drain the WQv within 24 hours, utilizing native plantings to enhance evapotranspiration and provide shading during warmer seasons. Rather than discharging directly into the trout stream, the runoff flows into an established wetland with dense vegetation for approximately 1,000 feet minimum, further reducing temperature changes before reaching the river.

According to the MPCA's 2025 Midway River Watershed Protection Study, trout and several other fish and macroinvertebrates in the Midway River Watershed depend on

cold-water temperatures (7.8°C to 20.0°C) for survival. They thrive in clean water with minimal silt, sediment, and low nitrate and phosphate levels. The Project strives to reduce impacts to the Midway River by implementing green infrastructure, such as filtration basins, pretreatment systems, rain gardens, and maintaining 50-foot average (30-foot minimum) vegetative buffers.

#### *Next Steps*

In response to agency comments regarding springs, groundwater, and potential effects on cold-water resources received during the AUAR scoping phase, the Project Proposer is advancing two lines of evaluation:

- Spring inventory and survey
- Groundwater–surface water interaction and thermal evaluation

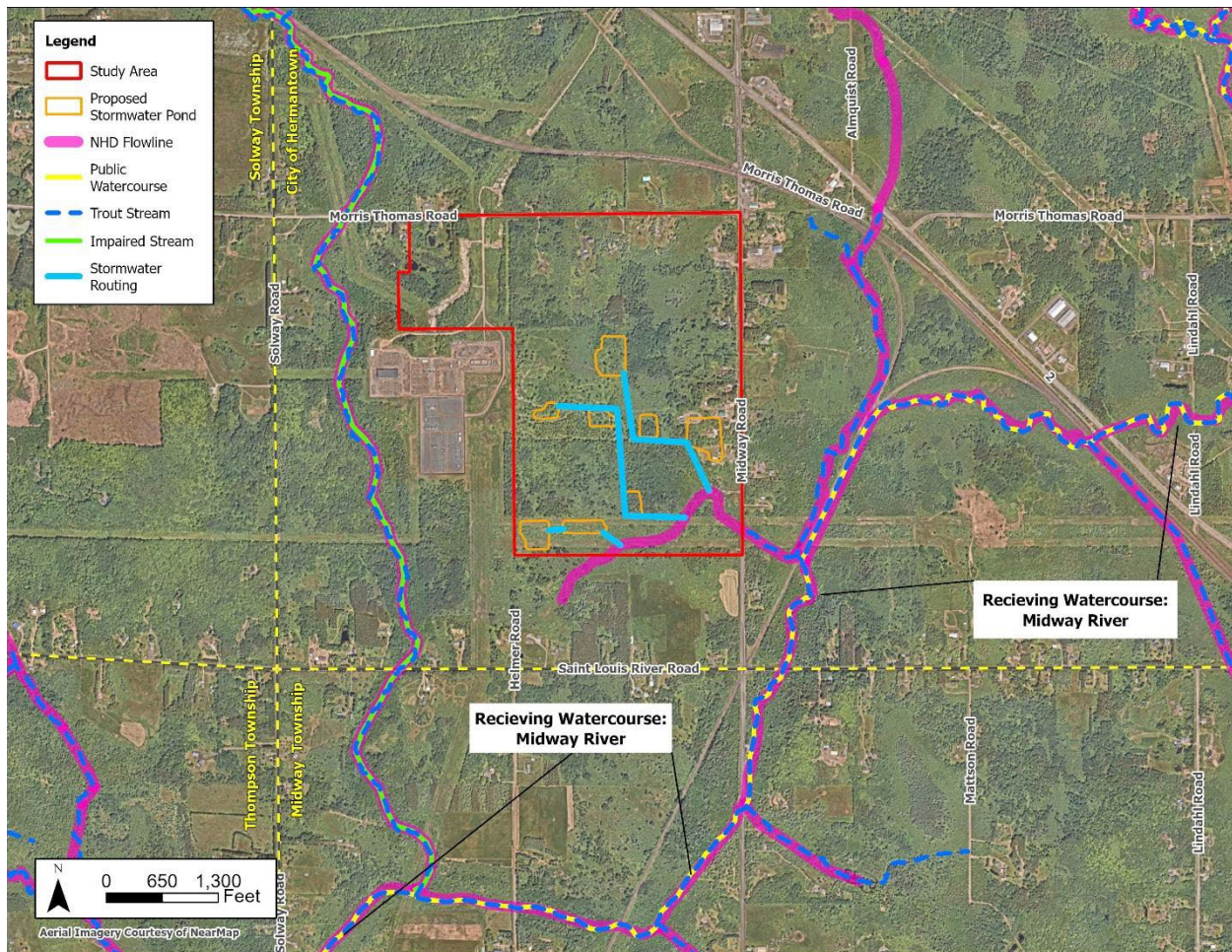
These efforts are intended to work in a coordinated manner, with identification of groundwater discharge features informing the broader understanding of groundwater flow, recharge, and potential connections to nearby streams and aquatic resources.

The intended outcome of the planned evaluation efforts is to:

- Characterize groundwater discharge features (including springs) near the Project
- Provide a framework for evaluating whether changes in shallow groundwater conditions could influence nearby streams and aquatic resources and quantify to what degree, if any, the proposed land use changes affect groundwater recharge rates and offsite hydrology.

These next steps are intended to support a better understanding of potential surface water-groundwater interactions and impacts and to facilitate ongoing agency coordination that may inform potential mitigation strategies, as appropriate. This evaluation would occur in 2026 and would inform final site design and operations.

Figure 21: Proposed Stormwater Management



- 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.

*AUAR Guidance: If the area requires new water supply wells, specific information about that appropriation and its potential impacts on groundwater levels should be given; if groundwater levels would be affected, any impacts resulting on other resources should be addressed.*

The proposed Project would receive water from the City of Hermantown. The City of Hermantown purchases all potable water from the City of Duluth. All potable water is sourced from Lake Superior, treated, and stored in water reservoirs. Lake Superior is the source of potable water for the cities of Hermantown, Duluth, Proctor, and Rice Lake.

Water demand for the proposed Project is estimated to be up to an average of 50,000 GPD and would be supplied from the City of Hermantown. Any water required as part of cooling system maintenance, up to 2,000 gallons up to 12 times annually, would be within the 50,000 gallon daily limit. The water demand outlined in Table 18 remains a conservative upper-bound estimate, inclusive of ongoing operational/domestic water usage (e.g., showers, laundry, kitchen / food preparation, landscaping, fire protection) as well as a temporary, one-time water demand associated with initial commissioning activities, including filling of the closed-loop cooling system. The Project Proposer has coordinated with the City of Hermantown to ensure this proposed water use is in alignment with current water supply capacity. The phasing of water use for commissioning and maintenance would be coordinated with the City of Hermantown for any additional implementation needs or system considerations. No new wells or MDNR water appropriations are needed to supply water to the site.

**Table 18: Estimated Water Demand**

| Use                        | Building Square Footage | Maximum Flow Volume (gallons)                 | Frequency               |
|----------------------------|-------------------------|-----------------------------------------------|-------------------------|
| Domestic Water             | 1,800,000               | 50,000                                        | Daily                   |
| Commissioning Water        |                         | 1.7 million (per building, up to 4 buildings) | Once                    |
| Cooling System Maintenance |                         | 2,000 (per building, up to 4 buildings)       | Up to 12 times annually |

#### *Cooling Technologies*

In addition to domestic uses, water may be used as part of data center cooling. As discussed in greater detail in Section 12.b.i (Wastewater), above, data centers use cooling systems to dissipate or remove heat. These cooling technologies are essential to prevent overheating, which could cause servers to fail or break down earlier than expected. Cooling technologies for data centers are rapidly developing, and their environmental impacts can vary widely.

The Project Proposer is considering two types of cooling technology for the Project, a dry-cooled or air-cooled system, which are both closed-loop systems. For a closed-loop system (either dry or air cooled), commissioning-related water use would occur only during the initial startup and would not represent a recurring long-term operational demand aside from occasional maintenance needs. If new cooling technologies are developed before the proposed Project construction design is completed, the Project Proposer may consider alternative cooling technologies to further reduce environmental impacts beyond the air-cooled systems and closed-loop systems discussed here.

#### *Other Water Use Options Considered*

The Project Proposer evaluated the risk of permitting a water-cooled data center option and the infrastructure upgrades needed and determined that a dry-cooled or air cooled closed-loop system would be more feasible for this site.

Alternative cooling approaches were evaluated to ensure the proposed data center could be delivered responsibly, reliably, and in alignment with Minnesota's regulations. The evaluation examined whether evaporative cooling could be a viable alternative to the dry-cooled or air-cooled systems, including the associated cost, schedule, and environmental implications. Evaporative cooling lowers air temperature by turning hot, dry air into a cool breeze through the natural evaporation of water. Supported by an independent consultant using publicly available data, the analysis considered local conditions that influence infrastructure design and long-term reliability, such as floodplains and wetlands, extreme winter weather, deep frost penetration, and seasonal power constraints. Because evaporative cooling depends heavily on water during the warmest months, when electricity demand is also highest, the team evaluated water and power availability together.

To understand whether water-based cooling could be viable, three potential sources of water were evaluated: groundwater, surface water, and reclaimed water (reuse).

While groundwater can sometimes avoid the need for new surface-water infrastructure, the local aquifers in this region were found to be poorly suited for large-scale cooling. Nearby wells showed very low and inconsistent yields, meaning dozens of wells would be required even to support a small portion of the Project. In addition, known water-quality issues, such as elevated nitrate and arsenic levels, would require additional treatment, increasing both cost and complexity. Taken together, groundwater was determined to be neither practical nor reliable for this Project.

Surface water, including Lake Superior and the St. Louis River, was also evaluated. While these sources offer large volumes of water, they are governed by stringent regulations, including Minnesota's new data center review process and the Great Lakes Compact. Any new withdrawal would require extensive permitting, multi-agency coordination, and in some cases multi-state review. These processes can take many years and does not guarantee approval. Surface-water solutions would also require significant new infrastructure, such as long pipelines and pumping stations, which would need to cross

challenging terrain and metro areas. Because of these regulatory, schedule, and construction risks, surface water was considered a high-uncertainty option.

Reclaimed water, which involves reusing treated wastewater and is generally more aligned with Minnesota's water-conservation goals, was also evaluated. Reclaimed water does not trigger Great Lakes Compact requirements and can be a responsible long-term strategy. The most promising option involved partnering with the regional wastewater treatment provider, which has sufficient flow to support reuse as the source of cooling for the Project. Even at a reduced scale, this approach would take several years to implement and require significant upfront investment.

Based on this assessment of water cooling technology and options, the Project Proposer is proceeding with air-cooled or dry-cooled configurations for the proposed Project, which greatly reduces the water demand needed and would continue to monitor water-reuse opportunities and regulatory changes that could support future water-conservation cooling solutions.

#### *Public Utility Extension*

The proposed Study Area would require the implementation of the considered public utility extension. This extension includes approximately 12 miles of new looped 8-12" watermain to connect the site to municipal utilities. The looped watermain would generally connect adjacent to the Birch Road and Morris Thomas Road intersection and MN-194 / Old Hwy 53 intersection and extend to the Study Area in the southwest corner of the City of Hermantown. With the proposed public water main improvements, additional water supply infrastructure, including additional lift stations and storage would be needed to ensure adequate volume and pressure to service the Study Area.

#### *Dewatering for Construction*

A MDNR Water Appropriation Permit is required if a withdrawal exceeds 10,000 GPD or one million gallons per year. For temporary projects such as construction dewatering, water can be used under the MDNR General Permit for Temporary Appropriation if the water demand is under 50 million gallons and the appropriation lasts less than one year. Additional oversight from MDNR Fisheries and MPCA would be required for a water appropriations permit within five miles of a designated trout stream.

#### **iv. Surface Waters**

- 1) 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.**

Wetlands are areas with hydric (wetland) soils, hydrophilic (water-loving) vegetation, and wetland hydrology (inundated or saturated during much of the growing season). Wetland types include marshes, swamps, bogs, and fens. Wetlands vary widely due to differences in soils, topography, climate, hydrology, water chemistry, vegetation, and other factors.<sup>31</sup>

Wetlands are important to the health of waterways and communities that are downstream. Wetlands can be one source of hydrology in downstream watercourses and water bodies, detain floodwaters, recharge groundwater supplies, remove pollution, and provide fish and wildlife habitat. Wetland health also has economic impacts because of their key role in fishing, hunting, agriculture, and recreation. Large infrastructure projects could temporarily or permanently impact wetlands if these features cannot be avoided through project design. During construction, temporary disturbance of soils and vegetative cover could cause sediment to reach wetlands which could in turn affect wetland functionality.

Wetlands within the Study Area were identified during Level 1 desktop reviews of available resources (USGS topographic maps, NWI, NHD, MDNR Public Waters Inventory, 2-foot contour data, the soil survey for St. Louis County, FEMA Flood Insurance Rate Maps, aerial photography, and antecedent precipitation for a location near the study area), and Level 2 on-site field delineations within the Study Area in 2024 and 2025. The field delineation identified 36 wetlands, 1 wet ditch, 7 ephemeral streams, and 1 erosional feature within the study area (see **Appendix B**).

Some wetland impacts, including draining, filling, cutting, and vegetative removal, are expected as a result of the proposed Project and utility extensions to the Study Area. The Project Proposer and City would be required to comply with all federal, state, and local wetland requirements (maximum impacts within the Study Area are listed in Table 5 and shown on Figure 22). The location and quantity of potential wetland impacts from the utility extensions would require a wetland delineation to identify location, design plans to understand if there are any impacts. If mitigation is needed for either the data center development or the utility extensions, this would include wetland mitigation requirements through the purchase of wetland banking credits and performing a comprehensive Sequencing Analysis in accordance with Minn. R. 8420.0520. The sequencing would evaluate the avoidance, minimization and then mitigation of all wetland impacts proposed for the Project. Wetland mitigation would entail purchasing wetland credits from an approved mitigation bank within the same Bank Service Area (BSA), as required by the BWSR and USACE, as applicable. A wetland bank was identified within the same BSA as the proposed

---

<sup>31</sup> USEPA. 2022. What is a Wetland <https://www.epa.gov/wetlands/what-wetland>

project, and the bank owner confirmed that credits are available for purchase. Wetlands on the southeast portions of the parcel flow would be protected as they provide important ecosystem functions including nutrient infiltration, buffering against drought/flood and rearing habitat for larval fish and macroinvertebrates.

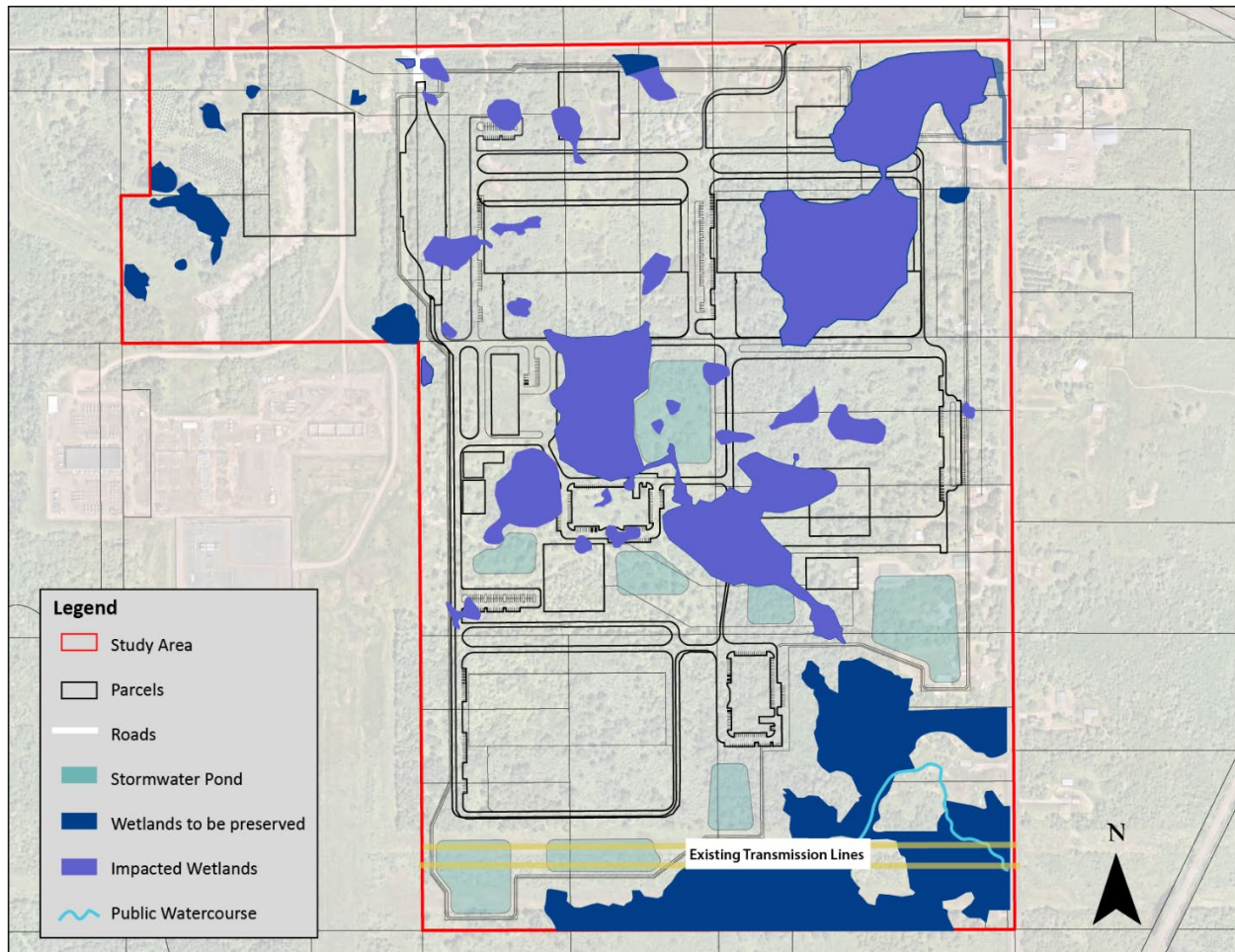
#### *Public Utility Extension Aquatic Resource Review*

The proposed utility extension will require supporting infrastructure, including pump stations and access points, to ensure utilities function as needed. Most construction activities will consist of directional drilling or open trenching to install the utility pipes, although limited grading, including excavation and fill, may be necessary for the construction of pump stations and access points.

If required, directional drilling and open trenching within wetlands would result in temporary wetland impacts. These impacts would be temporary because wetlands would be restored to pre-construction conditions within the applicable regulatory timeframes. Therefore, wetland replacement is not anticipated to mitigate these temporary impacts. If permanent impacts associated with the grading required for the pump stations and access points to regulated wetlands cannot be avoided, wetland replacement would be required, in accordance with applicable regulations.

The proposed utility alignment also crosses several streams, including multiple watercourses designated as MDNR Public Waters. At these crossings, directional drilling will be used to avoid impacts to the course, current, and cross section of the streams. A MDNR Utility Crossing License will be required for each location where the proposed utility crosses a designated public watercourse.

**Figure 22: Potential Wetland Impacts**



- 2) **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 Guidance: Water surface use need only be addressed if the AUAR area would include or adjoin recreational water bodies.*

A MDNR public watercourse is mapped in the southeastern portion of the Study Area. The Project is planning to avoid this area; however, if the design changes, a Public Waters Work permit would be required to be obtained prior to construction activities. Regulatory coordination with the MDNR Hydrologist and Fisheries Specialists would be needed to implement appropriate avoidance and mitigation measures, if required.

The Study Area does not contain and is not adjacent to any recreational water bodies.

### 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 groundwater 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.**

A Phase I Environmental Site Assessment (ESA) was completed in January 2026 by Braun Intertec for the portion of the Study Area where development is planned (see **Appendix D**). A Phase I ESA is an inspection and records review conducted to evaluate a property for potential environmental contamination. There are additional areas located within the Study Area, intended to be used only as temporary staging areas during construction, that were not covered by the Phase I ESA.

The Phase I ESA reviewed database information for the Study Area and surrounding areas from Environmental Risk Information Services, Ltd (ERIS), which compiles a report of records of

facilities that are included on current federal and state environmental regulatory databases. Based on a database review obtained from the ERIS, the following sites were identified within the Study Area:

- Hermantown Industrial AUAR<sup>32</sup>, Morris Thomas Road, Map ID #1. The ERIS report indicates that the Site is listed on the MPCA Agency Interests (AI) database. The MPCA AI tracks sites or places subject to environmental regulations or of environmental interest and is not indicative of a release. The ERIS report plots the listing within the boundaries of the Site and lists the location as Morris Thomas Road, Midway Road and Solway Road. No reported releases were noted. It could not be confirmed if the listing is actually associated with the Site.
- SAP 69-656-011, address unknown, Map ID #2. The ERIS report indicates that the Site is listed on the MPCA AI database as part of an inactive construction stormwater permit. The ERIS report plots the listing along the north side of the Site. Construction stormwater permits are often common with road construction projects and the listing may be associated with road work done along Morris Thomas Drive. Inclusion on the MPCA AI database and the issuance of a construction stormwater permit does not imply a release has occurred. No reported releases were noted. It could not be confirmed if the listing is actually associated with the Site.
- Adolph Tool House, Midway Road and Morris Thomas Road, Map ID #4 (within AUAR Study Area). The ERIS report indicates that a facility mapped off-Site is listed on the historical leak sites (HIST LEAKSITES), MPCA Remediation leak Sites (LST REM SITE), Facility Registry Service/Facility Index (FINDS/FRS) and MPCA AI databases. However, upon review of files maintained by the MPCA, it was revealed that the Adolph Tool House was located on the northeast part of the Site and associated with the address of 3687 Midway Road. A petroleum tank release was reported on September 10, 1991 (Leak #4518) and the MPCA closed the file on November 10, 1995. File closure indicates that the investigation/cleanup of the reported release had been completed to the satisfaction of the MPCA such that no further action was required in response to the release at the time of closure; however, file closure does not necessarily indicate that no contamination remains. According to the ERIS report, contaminated soil remained, groundwater was contaminated but no free product was observed.

The Phase I ESA concluded that one recognized environmental condition (REC) was present in the Study Area. A REC includes “(1) the presence of hazardous substances or petroleum products in, on, or at the subject property due to a release to the environment; (2) the likely presence of hazardous substances or petroleum products in, on, or at the subject property due to a release or likely release to the environment; or (3) the presence of hazardous substances or petroleum products in, on, or at the subject property under conditions that pose a material threat of a future release to the environment”. For the purposes of this definition, “likely” is that

---

<sup>32</sup> Note: A supplemental Phase 1 ESA was completed after the 2025 Hermantown AUAR was published.

which is neither certain nor proved but can be expected or believed by a reasonable observer based on the logic and/or experience of the Environmental Professional (EP), and/or available evidence, as stated in the report to support the opinions given therein. Based on the field reconnaissance and interviews, one Recognized Environmental Conditions was identified within the Study Area, as follows:

- Recognized Environmental Condition (REC)
  - Petroleum Tank Release (Leak #4518, 3687 Midway Road)
    - Petroleum impacted soil and groundwater were documented at the parcel. Approximately 685 cubic yards of petroleum impacted soils were excavated during the removal of one underground storage tank (UST) in September of 1991. The MPCA closed the file in 1995.
    - MPCA's letter to the property owner dated November 14, 1995 notes that the MPCA Tanks and Emergency Response Section (TERS) staff determined that the site investigation and/or cleanup has adequately addressed the petroleum tank release at the site. TERS staff closed the release site file. Closure of the file means that the TERS staff does not require any additional investigation and/or cleanup work at this time or in the foreseeable future. The letter closure does not necessarily mean that all petroleum contamination has been removed from this site. However, the TERS staff has concluded that any remaining contamination, if present, does not appear to pose a threat to public health or the environment.
    - The documented soil and groundwater impacts at the parcel represent a REC for the Site in consideration of the proposed redevelopment of the Site.
    - If petroleum contamination is encountered during future development work, MPCA staff would be notified immediately.

No Controlled Recognized Environmental Conditions (CRECs) or significant data gaps were identified for the Study Area.

Additional considerations were identified during the Phase I ESA that do not currently present themselves as RECs or CRECs but have potential should the following situations be discovered in the future. The following additional considerations were identified during the Phase I ESA:

- The site was historically used for cultivated cropland from at least 1939 to 1952. While crop cultivation likely involved the use of various agricultural chemicals, no evidence could be found that these practices were not in conformance with best practices or any of these chemicals were mixed or stored on site.

- From 1919 through 2019, portions of the site have been developed for residential use. After reviewing available regulatory databases, the residential properties were not suspected or reported of releases of hazardous substances or petroleum products.
- Septic systems are present in association with the dwellings within the Study Area. Small quantities of hazardous substances have the potential to be discharged into these septic systems. Any release of these substances would likely represent a *de minimis* condition based on the anticipated quantity of hazardous substance that could be present in these systems.
- Historical buildings were identified and have since been demolished on site. If future earthwork discovers solid or hazardous waste during development, then additional assessment of the fill soils may be required.
- The adjoining properties are a mixture of wooded and residential land. The government database records review identified several regulated facilities in the vicinity of the Site. The identified regulated facilities are anticipated to be considered *de minimis* conditions.

The MPCA's What's in My Neighborhood database was reviewed to identify potential environmental hazards within the Study Area. According to the review, four sites were present within the Study Area.

- Minnesota Power Inc Arrowhead HVDC – hazardous waste (minimal quality generator), above ground storage tank (AST), active, located at 5818 Morris Thomas Rd.
- Duluth BL MP 6.97 Adolph RP Tracks - construction Stormwater permit, active, mapped on the northern boundary of the study area, address unknown.
- SAP 69-656-011, construction stormwater, inactive, mapped on the northern boundary of the study area, address unknown.
- Adolph Tool House, Petroleum Remediation, Leak Site, inactive, located southwest of Midway Road & Morris Thomas Road intersection, address unknown.

The following considerations for next steps were identified during the Phase I ESA:

- Portions of the Study Area have been developed for residential use since at least 1919 and outbuildings have been historically located on the Study Area that no longer appear to present. The residential use precedes any waste pickup service in the vicinity of the Study Area; therefore, there is a possibility that solid waste could have been historically buried or burned prior to available waste pickup services. In addition, it is unknown if the demolition debris associated with the former outbuildings was buried in the Study Area or hauled away for disposal. There is a potential that buried materials are present at the Site that may require management as solid or hazardous waste if encountered during future earthwork or redevelopment activities. This does not represent a REC at this time; however, if fill soils, which could include demolition debris and other wastes, are encountered during earthwork or redevelopment, then additional assessment of the fill soils may be required to evaluate appropriate management and/or disposal requirements.

- Water wells and septic systems are located on the Study Area. If the wells or septic systems are to be taken out of service, then the wells should be properly sealed and the septic systems should be properly abandoned.
- If the existing buildings are to be demolished, then a hazardous building materials survey should be conducted prior to commencement of those activities to identify the presence of asbestos-containing materials, lead-based paint, or regulated wastes that may require special handling, abatement, or disposal.

The Project Proposer completed a Phase II (ESA) site investigation in June 2026, which concluded that the existing contamination in the Study Area is moderate but localized, primarily associated with residual petroleum contamination in the vicinity of northeast corner of the Study Area. Based on the results of this assessment, a Response Action Plan (RAP) would be needed to provide the procedures for the management of soil and/or groundwater encountered during redevelopment and address general protocols for handling impacted materials. A Construction Contingency Plan (CCP) should be incorporated into the RAP to provide a framework for the identification and management of previously unidentified environmental conditions, consistent with standard industry practices and MPCA guidance. The RAP/CCP should be implemented during construction activities and coordinated with the MPCA, as appropriate, to support compliance with applicable regulatory requirements and manage regulated subsurface materials, including but not limited to:

- Residual soil and groundwater impacts associated with the historical release (Leak #4518) that may be encountered during future subsurface activities within the project area.
  - Soil and groundwater encountered during construction within the areas of identified impacts should be observed and managed in accordance with MPCA guidance, particularly in areas exhibiting staining, odor, or analytical exceedances. Excavated soils should be segregated and characterized, as appropriate, to determine reuse or disposal requirements.
  - Petroleum-related compounds have been identified in soil and groundwater at the Site. In accordance with Minnesota Statute § 115.061, property owners and/or responsible parties may have a duty to notify the Minnesota Duty Officer if previously unreported releases or evidence of a release are encountered during future work.
  - Groundwater encountered during construction should be managed in accordance with applicable state and municipal regulations, including evaluation of handling, discharge, or treatment requirements, if necessary.
- 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 solid waste including source reduction and recycling.**

*AUAR Guidance: Generally, only the estimated total quantity of municipal solid waste generated and information about any recycling or source separation programs of the RGU need to be included.*

#### *Construction Generated Solid Waste*

Construction of the proposed development would generate construction-related waste materials such as wood, packaging, excess materials, and other waste, which would either be recycled or disposed of in the proper facilities in accordance with state regulations and guidelines. The following are additional measures that would be implemented to reduce construction waste:

- Recycle waste paint during construction. Recycling waste paint reduces greenhouse gas (GHG) emissions from raw material sourcing and paint production. If the process of recycling waste paint is less carbon-intensive than the processes required to harvest and produce new paint, recycling results in a net reduction in GHG emissions.
- Recycle general construction waste. Recycling demolished construction material reduces GHGs by displacing new construction materials, thereby reducing the need for new raw material acquisition and manufacturing. If the process of recycling construction materials is less carbon-intensive than the processes required to harvest and produce new construction materials, recycling results in a net reduction in GHG emissions. Using local recycled construction material would also reduce emissions associated with the transportation of new construction materials, which are typically manufactured farther away from a project site. Finally, recycling avoids sending materials to landfills. Wood-based materials decompose in landfills and contribute to methane emissions.

#### *Operation Generated Solid Waste*

Recycling for industrial buildings in the Study Area would be conducted in accordance with the 2016 Recycling Law (Minnesota Statutes Chapter 115A, Section 115A.151 and Section 115A.552). The proposed development would generate new demands on solid waste management and sanitation services provided in the Study Area.

During operation, approximately 2,204 to 5,511 tons per year is anticipated for office/light industrial waste that typically includes paper, plastic, electronic, cardboard, metal, and glass waste. While on-site, waste would be stored in designated bins or dumpsters in storm resistant shelters and any potential hazardous waste would be stored in proper containers as per regulatory guidelines, often in isolated and secure areas to prevent leaks and contamination.

The Project Proposer prides itself on utilizing an industry-leading circular economy and waste diversion program. The Project Proposer is improving its waste diversion rate over time. In 2024, its waste diversion rate was 84 percent. In 2025, it diverted 88% of data center waste. The Project Proposer's internal goal is for all its data centers to be zero waste by 2030.

The Project Proposer relies on UL 2799, the Standard for Environmental Claim Validation Procedure (ECVP) for Zero Waste to Landfill to evaluate whether its data center projects are Zero Waste to Landfill facilities. UL 2799 enables facilities to qualify for a certified claim of Silver if the facility achieves a landfill diversion rate (including waste to energy) of 90% to 94%.

Data centers utilize electronic computer equipment such as hard drives and servers to store, process, and provide digital information to customers<sup>33</sup>. When these hard drives, servers, and other computer and networking equipment reach end-of-life, they are commonly referred to as “electronic waste” or “e-waste.” The volume of e-waste as a percentage of total waste changes over the life of the Project, with e-waste comprising a smaller percentage in the early years of operation when equipment is new. For e-waste, the Project Proposer maintains strict management through its reverse logistics, which is described in its March 2026 report, “Bridging the Gap: Operationalizing Circularity in Data Centers.”<sup>34</sup> All equipment is managed to be reused, remarketed, or recycled, ensuring that no e-waste goes to landfills. Additionally, Google leads the industry in internal reuse, having harvested 8.8 million components for internal use, which contributes significantly to its waste reduction. More information about Google’s Circularity program can be found at <https://datacenters.google/circularity>.

- 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 above or below ground tanks to store petroleum or other materials. Discuss potential environmental effects from accidental spills or releases 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.**

*AUAR Guidance: Not required for an AUAR. Potential locations of storage tanks associated with commercial uses in the AUAR should be identified (e.g., gasoline tanks at service stations).*

#### *Construction Waste*

Any demolition activities must comply with state (MPCA) and federal regulations that require inspection of the structure for hazardous materials such as asbestos, lead based paint, light ballasts, thermostats, stored chemicals, and ozone depleting chemicals prior to demolition.

#### *Operational Waste*

The proposed Project may include backup generators for emergency electricity use. Backup generation specific needs would be further evaluated outside of the AUAR as site planning advances. If more than 50 megawatts (MW) of backup generator capacity is required, the Project Proposer would need to seek a Certificate of Need from the MPUC, which would include completing an EIS. If 25 to 50 MW of backup generator electrical capacity is required, the Project Proposer would need to conduct an EAW through the MPCA. Each of these generators would be installed and maintained in compliance with applicable state regulations for aboveground storage tanks, including:

- New tanks and piping would be designed to applicable industry standards and guidance.

<sup>33</sup> For Google, this digital information includes Google products like Search, Maps, Drive (Docs, Sheets, Slides), YouTube, and more. Google also provides Cloud Services for other companies to host their own websites and digital services.

<sup>34</sup> “Bridging the Gap: Operationalizing Circularity in Data Centers” Accessed at <https://storage.googleapis.com/gweb-mobius-cdn/sustainability/uploads/068ac620670a04dd63db8d8323376a9de3c9ca3d.pdf>.

- Tank upgrades and repairs would follow applicable industry standards.
- Tank owners would clearly label all tanks and piping.
- Underground storage tanks of any size would not be used as above ground storage tanks.

Specific backup generators fuel needs have not yet been defined; however, based on the assumed maximum of 16 backup generators each at 2.75 megawatts, total approximate storage capacity between these belly tanks is 99,800 gallons (maximum capacity), or 82,300 gallons (usable capacity, assumes ~80% of maximum capacity).

If it is needed and stored on site, there is a potential for spilled fuel, which could contaminate soil and water, ending up in the water supply. Storage tanks are subject to USEPA regulations, enforced by the MPCA. Spill prevention should include:

- Proper tank maintenance, including regular monitoring for leaks and corrosion
- Prevention of water from entering tanks
- Ensuring proper labeling of storage tank for product type and capacity to avoid unloading errors and contamination

If the Project Proposer determines that more than 1,000,000 gallons of fuel storage for backup generators is required, a separate EAW would be required for these components of the project per Minnesota Rules 4410.4300.

- 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 wastes including source reduction and recycling.**

*AUAR Guidance: Not required for an AUAR.*

Not applicable.

## **14. FISH, WILDLIFE, PLANT COMMUNITIES, AND SENSITIVE ECOLOGICAL RESOURCES (RARE FEATURES)**

---

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

*AUAR Guidance: The description of fish and wildlife resources should be related to the habitat types depicted on the cover types map. Any differences in impacts between development scenarios should be highlighted in the discussion.*

There are no MDNR designated Native Plant Communities, Sites of Biodiversity Significance, or Regionally Significant Ecological Areas within the Study Area. Most of the central portion of the Study Area is currently mixed forest, with areas of deciduous forest, boreal forest, grassland, and wetlands. Forest, grassland, and wetlands provide habitat for wildlife. Wildlife that can be

found within the Study Area includes birds, small to large mammals, reptiles, and insects. While some areas are developed (several residences are located along the northern and eastern perimeter of the Study Area, and an industrial area with impervious surface is located in the western portion of the Study Area), the majority of the Study Area could provide suitable habitat for wildlife. The remaining portions of the Study Area are largely forested areas scattered with wetland and grassland. The west-central forested portion of the Study Area exhibits evidence of recent logging.

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

*AUAR Guidance: For an AUAR, prior consultation with the DNR Division of Ecological Resources for information about reports of rare plant and animal species in the vicinity is required. Include the reference numbers called for on the EAW form in the AUAR and include the DNR's response letter. If such consultation indicates the need, an on-site habitat survey for rare species in the appropriate portions of the AUAR area is required. Areas of on-site surveys should be depicted on a map, as should any "protection zones" established as a result.*

Kimley-Horn conducted a field species and habitat review for the Study Area in September and October of 2024 and June and September of 2025. Based on a review of the habitat located within the Study Area, and consultation results from the USFWS and the MDNR, federal- and state-listed threatened and endangered species were identified for their potential to be affected by this Project. These species are discussed in detail below.

#### *State-Listed Species*

Kimley-Horn reviewed the Natural Heritage Information System data in January 2026 per license agreement LA-2024-006 for state-listed species within one mile of the Project Study Area. The database includes known occurrences of any state endangered, threatened, or special concern listed species. One state-listed species, the American goshawk (*Astur atricapillus*), was identified within one mile of the Study Area. The identification of this species is consistent with the Natural Heritage Review received from the MDNR (see letter in **Appendix E**). Potential impacts to wildlife habitat, federally listed species, and state-listed species are discussed below.

#### **American goshawk**

There is a record for the American goshawk, a state-listed species of special concern, located within one mile of the Study Area. This species of bird prefers large tracts of mature and older upland forest. Preferred cover types for hunting include aspen, paper birch, pine, and spruce forests, and nesting areas tend to have taller and larger diameter trees and fewer understory trees than hunting areas.

### *State-Watchlist Species*

Through communication with MDNR, a watchlist species, the clustered bur-reed (*Sparganium glomeratum*), was identified as having been previously observed near a constructed wetland on the western portion of the Study Area. The plant and fungi watchlist is maintained by the MDNR and includes native species that may require greater conservation efforts in Minnesota. Unlike the state-and federally-listed species discussed in this section, watchlist species have no legal status.

#### **Clustered bur-reed**

The clustered bur reed is a perennial native plant species that can be found throughout the northeastern portion of Minnesota. The species is generally observed to be one to two feet tall and generally inhabits cool, shallow water marshes and swamp edges, floating mats, fens, wet depressions, wet ditches, wet meadows, and ponds. Round flowers are visible during summer months in a spike-like arrangement at the top of the stem, with separate male and female flower heads on the same plant. Leaves are alternate and can extend up to 20 inches.

### *Federally-Listed Species*

The USFWS Service Information for Planning and Conservation (IPaC) tool (see **Appendix E**) was used to identify federally-listed species that may be present in the Study Area. This review identified two federally-listed threatened species, the Canada lynx (*Lynx canadensis*) and gray wolf (*Canis lupus*). This review also identified the proposed threatened monarch butterfly (*Danaus plexippus*) and proposed endangered Suckley's cuckoo bumble bee (*Bombus suckley*).

#### **Canada lynx**

The Canada lynx (*Lynx canadensis*) was classified as threatened in 2000. The Canada lynx generally inhabits boreal forested ecosystems but also extends south to subalpine forests in the western United States and boreal/hardwood transitional zones in the eastern United States. Lynx are most commonly found in areas that receive heavy snowfall and support populations of snowshoe hares, the species primary prey. The Project may include disturbance to forest and grassland ecosystems.

#### **Gray wolf**

The gray wolf (*Canis Lupus*) was classified as threatened in 1978. Gray wolves are found in a wide range of habitats including temperate forests and grasslands. Wolves' habitat depends on the availability of prey such as moose, elk, deer, and caribou. The Project may include disturbance to forest and grassland ecosystems.

#### **Monarch butterfly**

The monarch butterfly (*Danaus plexippus*) is classified as a proposed threatened species by the USFWS. The preferred habitat for this species is unmanicured grasslands, where milkweed and flowers are present. According to the USFWS, there are many potential reasons for the butterfly's decline, including habitat loss at breeding and overwintering sites, disease,

pesticides, logging at overwintering sites, and climate change. The Project may include disturbance to grassland ecosystems.

#### **Suckley's cuckoo bumble bee**

Suckley's cuckoo bumble bee (*Bombus suckleyi*) is listed as proposed endangered. Suckley's cuckoo bumble bee is typically found throughout northern America in prairies, grasslands, and meadows. It is considered a parasitic bee and lives primarily of nests of western bumblebees, which are typically found underground cavities but can also be seen in stumps and logs as well.

#### *Other Considerations*

The DNR-provided NHIS letter in **Appendix E** states "Even if there are no bat records listed .. all of Minnesota's bats, including the federally endangered northern long-eared bat (NLEB) (*Myotis septentrionalis*), can be found throughout Minnesota. The IPaC nor NHIS data identified bats known to occur within or near the study area. Female NLEB rear their pups in maternity roosting colonies, typically trees, from June 1 to August 15. During this time pups cannot fly.

- c. **Discuss how the identified fish, wildlife, plant communities, rare features, and ecosystems may be affected by the project. 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.**

#### *Invasive Species*

Invasive species are a major cause of biodiversity loss and are considered biological pollutants by the MDNR. Invasive species can be moved on construction equipment, landscaping equipment, and other debris.

#### *Stormwater*

Stormwater run-off can cause a number of environmental problems. When stormwater drains off a construction site, it can carry sediment and pollutants that harm lakes, rivers, streams, and wetlands which in turn may harm wildlife.

#### *Tree Removal*

The Study Area contains approximately 132 acres of forested areas which provide an important natural resource in Minnesota. Forest clearing and tree removal creates a variety of environmental impacts including habitat destruction, biodiversity impairment, soil erosion, and loss of carbon sinks.

#### *Impacts to Protected Species and Habitats: State-Listed Species*

##### **American goshawk**

Based on the known preferred habitat for the American goshawk, as well as the suitable habitat presence identified during the site visit, the species has the potential to occur within forested areas observed within the Study Area. Given the proposed development and based on consultation with the MDNR, significant impacts to the American goshawk are not anticipated.

### *Impacts to State-Watchlist Species*

#### **Clustered bur-reed**

Based on the known preferred habitat for the clustered bur-reed, as well as the suitable habitat presence identified during the site visit, the species has the potential to occur within wetlands observed within the Study Area. The sighting of the clustered bur-reed identified by MDNR within the Study Area is not located within the area anticipated to be impacted by the proposed Project. Given the proposed development and based on consultation with the MDNR, impacts to the clustered bur-reed are not anticipated.

### *Impacts to Protected Species and Habitats: Federally-Listed Species*

#### **Canada lynx**

Suitable habitat was identified throughout the Study Area for the Canada lynx. However, portions of the Study Area are known to be disturbed or developed. Due to the generalist nature of the Canada lynx, and because higher quality preferred suitable habitat (contiguous, undisturbed boreal forests) is present adjacent to the Study Area, it is unlikely for the Canada lynx to be impacted by the proposed Project.

#### **Gray wolf**

Suitable habitat was identified throughout the Study Area for the gray wolf. However, portions of the Study Area are known to be disturbed or developed. Due to the generalist nature of the gray wolf and because higher quality preferred suitable habitat (contiguous, undisturbed boreal forests) is present adjacent to the Study Area, it is unlikely for the gray wolf to be impacted by the proposed Project.

#### **Monarch butterfly**

Suitable habitat was identified throughout the Study Area for the monarch butterfly. The proposed Project may affect vegetation that could harbor monarch butterflies and/or suitable monarch habitat; however, ground and vegetation disturbing activities are not expected to appreciably diminish the quality or extent of available suitable habitat within the Project Study Area. No significant impacts to the monarch butterfly are anticipated.

#### **Suckley's cuckoo bumble bee**

Suitable habitat was identified throughout the Study Area for the Suckley's cuckoo bumble bee. The proposed Project may affect vegetation that could harbor Suckley's cuckoo bumble bee and/or suitable bee habitat; however, ground and vegetation disturbing activities are not expected to appreciably diminish the quality or extent of available suitable habitat within the Project Study Area. No significant impacts to the Suckley's cuckoo bumble bee are anticipated.

### *Impacts to NLEB*

Suitable habitat for bats was identified within the study area. Based on USFWS and MnDNR data, it is unlikely for bats to inhabit the study area.

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

A Natural Heritage Review request for MDNR concurrence should be submitted on a yearly basis to stay up to date on protected species mitigation as individual projects are planned and pursued with the AUAR footprint. The mitigation identified below is current as of this 2026 AUAR and MDNR correspondence in **Appendix E**.

*State-Listed Species*

**American goshawk**

No specific mitigation requirements were required during consultation with the MDNR. While not required, the MDNR did identify voluntary conservation measures including limiting or avoiding impacts to wooded areas when possible and limiting or avoiding tree impacts during April through July, which is the goshawk nesting season.

*State Watchlist Species*

**Clustered bur-reed**

No specific mitigation requirements were identified during consultation with the MDNR.

*Federally-Listed Species*

**Canada lynx**

No avoidance or minimization measures were identified for the Canada lynx because no impacts to the species are anticipated.

**Gray wolf**

No avoidance or minimization measures were identified for the gray wolf because no impacts to the species are anticipated.

**Monarch butterfly**

The monarch butterfly is listed as proposed threatened and therefore does not receive protections under the ESA; however, reseeding disturbed grasslands with a pollinator friendly seed mix is recommended to avoid potential impacts to the monarch butterfly.

**Suckley's cuckoo bumble bee**

Suckley's cuckoo bumble bee is listed as proposed threatened and therefore does not receive protections under the ESA, however, reseeding disturbed grasslands with native seed mix is recommended to avoid potential impacts to the Suckley's cuckoo bumble bee.

*Northern long-eared bat*

While not required tree clearing will be avoided during NLEB pup season, which is June 1 to August 15.

*Migratory Birds*

The Migratory Bird Treaty Act (MBTA) prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by USFWS. USFWS has the responsibility under the MBTA to prevent the mortality of migratory birds and provide recommendations to mitigate or reduce potential impacts to migratory birds, such as initiating clearing of forested habitats outside of the nesting season (generally March 1 to August 31) or requiring nest surveys to be conducted prior to clearing or other construction related activities to avoid injury to eggs or nestlings.

*Bald and Golden Eagles*

According to the USFWS, the Bald and Golden Eagle Protection Act (BGEPA) prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" bald eagles, including their parts, nests, or eggs. In addition to immediate impacts, this definition also covers impacts that result from human induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle's return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death or nest abandonment. MnDNR NHIS data did not note any Bald or Golden Eagles known to occur within the Study Area. A stick nest survey was completed in 2024 for Bald and Golden Eagles and no nests were observed.

*Invasive Species*

State requirements necessitate the control and spread of state listed noxious weeds and/or invasive weeds if encountered prior to construction. Disturbed areas would be reestablished using appropriate native and stabilization seed mixes. Methods to avoid spreading noxious weeds and/or invasive species would be incorporated into Project specifications (and/or SWPPP when developed). According to the MDNR, some methods that can prevent the spread of invasive species during construction include:

- Inspecting construction equipment and removing any visible plant, seeds, mud, dirt clods, and animals when arriving and leaving a site.
- Using certified weed-free products such as weed-free seed or hay whenever possible.
- Using mulch, soil, gravel, etc., that is free of invasive species whenever possible.
- Inspecting soil and plant material during planting for signs of invasive species and removing or destroying the invasive species or the plant and associated soil if the

invasive species cannot be separated out.

#### *Tree Removal*

Tree removal will be avoided June 1 to August 15 to avoid potential impacts to migratory birds and the NLEB. Although tree removal would be required for development, some existing trees may be preserved in areas around the perimeter of the property. Tree replacement would be conducted as required by the city. Tree removal may also be conducted for diseased trees such as ash trees displaying Emerald Ash Borer.

#### *Stormwater*

The proposed Project includes stormwater management and treatment of all stormwater runoff within the AUAR Study Area. See Item 12bii for more information on stormwater mitigation.

#### *Lighting*

Animals depend on the daily cycle of light and dark for behaviors such as hunting, migrating, sleeping, and protection from predators. In addition to the undesirable effects of upward facing lighting, the hue of lights can also affect wildlife. LED lighting has become increasingly popular due to its efficiency and long lifespan. However, these bright lights tend to emit blue light, which can be harmful to birds, insects, and fish. For this reason, MDNR often recommends that projects using LED luminaries follow the MnDOT Approved Products for luminaries, which limits the uplight rating to 0. The Project Proposer would follow guidance from the USFWS<sup>35</sup> to avoid blue light, uplight, and backlight to the extent practicable.

## **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 Minnesota 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.**

*AUAR Guidance: For an AUAR, contact with the State Historic Preservation Office and State Archeologist is required to determine whether there are areas of potential impacts to these resources. If any exist, an appropriate site survey of high probability areas is needed to address the issue in more detail. The mitigation plan must include mitigation for any impacts identified.*

A Phase 1A Cultural Resource Literature Review was conducted to identify previously recorded cultural resources (archaeological sites and historic structures) within the Study Area and one-mile buffer surrounding the Study Area (see **Appendix F**). The review identified one previously recorded archaeological site outside of the Study Area but within a mile of it (21SL1274). Archaeological site 21SL1274 is a post-contact artifact scatter / structural ruin and is unevaluated for inclusion within

<sup>35</sup> More about USFWS recommendations on lighting is available at <https://www.fws.gov/story/threats-birds-collisions-nighttime-lighting#:~:text=Turn%20off%20lights%20that%20face,emitted%20above%20the%20horizontal%20plane.>

the National Register of Historic Places (NRHP). Additionally, six previously recorded architectural resources were identified outside the Study Area (Table 19). One resource is eligible for the NRHP, three resources are unevaluated for the NRHP, and one resource is not eligible for the NRHP. None of these resources are located within the Study Area.

**Table 19: Historic Properties**

| Location                                                                                                    | Property Name                                                                                        | National Register Listing Status | Distance from Study Area               |
|-------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|----------------------------------|----------------------------------------|
| Lindahl Road over Midway River                                                                              | Bridge 88790                                                                                         | Unevaluated                      | 1 mile west of Study Area              |
| 5513 Highway 2                                                                                              | Parrott's Auto Shop                                                                                  | Not Eligible                     | 0.9 miles west of the Study Area       |
| Stark Junction Road over Midway River                                                                       | Bridge 88789                                                                                         | Unevaluated                      | 0.5 miles south of Study Area          |
| Trunk Highway 2 from the Wisconsin state line in Duluth to the North Dakota state line in East Grand Forks  | Trunk Highway 2                                                                                      | Unevaluated                      | 1 mile northwest of Study Area         |
| Extends from the Spirit Lake shoreline between 63rd Avenue West and approximately 75th Avenue West          | Spirit Lake Transfer Railway Company/Duluth Missabe and Iron Range Railway Company                   | Unevaluated                      | 0.12 miles southeast of the Study Area |
| Extends from the Mesabi Iron Range in northeastern Minnesota to the Duluth–Superior harbor on Lake Superior | Duluth Missabe and Northern Railway Company/Duluth Missabe and Iron Range Railway Company: Main Line | Not Eligible                     | 0.1 miles northeast of the Study Area  |

A preliminary assessment of archaeological resource potential within the proposed Project area revealed 75.3 acres of the Study Area identified as areas of interest may have a high potential for significant cultural resources. Therefore, a Phase I archaeological survey was conducted for the areas of high potential for this Project (see **Appendix F**). Due to the high levels of disturbance or environmental conditions (e.g. areas situated within wetlands, not near permanent water sources, or known cultural resources), the remaining 207.9 acres of the Study Area were evaluated to have a low archaeological potential for cultural resources and were not surveyed.

Five newly recorded post-contact archaeological sites were observed and recorded during the archaeological survey of the Study Area. After discussions with Cultural Monitors from the Fond du Lac Band of Lake Superior Chippewa, and cross-referencing with historic literature review data, it is

the professional recommendation of In Situ (the cultural resources consultant) that all five of the newly recorded archaeological sites are recommended as not eligible for the NRHP. The reports and findings were provided to the Minnesota State Historic Preservation Office (MnSHPO) and they concurred with these findings (see letter in **Appendix F**). Therefore, a finding of No Historic Properties Affected was recommended for the Study Area. Although no historic properties were identified, an Inadvertent Discovery Plan is recommended to be developed and followed during all ground-disturbing construction activities associated with development.

#### *Tribal Coordination*

The City and the Project Proposer acknowledge that the Proposed Project is within the 1854 Ceded Treaty of LaPointe's covered territory. This treaty preserved Tribes' usufructuary rights—"[t]he privilege of hunting, fishing, and gathering the wild rice, upon the lands, the rivers and the lakes included in the territory ceded ...." Generally, usufructuary rights do not extend to private lands such as the Study Area.

Tribal coordination began during the 2025 AUAR process and has continued with this Updated AUAR. Below is a summary of past and upcoming coordination as of June 2026.

- Project Proposer has engaged the Fond du Lac Resource Manager to have tribal participation with the Archeological and Cultural Resources Survey for the Study Area. That coordination occurred in fall 2025 and included ~4 weeks of on-site shovel testing.
- Project Proposer met with the Fond du Lac Reservation Business Committee in fall 2025 to introduce the Project what it entails and again in winter 2026 to share a schedule/project update and discuss ongoing coordination about the Project.
- The Project Proposer will be engaging the Fond du Lac Resource Management on the upcoming cultural resources survey work for the public improvements Project for the water and sewer extensions in summer 2026.
- The Project Proposer will continue coordination with Tribes that have expressed interest in, or have cultural affiliation with, the Study Area throughout the remainder of the Project development including Fond du Lac, 1854 Treaty Authority: Grand Portage and Bois Forte Bands.
- Continued coordination is recommended to ensure that Tribal concerns are addressed during Project implementation and that Tribes are notified in a timely manner of any unanticipated discoveries, particularly those of potential cultural or religious significance.

## 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 Guidance: Any impacts on scenic views and vistas present in the AUAR should be addressed. This would include both direct physical impacts and impacts on visual quality or integrity. EAW Guidelines contains a list of possible scenic resources.*

*If any non-routine visual impacts would occur from the anticipated development, this should be discussed here along with appropriate mitigation.*

The Study Area and adjacent uses include existing industrial, single-family residential, and undeveloped forested land that is not near any unique designated scenic views or vistas. Any development of these lands would have an impact on the visual look of a property.

Viewer sensitivity is an individual's interest or concern for the quality of a viewshed and varies depending upon the activity viewers are engaged in, their values and expectations related to the viewshed, and their level of concern for potential changes to the viewshed. High viewer sensitivity is generally associated with individuals engaged in recreational activities; traveling to scenic sites for pleasure and to or from recreational, protected, natural, cultural, or historic areas; or experiencing viewshed from resorts, road-side pull-outs, or residences. Residents have a higher sensitivity to potential aesthetic impacts than temporary observers. Low viewer sensitivity is generally associated with individual commuting, working, or passing through an area.

Viewer exposure refers to variables associated with observing a viewshed, and can include the number of viewers, frequency and duration of views, and view location. For example, a high exposure viewshed would be observed frequently by large numbers of people. These variables, as well as other factors such as viewing angle or time of day, affect the aesthetic impact.

There are 18 residences immediately adjacent to the Study Area. For residents near the Study Area, aesthetic impacts may be moderate to significant without mitigation.

The proposed Project would convert approximately 126 acres of woodland, grassland/landscaping, and wetland acres to an industrial use. There are other visible existing infrastructure features in the landscape, including the Arrowhead Substation, the Duluth, Missabe, and Iron Range Railroad, U.S. Highway 2, transmission lines, roadways, and gravel roads. How an individual viewer perceives the change from a vacant area adjacent to infrastructure to a light industrial use would depend on how the viewer perceives the Project. A viewer may perceive the change as expanding business and light industrial development in an area designated for such growth, or may see the Project as replacing a natural area with a light industrial use.

For residents outside the Project vicinity and for others with low viewer sensitivity, such as travelers on surrounding roads, aesthetic impacts are anticipated to be minimal. For these viewers, the Project would be relatively difficult to see due to fencing and vegetation or would only be visible for

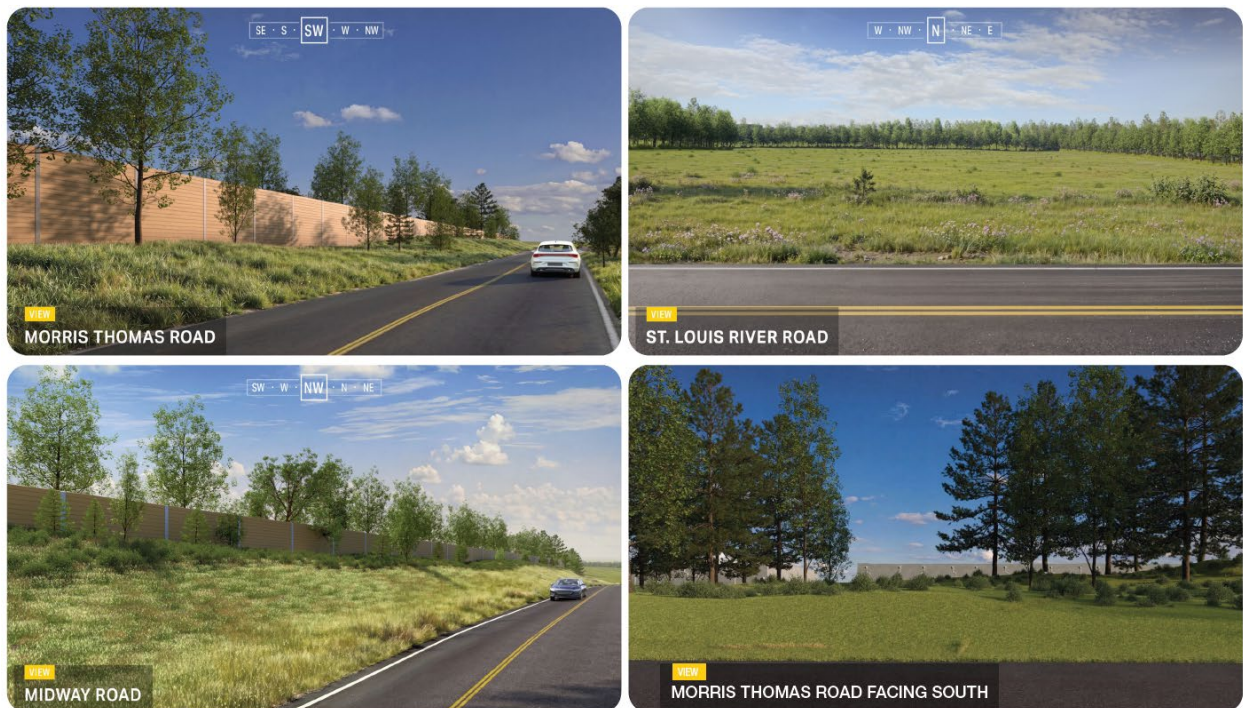
a very short period. However, the Project plans to keep perimeter vegetation intact wherever possible to minimize any changes in viewshed.

The Mitigation Plan includes screening measures for the proposed development to mitigate against conflicts with adjacent land use conflicts, as shown in **Appendix G**, and the following measures are proposed to be implemented:

- **Vegetation:** Coniferous trees and shrubs are proposed to shield views of the Study Area from the surrounding roadways and residential properties. Vegetation growth modeling was conducted, and views of the site are anticipated to diminish after 10 years of growth.
- **Screening walls:** Where feasible, screening walls would also be constructed to shield views of the site even when vegetation has not reached 10 years of growth.
- **Grading:** Selective site grading would be conducted where possible to ensure that the grade of the site as compared to the surrounding area is advantageous for site screening.

Site grading and vegetation planting would be implemented in conjunction with each other where feasible. Along the eastern boundary of the site, vegetated berms would be constructed to maximize the effectiveness of site screening. Along the northern boundary of the site, grade elevations along Morris Thomas Road would be higher than elevations on site. Because of this, vegetation would be planted closer to the roadway surface to maximize the effectiveness of site screening. See Figure 23 for concept visualizations to show how this would be applied.

**Figure 23: Concept Building and Landscaping Visualizations**



**DRAFT** Concept in Development

A site lighting and photometric plan was developed for the proposed Project (see **Appendix G**). Pole and wall mounted LED lighting fixtures were distributed throughout the site to illuminate equipment yards, data centers, substations, office buildings, the site entrance, and the security fence. On the security fence, lights were placed every 150 feet along the fence line and light fixtures mounted at a height of 30 feet. This spacing and height of perimeter lighting is consistent with the security needs of a data center development; however, the lighting design would utilize down-lighting, fully shielded cut-off fixtures, and would fully comply with the City's lighting ordinance. Specifically, the lighting plan for the data center campus has been designed to:

- Light fixtures directed downward and away from property lines using full-cutoff, downward-facing fixtures (see Figure 24)
- Avoid light spill and glare onto neighboring properties
- Avoid excessive skyglow

Lighting would be focused on safety and security, not illumination of building facades so minimal light pollution would be generated. The pole heights would be a maximum of 30 feet, and the lighting design would have zero foot-candles of light at property lines, meaning the lighting from the development is so low at the edge of the property that it is zero, meaning no light coming off the site. There would be an average light in parking areas of 1-2 foot-candles. For comparison purposes:

- Outdoor Vehicle Sales Lots: 10-40 foot-candles
- Commercial Parking Lots & Garages: 1-5 foot-candles
- Full Moon in Rural Area: 0.01 foot-candles

Development would conform with the city ordinances for building height, building form, and lighting intensity to avoid impacts to neighboring properties and species. No significant visual impacts are anticipated. Guidance from the USFWS to minimize blue light (see Figure 25 for what is proposed to be used), uplight, and backlight would be adhered to the extent practicable.

Figure 24: Comparison of Cut Off Lighting Fixture Styles and Effects

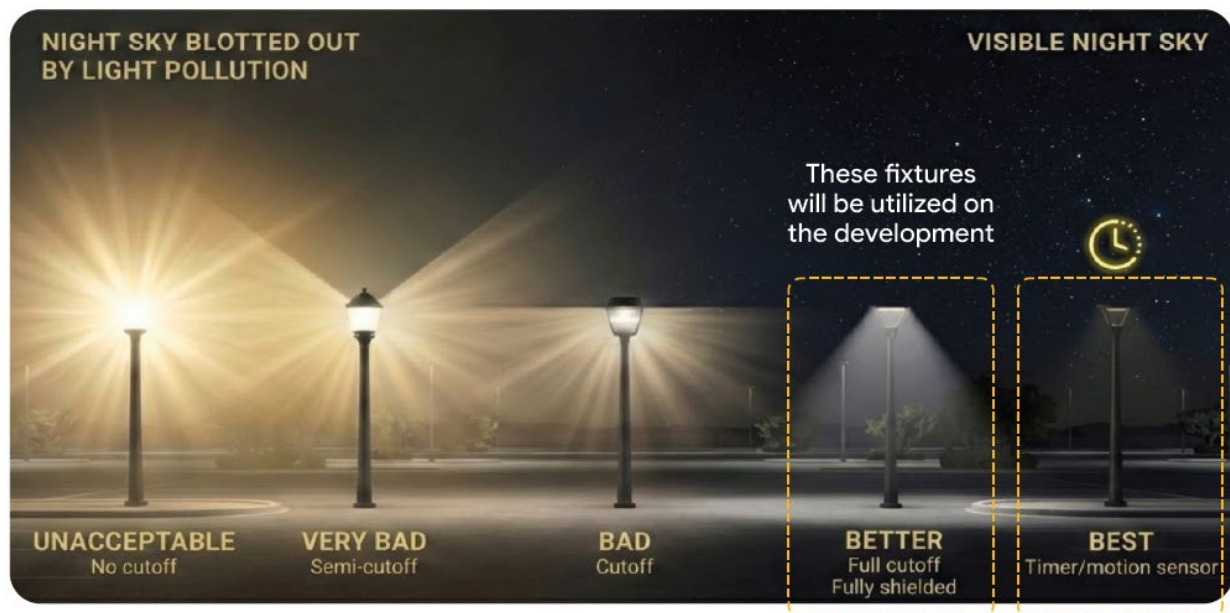
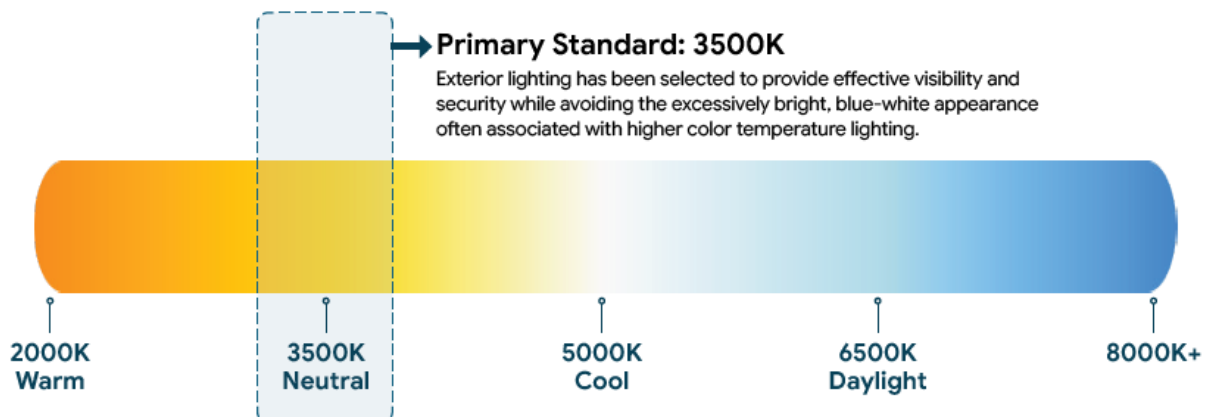


Figure 25: Lighting Temperature Ranges &amp; Standards



## 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, and any greenhouse gases. Discuss effects to air quality including any sensitive receptors, human health, or applicable regulatory criteria. Include a discussion of any methods used to assess the project's effect on air quality and the results of that assessment. Identify pollution control equipment and other measures that will be taken to avoid, minimize, or mitigate adverse effects from stationary source emissions.

*AUAR Guidance: This item is not applicable to an AUAR. Any stationary air emissions source large enough to merit environmental review requires individual review.*

The proposed Project evaluated in the AUAR involves a data center use that may require backup generators. The backup generation needs would be identified through a separate environmental review process outside of this AUAR and the specifics would depend on a number of factors associated with the operational needs of the data center, which are not yet definitive.

The AUAR would not be used to support any Air Permits or Backup Generation Site Permits (if any) required from state agencies. If any potential generation produces emissions (e.g., from generators) above the threshold for an air quality permit/environmental review, then any backup generation would be subject to additional environmental review beyond what is evaluated in this AUAR. This would be a separate environmental review completed as design advances.

Backup generators would be located within the eight designated “equipment yards” shown on Figure 3. All eight equipment yards are not anticipated to be required to support the Project. As site design continues, the exact equipment yards required to support the Project would be refined, and a subset of the eight originally proposed yards would be constructed.

#### *Air Quality Review*

As discussed elsewhere in the AUAR, backup generation or battery energy storage systems for the Proposed Project, if needed, would be subject to separate permitting and environmental review. The Project Proposer anticipates that some combination of battery energy storage and/or emergency backup generation may be required to support data center reliability, to support emergency lighting and emergency power. At the time of this AUAR, however, the exact type, number, capacity, location, operating profile, and fuel storage volumes for any battery energy storage system or backup generation are not definitive, and may vary based on final interconnection requirements, reliability standards, and equipment selection.

Although backup generation and battery storage system needs are not definitive, the AUAR studies the air quality impacts of a maximum, realistic backup generation scenario. Emergency backup generators or battery energy storage systems would only be used in the event of a grid failure. The emergency backup generators would need to be tested once per month for 30 to 60 minutes each and may have limited run time for maintenance. Otherwise, they would be on standby for when there is an emergency or grid outage. See Item 19 Noise for specific limitations on run times. Battery energy storage systems would not have air emissions so the following section is specific to backup generators.

The proposed data center is located in St. Louis County, which is classified as in attainment/unclassifiable for all pollutants. As a result, major source thresholds under the Title V permitting program are 100 tons per year (tpy) for all criteria pollutants, 25 for all hazardous air pollutants (HAPs), and 10 tpy for any individual HAP. The federal New Source Review (NSR) permitting program regulates emissions from major stationary sources of regulated air pollutants. The federal NSR is comprised of two elements: Nonattainment NSR (NNSR) and Prevention of Significant Deterioration (PSD). NNSR permitting is applicable in areas that have been designated as nonattainment for a regulated pollutant under the National Ambient Air Quality Standards (NAAQS). PSD permitting applies in areas that have been designated as

attainment or unclassifiable. The site is located in St. Louis County, which is currently in attainment or unclassifiable with the NAAQS for all regulated NSR pollutants. Therefore, with respect to the federal NSR permitting program, the PSD requirements would be applicable for all regulated pollutants. Under the Prevention of Significant Deterioration (PSD) permitting program, the major source threshold for criteria pollutants is 250 tpy<sup>36</sup>.

The MPCA operates a one-permit system for air permitting, in which a single air emissions permit covers both construction and operation. The type of authorization required depends on the potential-to-emit (PTE) levels of individual criteria pollutants and hazardous air pollutants (HAPs). The MPCA has five potentially applicable air emissions permit types including Registration Permit Option D, Capped Emission Permit, Individual State Minor Permit, Title V Major Source (PSD Minor), and Title V Major Source (PSD Major). The MPCA relies on factors such as potential or actual emissions thresholds to determine the type of air emissions permit required for the facility. Each of these permits have different reporting and modeling requirements, and timelines for permit issuance dependent on the size of the facility and the number of generators on site. Public notice and/or comment is required for all permits except Registration Permit Option D.

Federal standards that apply to stationary internal combustion engines include the New Source Performance Standard (NSPS) for compression-ignition stationary internal combustion engines (CI ICE; 40 CFR §60, Subpart IIII). Applicable NSPS limits for NO<sub>x</sub>, CO, and PM and the associated monitoring, testing, and recordkeeping requirements depend on each engine's intended use, manufacture date, and displacement per cylinder. Engines must be manufacturer-certified to meet the non-road CI ICE pollutant standards (40 CFR §1039, Appendix I) as referenced in 40 CFR §60.4205(b). For diesel-fired emergency generators (including renewable diesels such as hydrotreated vegetable oil, HVO), NSPS would require, at minimum, Tier 2 generators given the intended use, size, and order date. At the federal level, NSR minor sources do not face additional add-on control device requirements. The Project Proposer is aware of this requirement and at a minimum will install Tier 2 certified generators to comply with these requirements.

The U.S. Environmental Protection Agency (USEPA) has developed National Emission Standards for Hazardous Air Pollutants (NESHAPs) for area sources, which apply to any site that conducts covered operations irrespective of whether the site triggers major source thresholds pursuant to the Clean Air Act. Per 40 CFR §63.6585, the Project would be subject to the NESHAP requirements of Subpart ZZZZ for stationary reciprocating internal combustion engines (RICE). Engines that are subject to NSPS regulations meet the NESHAP by complying with NSPS.

Emissions from the proposed facility would consist primarily of nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), greenhouse gases (GHG), and to a lesser extent hydrocarbons (HC), particulate matter (PM), and sulfur dioxide (SO<sub>2</sub>) from combustion in diesel-fired emergency generators.

---

<sup>36</sup> Data centers are not on the list of 28 source categories for which there is a lower major source threshold of 100 tpy for regulated criteria pollutants.

Pursuant to the Clean Air Act, federal- and/or state-enforceable emissions limits, operating restrictions, fuel specifications, and/or control measures (e.g., add-on SCR, DOC, and/or DPF) may be expected for the various air pollutants to achieve and maintain compliance with respect to air emissions.

To evaluate the likely most appropriate air permit for the proposed data center, the AUAR evaluates a maximum scenario of 16 x 2.75 megawatt (MW) diesel-fired emergency generators. The Project Proposer has not yet determined if diesel backup generation will be required, or the type, number, capacity, location, operating profile, or fuel storage volumes for any backup generation. Therefore, three (3) different 2.75 MW generator models were evaluated as potential candidates, and the maximum potential emissions among the candidate engines were used for the analysis. Each of the emergency generators would be equipped with associated diesel belly tanks, which will have negligible emissions of volatile organic compounds (VOC).

In addition, the facility will include two (2) 0.56 MW site entrance diesel-fired emergency generators and two (2) 0.186 MW diesel fire pump engines used to power water pumps for fire suppression.

Based on the preliminary emissions evaluation, the Proposed Project is expected to qualify for an MPCA Registration Option D permit by limiting the annual operating hours of the emergency generators such that emissions remain below the applicable Registration Option D thresholds. Registration Permit Option D is the most streamlined permitting option and is intended for facilities with high potential, but low actual emissions. The eligibility thresholds are 50 tons per year (tpy) for each criteria pollutant, 5 tpy for any single hazardous air pollutant (HAP), 12.5 tpy for total HAPs, and 50,000 tpy CO<sub>2</sub>e for greenhouse gas emissions. Option D allows adding or removing emission units without an amendment provided total emissions remain under all thresholds. Because the Project will operate under Registration Option D, air dispersion modeling is not anticipated to be required for permitting; compliance will be demonstrated via the emissions inventory and permit application.

Using the generator assumptions described above, to remain eligible for Option D, the emergency generators would need to be limited to approximately 77 hours of operation per year each, on average, while the site entrance generators and fire pump engines would each be limited to 100 hours per year. However, in practice, actual runtime is expected to be much lower. See Item 19 Noise for specific run hours. The Option D limits are inclusive of all operations (testing, maintenance, emergency). Additionally, the annual emissions inventory, due April 1 of each year to MPCA, requires that emergency emissions be included in the assessment.

Each engine would be subject to the run time restrictions for emergency engines under 40 CFR 60 Subpart IIII, which limit maintenance and testing operations to no more than 100 hours per year for each individual engine, 50 of which may be used for “other” non-emergency operation. To demonstrate continued eligibility for the registration permit, the Project Proposer would implement tracking of the monthly and 12-month rolling total aggregate emissions from all engines at the site. As required by the Option D permit, the Project Proposer would submit an

annual emissions inventory report to MPCA detailing actual emissions of criteria air pollutants, air toxics, and greenhouse gases for the previous calendar year.

Nearby sensitive receptors include residences, but because the emergency generators are intended to operate only during emergency events and limited maintenance and testing and because the facility is expected to operate under an Option D registration with enforceable annual emission limits, significant adverse impacts to ambient air quality are not anticipated.

- 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.**

*AUAR Guidance: Although the MPCA no longer issues Indirect Source Permits, traffic-related air quality may still be an issue if the analysis in Item 18 indicates that development would cause or worsen traffic congestion. The general guidance from the EAW form should still be followed. Questions about the details of air quality analysis should be directed to MPCA staff.*

The MnDOT has developed a screening method designed to identify intersections that will not cause a carbon monoxide (CO) impact above state standards. MnDOT has demonstrated that even the 10 highest traffic volume intersections in the Twin Cities do not experience CO impacts<sup>37</sup>. Therefore, intersections with traffic volumes lower than these 10 highest intersections will not cause a CO impact above state standards. MnDOT’s screening method demonstrates that intersections with total daily approaching traffic volumes below 82,300 vehicles per day will not have the potential for causing CO air pollution problems. None of the intersections in the Study Area exceed the criteria that would lead to a violation of the air quality standards.

- 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 16a). 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 Guidance: Dust and odors need not be addressed in an AUAR, unless there is some unusual reason to do so. The RGU might want to discuss as part of the mitigation plan, however, any dust control ordinances in effect.*

During construction, the proposed development may generate temporary fugitive dust emissions. The Minnesota Pollution Control Agency (MPCA) regulates construction dust as "fugitive dust," requiring developers to prevent airborne particles from causing health concerns, visibility impairment, or surface water pollution. The Project Proposer must comply with these best management practices during construction. The City of Hermantown regulates dust in

<sup>37</sup> Source: MnDOT CO Hot Spot Screening Method. [https://www.dot.state.mn.us/project-development/subject-guidance/airquality/process.html#:~:text=The%20Twin%20Cities%20area%20has,carbon%20monoxide%20\(CO\)%20violations](https://www.dot.state.mn.us/project-development/subject-guidance/airquality/process.html#:~:text=The%20Twin%20Cities%20area%20has,carbon%20monoxide%20(CO)%20violations)

accordance with the standards set by the MPCA.<sup>38</sup> Dust emissions can be controlled by sweeping, watering, sprinkling, as appropriate or as prevailing weather and soil conditions dictate. Additionally, the Project Proposer must develop a Fugitive Dust Control Plan prior to construction.

During operations, dust and odor emissions are not anticipated as all ground surfaces would either be impervious or vegetated.

## 18. GREENHOUSE GAS 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.**

### *About Greenhouse Gases*

Certain gases in the earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space. A portion of the radiation is absorbed by the earth's surface and a smaller portion of this radiation is reflected back toward space. This absorbed radiation is then emitted from the earth as low-frequency infrared radiation. The frequencies at which bodies emit radiation are proportional to temperature. Because the earth has a much lower temperature than the sun, it emits lower-frequency radiation. Most solar radiation passes through GHGs; however, infrared radiation is absorbed by these gases. As a result, radiation that otherwise would have escaped back into space is instead "trapped," resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on earth.

The primary GHGs contributing to the greenhouse effect are carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O). Fluorinated gases also make up a small fraction of the GHGs that contribute to climate change. Examples of fluorinated gases include chlorofluorocarbons (CFCs), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF<sub>6</sub>), and nitrogen trifluoride (NF<sub>3</sub>); however, it is noted that these gases are not associated with typical land use development. Human-caused emissions of GHGs exceeding natural ambient concentrations are believed to be responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth's climate, known as global climate change or global warming.<sup>39</sup>

---

<sup>38</sup> [City of Hermantown 2017 Standard Specifications for Construction.](#)

<sup>39</sup> Summarized from USEPA, Overview of Greenhouse Gases: <https://www.epa.gov/ghgemissions/overview-greenhouse-gases>

### *Project Related GHG Emissions*

This section describes the estimated GHG emissions from the existing buildings within the Study Area and includes an estimated quantification of the following GHG emissions associated with the proposed Project:

- Carbon dioxide (CO<sub>2</sub>)
- Nitrous oxide (N<sub>2</sub>O)
- Methane (CH<sub>4</sub>)

The projected GHG emissions are listed below on an average annual basis using the CO<sub>2</sub> equivalent (CO<sub>2</sub>e) and include the Project Proposer's best estimate of average annual emissions over the proposed life/design service life of future development. The estimates also include emissions from the construction and operating phases of the development. Emissions were estimated using the EQB' Minnesota Climate Calculator (Version 1.2 March 2026)<sup>40</sup> and are summarized in Table 20 and Table 21 by Project phase (i.e., construction and operations) and source type (e.g., combustion from mobile equipment, off-site electricity). Consistent with Minnesota environmental review guidance, the calculator estimates project GHG emissions over the expected life of a project and incorporates utility-specific electricity emission factors that change over time. The methodology, assumptions, and results are documented within the calculator and **Appendix H** to the AUAR.

Construction emissions are based on length of construction and are from mobile equipment including passenger cars, light-duty trucks, and medium and heavy-duty trucks, and construction equipment (both gasoline and diesel).

All the electricity for the development would come from Minnesota Power, meaning the GHG emissions estimates are based on Minnesota Power's grid mix plan, which complies with Minnesota's renewable and carbon-free electricity laws, as provided in their 2025 Integrated Resource Plan<sup>41</sup>. The GHG estimates for the data center building energy consumption shown in Table 21 account for the transition to renewable energy sources, with the goal of obtaining 100 percent fuel from carbon-free sources by the year 2040. Currently, about 50 percent of Minnesota's Power grid mix comes from renewable sources. This plan is updated through a recurring Integrated Resource Planning process through the MPUC<sup>42</sup>, so the GHG estimates shown in Table 21 are reflective of current estimates through 2040 and are expected to decrease over time as more of the grid's fuel source transitions to renewable energy and/or other eligible carbon-free resources allowed under Minnesota's carbon-free electricity laws.

---

<sup>40</sup> Environmental Quality Board. *Minnesota Climate Calculator*. Available at: <https://www.eqb.state.mn.us/environmental-review/climate-assessments>.

<sup>41</sup> Minnesota Power. Available at: <https://mnpower.com/irp2025>

<sup>42</sup> MPUC. Available at: <https://mn.gov/puc/activities/economic-analysis/planning/irp/>

Electricity rates and usage from Minnesota Power are regulated by the MPUC through a regulatory compact that sets just, reasonable rates and approves infrastructure investments.<sup>43</sup> The data center would be served under an existing regulated rate structure in compliance with the Minnesota law that ensures existing customers do not pay for costs associated with connecting and serving a new large customer and comply with all of Minnesota's renewable energy and carbon-free electricity laws. Minnesota Power has filed the negotiated Electric Service Agreement on March 26, 2026 with the MPUC and will go through a public and regulatory review and approval in 2026/27<sup>44</sup>. This application is in Docket 25-127 and can be accessed via the MPUC's website: <https://mn.gov/puc/activities/economic-analysis/planning/minnesota-power-irp/>.

See Item 22 Other Potential Environmental Effects section of this AUAR for more information on energy demand and infrastructure improvements needed to support the proposed development.

### **Utility-Specific Emission Factors Used by the EQB Calculator**

For projects served by Minnesota Power, the EQB Climate Calculator contains utility-specific electricity emission factors in the Assumptions tab. The factors used by the calculator are shown below and are contained directly within the EQB Climate Calculator as utility-specific assumptions adopted by the State-developed tool.

### **Calculation of First-Year Emissions**

The Project is assumed to begin operation in 2030 at the earliest. Accordingly, the calculator applies Minnesota Power's 2030 emission factor of 49.693 kg CO<sub>2</sub>e/MMBtu to the Project's annual electricity consumption. The first-year emissions calculation is:

$$15,244,076,664,000 \text{ Btu/year} \times 0.000001 \text{ MMBtu/Btu} \times 49.693 \text{ kg CO}_2\text{e/MMBtu} \\ = 757,520,420 \text{ kg CO}_2\text{e/year (approximately 757,520 metric tons CO}_2\text{e/year)}$$

Thus, the first-year electricity-related emissions are approximately 757,520 metric tons CO<sub>2</sub>e (approximately 835,000 short tons CO<sub>2</sub>e) in 2030.

### **How Emissions Change Over Time**

The EQB Climate Calculator does not hold electricity emission factors constant throughout the project life. Instead, consistent with requirements under state law, it uses utility-specific milestone-year emission factors and linearly interpolates between those milestone years. The emissions presented in the calculator demonstrate this methodology.

The EQB's Climate Calculator therefore assumes a gradual decline in Minnesota Power's electricity carbon intensity between 2030 and 2035, followed by a further decline between 2035

<sup>43</sup> MPUC Integrated Resource Plan. Available at: <https://mn.gov/puc/about-us/what-we-regulate/#:~:text=What%20We%20Regulate-,What%20we%20Regulate,Electric%20and%20natural%20gas>

<sup>44</sup> Minnesota Power. Available at: <https://minnesotapower.blob.core.windows.net/content/Content/Documents/Company/PressReleases/2026/PressRelease03032026.pdf>

and 2040, reaching a carbon-free electricity emission factor beginning in 2040. Emissions remain zero thereafter for the remainder of the modeled operational lifetime.

### **Lifetime and Annualized Emissions**

Because the EQB methodology evaluates emissions over the entire project life, it calculates cumulative emissions over the 50-year operational period and then annualizes those emissions over the total project lifetime. Using the declining emission factors discussed above, the calculator estimates specific to building energy consumption:

- 3,923,505 metric tons CO<sub>2</sub>e of cumulative building energy emissions over the project life; and
- 74,028 metric tons CO<sub>2</sub>e per year on an annualized basis.

The annualized value presented in the AUAR is therefore not intended to represent emissions in the first year of operation. Rather, it represents the average annual emissions across the entire modeled project lifetime, which includes many future years when the calculator assumes Minnesota Power's electricity emission factor has declined substantially or reached zero.

### **Electricity Emissions After 2040**

The assumed emissions factor applied is not a project-specific assumption. Rather, it is embedded within the Minnesota EQB Climate Calculator, a State-developed methodology intended for use in Minnesota environmental review. The calculator's treatment of electricity emissions reflects Minnesota's adopted energy policy and utility planning framework. Specifically, Minnesota enacted the Clean Electricity by 2040 law in 2023, which requires electric utilities serving Minnesota customers to provide electricity that is 100 percent carbon-free by 2040, with interim compliance requirements of 80 percent carbon-free electricity by 2030 and 90 percent carbon-free electricity by 2035. The Minnesota Department of Commerce describes the law as requiring electric utilities to provide "100% carbon-free electricity by 2040."<sup>45, 46</sup>

The statute applies directly to investor-owned utilities such as Minnesota Power and establishes a regulatory framework under which utilities must generate or procure sufficient carbon-free electricity to satisfy their retail sales obligations. The electricity supplied to the Project by Minnesota Power is classified as a retail sale. Minnesota Power's own Integrated Resource Plan identifies compliance with the Carbon-Free Standard as a statutory requirement and recognizes the requirement to achieve electricity generation or procurement equivalent to 100 percent carbon-free retail sales by 2040. It is not reasonable and would be purely speculative to assume that Minnesota Power would not comply with state law.

Accordingly, the EQB Climate Calculator incorporates utility-specific emission factors that progressively decline over time and reach zero beginning in 2040. The calculator then linearly interpolates between these milestone years and assigns a zero-carbon emission factor beginning

---

<sup>45</sup> <https://mn.gov/commerce/energy/clean/cleanelectricity2040/>

<sup>46</sup> <https://mn.gov/commerce/energy/clean/clean-energy-laws/>

in 2040. The resulting emissions trajectory is therefore a direct implementation of the State-developed methodology rather than an assumption unique to this project.

**Table 20: Construction Emissions**

| Scope <sup>47</sup> | Emission Type                     | Project-Related CO <sub>2</sub> e Emissions (Annualized) |
|---------------------|-----------------------------------|----------------------------------------------------------|
| Scope 1             | Material inputs                   | 1,025.58                                                 |
| Scope 1             | Transportation of material inputs | 27.12                                                    |
| Scope 1             | Employee commuting                | 1,154.34                                                 |
| Scope 1             | Construction equipment            | 191.55                                                   |
| Scope 1             | Land use change (construction)    | 1.26                                                     |
| Scope 1             | Construction waste                | 2.25                                                     |
| <b>Total</b>        |                                   | <b>2,402.10</b>                                          |

**Table 21: Operational Emissions**

| Scope        | Emission Type                                          | Existing Conditions CO <sub>2</sub> e Emissions (tons/year) | Project-Related CO <sub>2</sub> e Emissions (tons/year) |
|--------------|--------------------------------------------------------|-------------------------------------------------------------|---------------------------------------------------------|
| Scope 1      | Natural gas and oil products (backup generator diesel) | -                                                           | 3,266.08                                                |
| Scope 1      | HFC leakage                                            | -                                                           | 81.72                                                   |
| Scope 1      | On-road vehicles                                       | 33.90                                                       | 270.72                                                  |
| Scope 2      | Off-site electricity                                   | 56.92                                                       | 37,014.20 - 74,028.40 <sup>48</sup>                     |
| Scope 3      | Treatment of waste off-site                            | 8.17                                                        | 27.47                                                   |
| <b>Total</b> |                                                        | <b>98.99</b>                                                | <b>40,660.19 - 77,674.39</b>                            |

## b. GHG Assessment

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

The following are potential design strategies and sustainability measures that the Project Proposer is committing to for the proposed development to reduce emissions:

- Use energy efficient appliances, equipment, and lighting
- Energy efficient building shells

<sup>47</sup> Emissions are categorized as either direct or indirect. Scope 1 emissions are direct emissions that are released directly from properties owned or under the control of the Project Proposer. This includes, for example, the use of mobile equipment during construction. Scope 2 and 3 emissions are indirect emissions. Scope 2 emissions are associated with the offsite generation of purchased electricity and/or steam. Scope 3 emissions are from the offsite provision of waste management services, including land disposal (landfilling), recycling, and solid waste composting.

<sup>48</sup> The range in electricity consumption and associated GHG estimates range includes the amount of consumption provided for in the Electricity Service Agreement with Minnesota Power and provide design flexibility to account for possible fluctuation in usage, price, energy mix over time.

- Implement waste best management practices and recycle and compost appropriate material when applicable
- Trees and additional landscaping would be planted as part of the new development
- Provide electric vehicle-ready charging infrastructure
- Purchase of renewable energy credits or green power products to offset CO<sub>2</sub> emissions
- Backup generators for the site would be designed to be capable of utilizing renewable diesel as a fuel source
- Seek opportunities for responsible water usage by reusing/treating wastewater

Implementation of the above strategies would be evaluated on a case-by-case basis based on code requirements, feasibility, availability of materials, schedule, and tenant considerations.

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

- Proposed development would require new appliances, equipment, and lighting during operation. The use of energy efficient technologies would reduce the amount of electricity used per product. Collectively, the implementation of these technologies would reduce overall energy use and in-turn, GHG emissions.
- Proposed development would require heating and cooling during operation. One of the highest sources of energy use is energy spent heating and cooling buildings. The use of energy efficient building shells reduces the amount of energy needed for heating and cooling, therefore reducing energy use and GHG emissions.
- Waste would be generated during operation. By implementing waste best management practices and recycling and composting appropriate material when applicable, GHG emitted from wastes during operations can be reduced.
- Trees and additional landscaping can reduce the GHG footprint of the Project by absorbing greenhouse gas emissions. Tree replacement would occur per city requirements.
- Conventional gasoline-powered vehicles emit GHGs. The Project Proposer is planning to provide electric vehicle-ready charging infrastructure to encourage adoption of electric vehicles.
- Electricity generation from fossil fuel sources can contribute to GHG production. The Project Proposer is exploring the purchase of additional renewable energy credits and seeking renewable diesel for backup generators to mitigate fossil fuel use. Under this proposed Project, the data centers would be powered by

the electric grid at all times. Backup generators would only be utilized to provide power to the data centers if the electric grid fails.

- This Project would enable the development of 700 MW of new clean energy resources without increasing costs to Minnesota Power customers. These system assets, including 300 MW of wind energy and 400 MW of battery storage, would support progress toward Minnesota’s carbon-free standard and strengthen the resilience of the electrical system for all Minnesota Power customers. While energy storage has no direct emissions effect, when deployed strategically, energy storage can make the grid more flexible, unlocking renewable energy and reducing GHG emissions. Minnesota Power’s proposed additions of energy storage is important to ensure the utility has sufficient capacity to serve all customers at all hours of the year.
- See **Appendix H** for full list of mitigation measures.

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

**iii. Quantify the proposed project’s predicted net lifetime GHG emissions (total tons per number 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 Next Generation Energy Act requires the state to reduce greenhouse gas emissions in the state by 80 percent between 2005 and 2050, while supporting clean energy, energy efficiency, and supplementing other renewable energy standards in Minnesota. In 2023, the state Legislature updated these goals to reflect the state’s Climate Action Framework. Minnesota’s current goals are to reduce greenhouse gas emissions 50 percent by 2030 from a 2005 baseline and achieve net-zero emissions by 2050. As stated above, all electricity for the Project would come from Minnesota Power’s electric system, which is subject to the Renewable Energy Standard and Carbon-Free Standard for electricity. State law also requires that electricity for large facilities like data centers does not prevent a utility like Minnesota Power from complying with these laws. The MPCA’s biennial GHG emissions reduction report from 2021 identifies strategies for reducing emissions in the three economic sectors with the highest emissions – transportation, electricity generation, and agriculture, forestry, and land use.

The expected lifespan of the Project is 53 years including construction, this equates to a total predicted net lifetime of ~4,244,054 CO<sub>2</sub>e metric tons over the lifetime of the development under the proposed Project for the construction and operations phases. The Project Proposer would evaluate implementing the sustainability measures listed in Item 18.b.i to reduce operational emissions to the extent practicable. The proposed

Project would be built and operated in compliance with federal and state regulations and city building codes.

## 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.**

*AUAR Guidance: Construction noise need not be addressed in an AUAR, unless there is some unusual reason to do so. The RGU might want to discuss as part of the mitigation plan, however, any construction noise ordinances in effect.*

*If the area will include or adjoin major noise sources, a noise analysis is needed to determine if any noise levels in excess of standards would occur, and if so, to identify appropriate mitigation measures. With respect to traffic-generated noise, the noise analysis should be based on the traffic analysis of Item 18.*

### *Existing Noise Conditions*

The existing ambient noise sources in the Study Area consist mainly of the surrounding transportation infrastructure. Three county roads are located immediately north, east and south of the site (Morris Thomas Road, Midway Road, and St. Louis River Road) and all contribute a large portion of the existing ambient noise. The northeastern extent of the Study Area is located roughly 1,520 feet from United States (US) Highway 2. Within the vicinity of the site, US Highway 2 is a 3-lane 2-way known truck route and contributes to a portion of the background ambient noise. The Duluth, Missabe, and Iron Range Railroad is located roughly 440 feet from the northeastern extent of the Study Area and roughly 700 feet from the southeastern extent of the Study Area. The railroad is active and can carry up to 20 trains per day and contributes intermittent ambient noise to the site. Other sources of noise included environmental noise such as wind, birds chirping, and insects.

Kimley-Horn conducted ambient sound pressure measurements in May 2025 for the proposed Project. The two measurement locations represented existing sound pressure levels at noise-sensitive land uses adjacent to the Study Area. The two measurement locations are depicted in Figure 26 and more information is provided in Table 22. The evaluation of existing sound measurements were taken at 5 vertical feet above ground elevations to represent average human height.

A-weighted decibels, or dBA, are a unit of sound pressure that is adjusted to represent how the human ear hears sound.  $L_{10}$  is also a sound pressure metric that represents the sound pressure level, in dBA, exceeded ten percent of the time during a one-hour survey. Similarly,  $L_{50}$  represents the sound pressure level, in dBA, exceeded 50 percent of the time during a one-hour survey.

C-weighted decibels, or dBC, are a unit of sound pressure that emphasizes more low-frequency sound energy than dBA. LCeq represents the steady-state sound with the equivalent C-weighted sound energy of that contained in the same hour of time-varying sound. LCeq is analogous to the “average” sound level over a given hour.

**Table 22: Existing Ambient Sound Pressure Measurements**

| Measurement Location | Description                                                                             | Measurement Period                | Sound Levels (dBA) |                 |                 |                 | Sound Levels (dBC) |                  |
|----------------------|-----------------------------------------------------------------------------------------|-----------------------------------|--------------------|-----------------|-----------------|-----------------|--------------------|------------------|
|                      |                                                                                         |                                   | Daytime            |                 | Nighttime       |                 | Daytime            | Nighttime        |
|                      |                                                                                         |                                   | L <sub>10</sub>    | L <sub>50</sub> | L <sub>10</sub> | L <sub>50</sub> | LC <sub>eq</sub>   | LC <sub>eq</sub> |
| 1                    | Northern portion of the study area, approximately 100 feet south of Morris Thomas Road. | 10:00 AM (5/12) – 10:00 AM (5/13) | 63                 | 59              | 63              | 53              | 70                 | 66               |
| 2                    | Southeast portion of the study area, approximately 150 feet west of Midway Road.        | 10:30 AM (5/12) – 10:30 AM (5/13) | 60                 | 55              | 60              | 49              | 74                 | 69               |

The existing L<sub>10</sub> at the 2 measurement locations ranged from 60 to 63 dBA during the day and at night. The L<sub>50</sub> ranged from 55 to 59 dBA during the day and 49 to 53 dBA at night. The existing LC<sub>eq</sub> at the 2 measurement locations ranged from 70 to 74 dBC during the day and 66 to 69 dBC at night.

Figure 26: Noise Measurement Locations



### *Adjacent Noise Receptors*

In Minnesota, noise standards are based on noise area classifications (NAC) corresponding to the location of the listener, referred to as a receptor. 18 sensitive noise receptors were identified to represent noise-sensitive land uses near the Project. These receptors are all residential land uses. The noise receptors range from approximately 30 to 1,100 feet in distance from the Study Area. The noise receptors are depicted in Figure 27.

### *Minnesota State Noise Standards*

The State of Minnesota regulates noise in Minnesota Rules, part 7030.0040. This rule establishes the noise standards in Table 23 based on Noise Area Classification (NAC). A NAC is based on the land use of the location where a person may hear noise, not parcel boundaries. For example, a residence on a farmstead would fall under NAC 1 on a front porch and under NAC 3 in an agricultural field, even if both locations are within the same parcel. Further, noise from the Project and the campus would be regulated according to the NAC of surrounding receptors, even though the Project would fall under NAC 3.

**Table 23: Minnesota State Noise Standards**

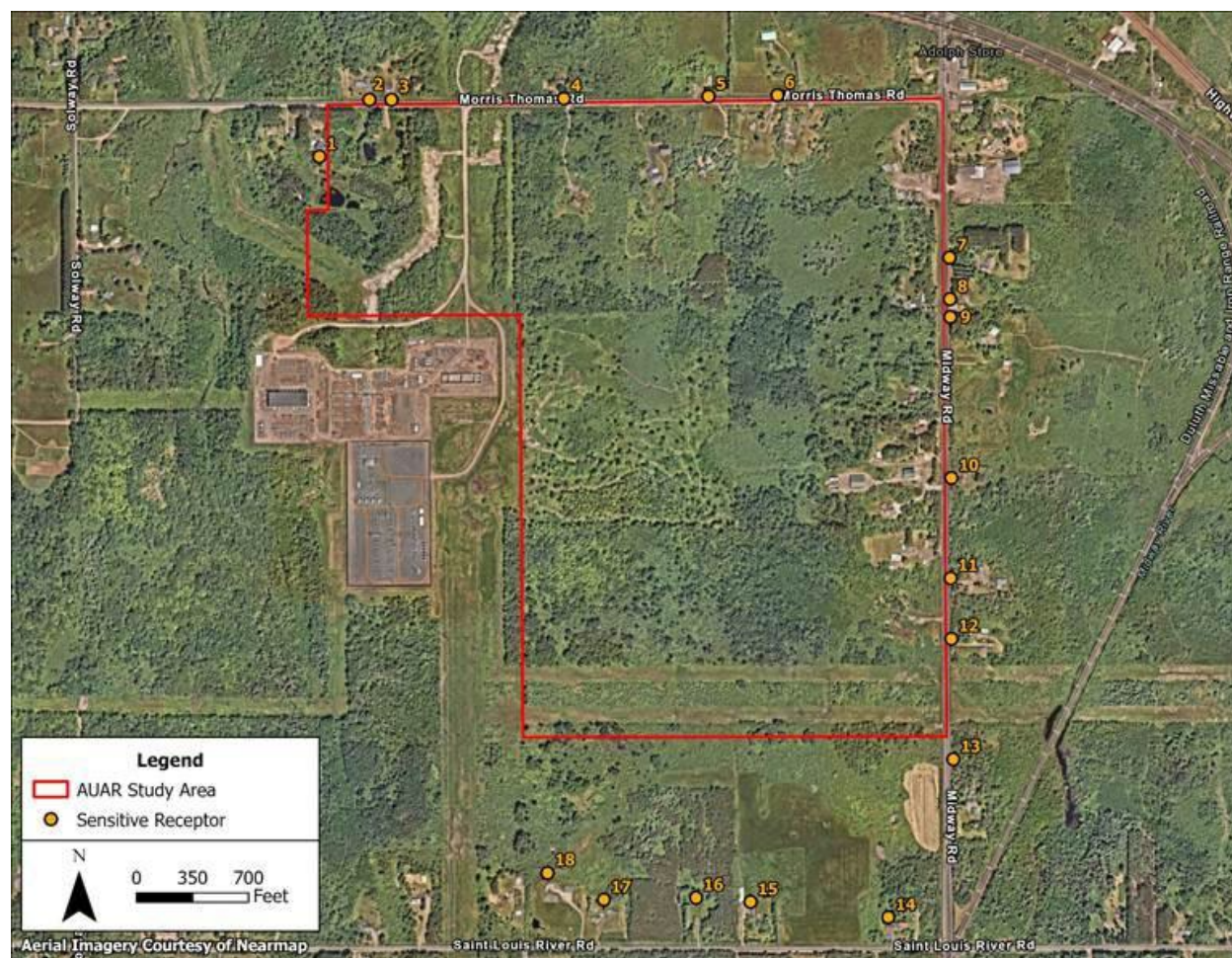
| Noise Area Classification                                                                                                 | Daytime         |                 | Nighttime       |                 |
|---------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|-----------------|-----------------|
|                                                                                                                           | L <sub>10</sub> | L <sub>50</sub> | L <sub>10</sub> | L <sub>50</sub> |
| 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              |
| 4: Undeveloped and unused land                                                                                            | N/A             | N/A             | N/A             | N/A             |

### *Local Noise Regulations*

The Project Proposer would need to submit an application for a special use permit from the City of Hermantown. Once the Project's final site configuration has been determined, the conditions of the special use permit would require the preparation of a noise model that demonstrates Project compliance with state noise regulations and City of Hermantown zoning code Chapters 4 - 480.10 and Chapter 5 – 535.04.12.4.<sup>49</sup> Backup generator noise would also be modeled to ensure compliance with state noise regulations. All noise models would be reviewed and approved by the City of Hermantown. If necessary, backup generator maintenance and testing shall be performed between 8:00 a.m. and 5:00 p.m., Monday-Friday. No backup generators would be located within 100 feet of a residential dwelling.

<sup>49</sup> City of Hermantown Zoning Code. Available at: <https://hermantownmn.com/departments/planning-and-zoning/zoning-code/>.

Figure 27: Sensitive Receptors



### Construction Noise

As stated in the AUAR guidelines, construction noise need not be addressed unless there is some unusual reason to do so. Construction noise impacts would be typical for a light industrial development project and no unusual circumstances have been identified that would necessitate a detailed construction noise analysis. See Item 6 Project Description for context on what can be expected for noise during construction.

The City of Hermantown would regulate the hours of operation for construction equipment through development agreements and the required Special Use Permit. These approvals are aligned with common practices for the City, permit agreements typically restrict construction activities to daytime hours (between 7 a.m. and 10 p.m.).

### Low-frequency Noise

Low-frequency noise (typically defined as sound below approximately 200 Hz) and infrasound (sound below 20 Hz) have been the subject of ongoing research for several decades. Existing studies indicate that low-frequency noise can contribute to annoyance or disturbance under certain

conditions, particularly in quiet environments or when prominent tonal characteristics are present.<sup>50</sup> However, scientific literature does not establish a consistent causal relationship between low-frequency noise or infrasound and serious adverse health effects. Current research remains limited, and many published studies note substantial uncertainty due to individual sensitivity, exposure conditions, and the mechanisms by which low-frequency sound can influence human responses.<sup>51</sup> Although data centers contain equipment capable of producing low-frequency sound, the available scientific literature does not identify data center operations as a source of low-frequency noise or infrasound associated with established serious health effects.

At present, there is no broadly accepted international consensus regarding appropriate exposure thresholds for low-frequency noise or infrasound from industrial facilities. Various jurisdictions and researchers have proposed different evaluation methods and criteria, including octave-band limits, low-frequency C-weighted metrics, and G-weighted infrasound metrics.<sup>5253</sup> The existence of multiple assessment approaches reflects the evolving nature of research on low frequency noise and the absence of a universally accepted standard.

Published research also indicates that annoyance and community response are influenced by numerous factors beyond measured sound levels, including background sound conditions, spectral content, tonal characteristics, and individual sensitivity.<sup>54</sup> Accordingly, contemporary industrial noise assessments typically focus on demonstrating compliance with applicable local noise regulations and accepted acoustical engineering practices, while also evaluating potential low-frequency characteristics where warranted. Similarly, this Project will comply with the applicable state and local noise regulations while implementing cross-frequency attenuation to the extent practicable.

#### *Future Noise Conditions*

Kimley-Horn modeled anticipated sound pressure levels for the proposed Project at surrounding receptor locations to identify potential noise impacts from the proposed development under normal data center operations, generator testing, and emergency operations. SoundPLAN noise modeling software was employed, according to ISO Standard 9613-2 methods, for predicting sound pressure levels outdoors. The model included grading related to development of the campus, topography surrounding the site, ground cover type, and proposed heights of data center buildings and equipment within the campus. The noise sources in the model consist of air-cooled chillers and emergency backup generators to model a maximum build scenario. Regardless of the cooling equipment used, project noise levels would be required to comply with the same state noise standards. Because backup generation needs are uncertain and may require separate environmental

---

<sup>50</sup> Yonemura, Miki, Hyojin Lee, and Shinichi Sakamoto. (2021). Subjective Evaluation on the Annoyance of Environmental Noise Containing Low-Frequency Tonal Components.

<sup>51</sup> Persson Waye, Kerstin. (2011). Noise and Health - Effects of Low Frequency Noise and Vibrations: Environmental and Occupational Perspectives.

<sup>52</sup> Hessler, George F. (2004). Proposed criteria in residential communities for low-frequency noise emissions from industrial sources.

<sup>53</sup> Jakobsen, Jorgen. (2001). Danish guidelines on environmental low frequency noise, infrasound and vibration.

<sup>54</sup> Job, R.F. Soames. (1996). Sources and effects of low frequency noise.

review, 16 backup generators were modeled as noise sources to represent the maximum build noise scenario.

Considering that the air-cooled chillers would be operational for 24 hours a day following construction, the noise emissions under the modeled scenarios would be constant with slight seasonal variations due to changes in environmental conditions (temperature, humidity, wind patterns, etc.); therefore, the maximum build sound pressure levels in dBA can be compared to the most restrictive state nighttime  $L_{50}$  noise thresholds listed above. The modeled sound pressure levels at sensitive receptors are listed in Table 24.

#### Noise Model Scenarios:

1. Normal Operations: under this model scenario, no generators are operating and all chillers are operating.
2. Generator Testing: under this model scenario, two of the four generators at each building are operating and all chillers are operating. Generator testing would only occur between 8:00 a.m. and 5:00 p.m., Monday – Friday. Frequency of testing is anticipated to occur:
  - 6 hours at 10 percent load for all engines for monthly maintenance (30 minutes/month, 12 months)
  - 1 hour at 100 percent load for all engines for annual maintenance
3. Emergency Operations: under this model scenario, all generators are operating and up to eight chillers per building are operating.

**Table 24: Modeled Sound Pressure Levels with no Mitigation**

| Receptor ID | Sound Pressure Level |     |                   |     |                      |     |
|-------------|----------------------|-----|-------------------|-----|----------------------|-----|
|             | Normal Operations    |     | Generator Testing |     | Emergency Operations |     |
|             | dBA                  | dBC | dBA               | dBC | dBA                  | dBC |
| 1           | 60                   | 72  | 60                | 72  | 49                   | 65  |
| 2           | 60                   | 72  | 60                | 73  | 50                   | 65  |
| 3           | 61                   | 73  | 61                | 73  | 50                   | 66  |
| 4           | 65                   | 75  | 65                | 76  | 54                   | 68  |
| 5           | 66                   | 77  | 66                | 77  | 55                   | 69  |

| Receptor ID | Sound Pressure Level |       |                   |       |                      |       |
|-------------|----------------------|-------|-------------------|-------|----------------------|-------|
|             | Normal Operations    |       | Generator Testing |       | Emergency Operations |       |
|             | dBA                  | dB(C) | dBA               | dB(C) | dBA                  | dB(C) |
| 6           | 66                   | 77    | 67                | 77    | 55                   | 69    |
| 7           | 67                   | 78    | 67                | 78    | 59                   | 71    |
| 8           | 70                   | 79    | 70                | 79    | 62                   | 72    |
| 9           | 71                   | 79    | 71                | 79    | 62                   | 73    |
| 10          | 64                   | 75    | 64                | 76    | 55                   | 69    |
| 11          | 63                   | 74    | 63                | 75    | 53                   | 68    |
| 12          | 62                   | 74    | 62                | 74    | 52                   | 67    |
| 13          | 60                   | 72    | 60                | 72    | 50                   | 65    |
| 14          | 58                   | 71    | 58                | 71    | 48                   | 64    |
| 15          | 60                   | 72    | 60                | 72    | 50                   | 64    |
| 16          | 61                   | 72    | 61                | 72    | 51                   | 64    |
| 17          | 61                   | 72    | 61                | 72    | 50                   | 64    |
| 18          | 61                   | 72    | 61                | 73    | 49                   | 65    |

Under normal operations, sound pressure levels at sensitive receptors ranged from 58 to 71 dBA and 71 to 79 dB(C). Without mitigation, all receptors are modeled surpassing the nighttime  $L_{50}$  threshold of 50 dBA.

Under generator testing, sound pressure levels at sensitive receptors ranged from 58 to 71 dBA and 71 to 79 dB(C). 13 receptors are modeled surpassing the daytime  $L_{50}$  threshold of 60 dBA. Generator testing does not impact nighttime noise levels because, as stated above, generators would only be tested during the day in compliance with the City Ordinance.

Under emergency operations, sound pressure levels at sensitive receptors ranged from 48 to 62 dBA and 64 to 72 dB(C). 10 receptors are modeled surpassing the nighttime  $L_{50}$  threshold of 50 dBA.

Smaller generators for security entrances and fire pump engines may be included in the final design; however, their noise levels are anticipated to be negligible. Similarly, substation transformers associated with the campus are anticipated to have a negligible contribution to the future noise environment when compared to anticipated chiller noise emissions. These transformers would be located in the middle of campus, between the proposed data center buildings. This placement would further reduce noise impacts from the transformers due to building shielding and increased distance from receptors.

#### *Required Mitigation*

Without mitigation, under normal operations all sensitive receptors are modeled exceeding the existing nighttime  $L_{50}$  range of 49 to 53 dBA.

Without standard noise enclosures, emergency backup generators could further add to unwanted noise with sound pressure levels that can exceed 84 dBA when measured at 50 feet. However, the model assumes standard noise enclosures for the emergency backup generators. With this mitigation, the dominant noise source in the model appears to be the air-cooled chillers. In addition to physical mitigation, generator testing would be restricted to only occur between 8:00 a.m. and 5:00 p.m. Monday-Friday. Frequency of testing is anticipated to occur:

- 6 hours at 10 percent load for all engines for monthly maintenance (30 minutes/month, 12 months)
- 1 hour at 100 percent load for all engines for annual maintenance

In addition to the mitigation of generator noise timeframes, further noise mitigation is still required to comply with state noise standards. While there are no state or local requirements for mitigating low frequency noise, final design would incorporate cross-frequency attenuation. There are a variety of standard mitigation measures available for abating anticipated noise from the proposed Project. These include:

#### *Chiller Enclosures*

Similar to the generator enclosures discussed above, custom noise enclosures could be installed around the chiller units to mitigate noise. Chiller enclosures can range from covering specific parts of chiller units to entirely enclosing the equipment. As a first step, chiller compressor covers are considered. For further noise abatement fan discharge stacks made of acoustical panels can be added. Integrated metal silencers can be added surrounding the discharge stack. Finally, intake silencers can be installed to reduce chiller noise emissions. This specific type of mitigation can be tailored to specific chiller units to maximize cross-frequency sound pressure reductions and achieve compliance with state standards.

#### *Noise Walls*

Acoustical barriers or noise walls are solid structures built between noise sources and sensitive receptors. They are often used on highway projects for the same purpose. There are several ways to modify noise walls to meet noise abatement goals. First, the height of these barriers can be adjusted to block noise from reaching the receptor. The material of these walls can also be adjusted to be

more absorptive. More absorptive materials reflect less noise and help reduce sound levels at receptors behind noise walls. Finally, noise walls can be strategically placed in elevated areas that block the line of sight between the noise source and a receptor. Breaking the line of sight with a noise source is one of the most effective ways to reduce noise levels at receptors.

#### *Landscaping (berms)*

Earth berms can be constructed to serve as natural noise barriers and can provide an aesthetically pleasing and permanent solution to unwanted noise.

#### *Additional Mitigation*

In addition to complying with the nighttime  $L_{50}$  threshold of 50 dBA, the Project Proposer is committing to mitigating Project-related noise levels so the nighttime  $L_{50}$  does not exceed 47 dBA at adjacent sensitive receptors. A difference of 3 dBA is just perceptible to the human ear; therefore, this additional mitigation commitment would provide a small but noticeable decrease in Project-related noise levels beyond what is required by state standards.

#### *Example Mitigation Scenario*

Table 25 includes an example scenario where sound pressure levels at all sensitive receptors have a nighttime  $L_{50}$  below 47 dBA. This table represents sound pressure levels during generator testing which was determined to be the loudest operational scenario, see Table 24. The modeled mitigation measures include noise walls along some areas of the study area boundary as well as comprehensive chiller enclosures, including compressor covers, fan discharge stacks with integrated metal silencers, and intake silencers. The reductions in chiller noise emissions associated with these enclosures were modeled using assumptions consistent with similar mitigation applications.

**Table 25: Example Mitigation Scenario**

| Receptor ID | Sound Pressure Level (dBA) <sup>55</sup> | Sound Pressure Level (dBC) <sup>56</sup> |
|-------------|------------------------------------------|------------------------------------------|
| 1           | 42                                       | 58                                       |
| 2           | 42                                       | 58                                       |
| 3           | 43                                       | 59                                       |
| 4           | 43                                       | 59                                       |
| 5           | 46                                       | 61                                       |
| 6           | 47                                       | 61                                       |
| 7           | 43                                       | 60                                       |
| 8           | 44                                       | 60                                       |

<sup>55</sup>dBA: a unit of sound pressure that is adjusted to represent how the human ear hears sound.

<sup>56</sup>dBC: a unit of sound pressure that emphasizes more low-frequency sound energy than dBA.

| Receptor ID | Sound Pressure Level<br>(dBA) <sup>55</sup> | Sound Pressure Level<br>(dBC) <sup>56</sup> |
|-------------|---------------------------------------------|---------------------------------------------|
| 9           | 45                                          | 61                                          |
| 10          | 46                                          | 61                                          |
| 11          | 45                                          | 60                                          |
| 12          | 44                                          | 60                                          |
| 13          | 42                                          | 58                                          |
| 14          | 40                                          | 57                                          |
| 15          | 42                                          | 58                                          |
| 16          | 43                                          | 58                                          |
| 17          | 43                                          | 58                                          |
| 18          | 43                                          | 58                                          |

Through the example mitigation scenario discussed above, all receptors are modeled with a nighttime  $L_{50}$  of 47 dBA or less (see Figure 28 and Figure 29 for noise levels with and without mitigation). The Project Proposer would ensure final mitigation measures for the Project would also bring nighttime  $L_{50}$  noise levels to 47 dBA or less and provide cross-frequency attenuation. This would minimize the noise impacts on the quality of life for those who use land near the Study Area.

**Figure 28: Proposed Project Noise Levels – With and Without Mitigation**

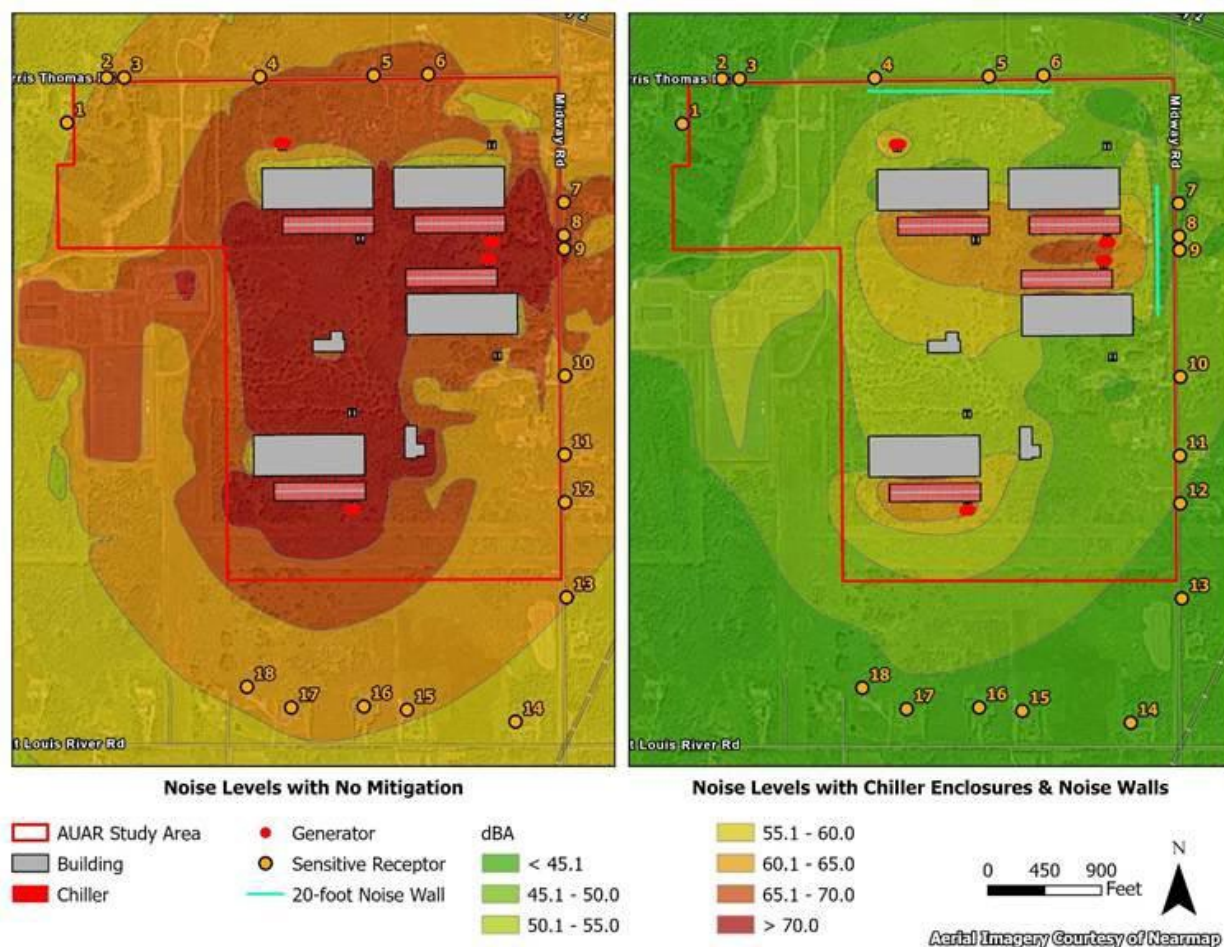
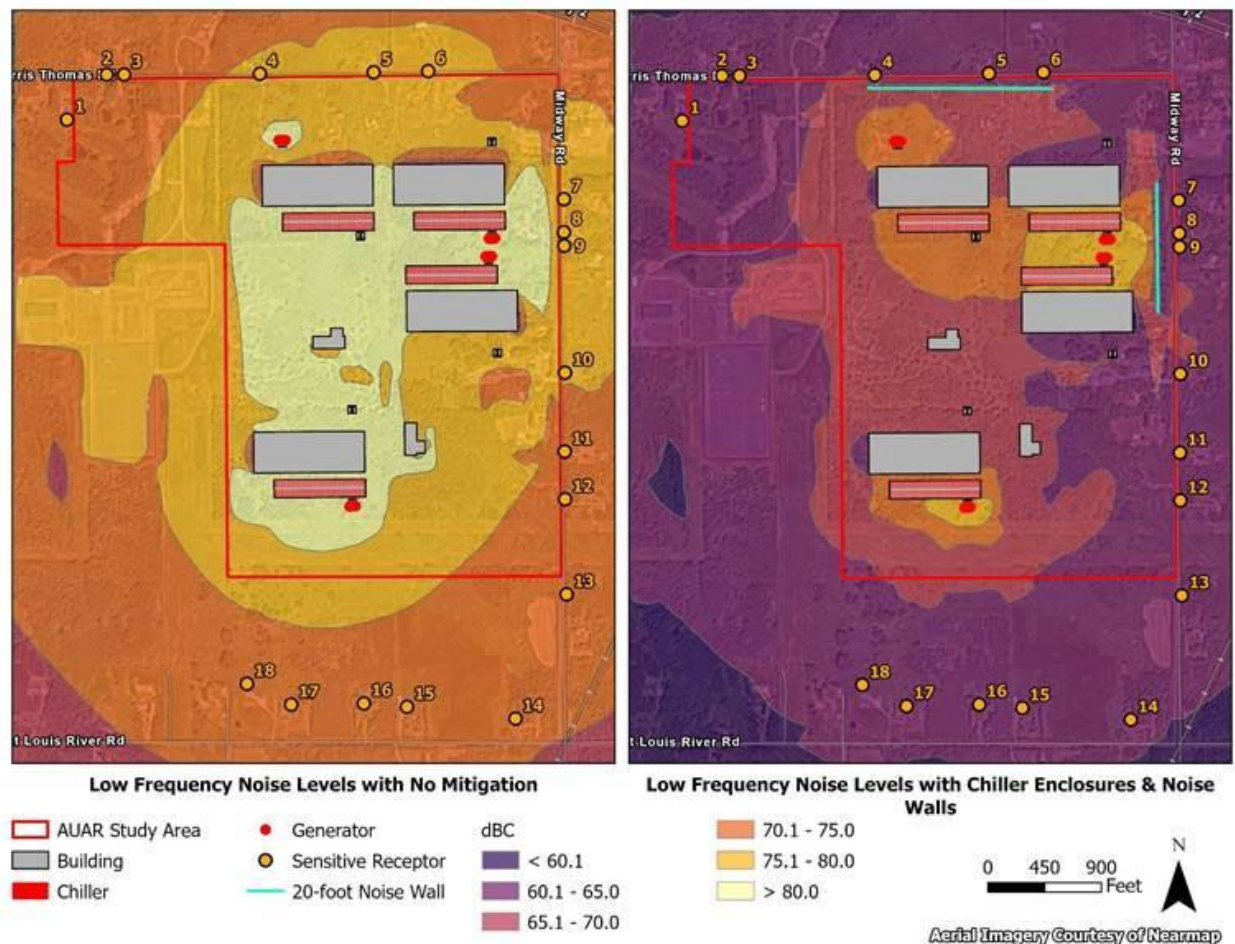


Figure 29: Proposed Project Low Frequency Noise Levels – With and Without Mitigation



## 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) source of trip generation rates used in the estimates; and 5) availability of transit and/or other alternative transportation modes.

### *Existing Roadway Characteristics*

**Midway Road (CSAH 13)** is a north-south two-lane St. Louis County roadway located along the eastern boundary of the Study Area. The annual average daily traffic (AADT) according to the MnDOT Traffic Mapping Application is 7,111 vehicle per day (vpd) south of St. Louis River Road, as of 2024. The posted speed limit on Midway Road is 55 miles per hour (mph) near the Project Study Area.

**United States Highway 2 (US 2)** is an east-west two-lane United States highway located northeast of the AUAR Study Area. The MnDOT Traffic Mapping Application reports an AADT of

5,466 vpd west of St. Louis River Road, as of 2025. The speed limit along US Highway 2 is 60 mph near the Study Area.

**Morris Thomas Road (CSAH 56)** is an east-west two-lane St. Louis County roadway that forms the northern boundary of the AUAR Study Area. The MnDOT Traffic Mapping Application reports an AADT of 1,195 vehicles per day west of Midway Road, as of 2024. The posted speed limit on Morris Thomas Road is 55 mph.

**Saint Louis River Road (CSAH 19)** east of Midway Road or **County Road 21** west of Midway Road) is an east-west two-lane road located south of the AUAR Study Area. The MnDOT Traffic Mapping Application reports an AADT of 508 vpd in 2024. The posted speed limit on Saint Louis River Road is 55 mph.

**Old Highway 2** is an east-west unpaved road located northeast of the AUAR Study Area. The MnDOT Traffic Mapping Application reports an AADT of 760 vpd in 2019. However, this is likely much higher than the current volume since the connection to US 2 has been removed since this count.

#### *Parking*

Minimum off-street parking and loading requirements listed in Chapter 5 of the City of Hermantown's Zoning Code would be adhered to.

#### *Transit*

Currently, there are no transit routes serving the Study Area. It is not anticipated that there would be significant change in transit usage.

#### *Bike and Pedestrian Infrastructure*

There is currently no dedicated bike or pedestrian infrastructure serving the Study Area. The Duluth-Superior Metropolitan Interstate Council's bike and pedestrian plan<sup>57</sup> identifies bikeways on Midway Road and US 2 as current bike routes, with "signed bikeable shoulders."

#### *Traffic Generation*

Site specific trip generation estimates were provided by the Project Proposer. Trip generation is based on data collected at similar sites throughout the country. The trip generation of the proposed development (full build out) is shown below in Table 26.

**Table 26: Trip Generation Forecasts**

| Scenario            | AM Peak Hour |     |     | PM Peak Hour |    |     | Daily |
|---------------------|--------------|-----|-----|--------------|----|-----|-------|
|                     | Total        | In  | Out | Total        | In | Out |       |
| <b>Operations</b>   | 290          | 260 | 30  | 290          | 30 | 260 | 1,920 |
| <b>Construction</b> | 390          | 330 | 60  | 340          | 70 | 270 | -     |

- 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**

<sup>57</sup> Source: <https://dsmic.org/>

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.

*AUAR Guidance: For AUAR reviews, a detailed traffic analysis will be needed, conforming to the MnDOT guidance as listed on the EAW form. The results of the traffic analysis must be used in the response to Items 16 and 17.*

A Traffic Impact Analysis (TIA) was completed in March 2026 based on the projected trip generation of the proposed Project. The results of this study can be found in **Appendix I**. Based on the detailed findings of the Hermantown Industrial TIA and Construction Conditions memorandum, the area's transportation network is expected to support development within the Study Area with mitigation. The TIA identified improvements that could be constructed to mitigate possible future traffic impacts associated with development within the Study Area. Metrics for traffic analysis include intersection delay as measured by Level of Service (LOS) and queue lengths.

The traffic analysis report includes intersection capacity analyses for intersections at the site access points as well as intersection operations within the vicinity of the Project (see locations identified on Exhibit 1 of the TIA). Access to the proposed development is located along Morris Thomas Road, about 0.4 miles west of Midway Road.

The location of the proposed access point adheres to the access management standards outlined in Chapter 5 of the City of Hermantown's Zoning Code.

The capacity of an intersection quantifies its ability to accommodate traffic volumes and is expressed in terms of level of service (LOS), measured in average delay per vehicle. LOS grades range from A to F, with LOS A as the highest (best traffic flow and least delay), LOS E as saturated or at-capacity conditions, and LOS F as the lowest (oversaturated conditions). Based on the results of the TIA, all study intersections are anticipated to operate at an overall LOS C or better and all individual movements at LOS D or better under Existing and No-Build conditions through the Design Year (2045). No background improvements are anticipated to be necessary for the Study Area.

Under the build-out conditions, delays see a significant increase, particularly at the intersection of Midway Road and Morris Thomas Road, which sees delays in excess of 100 seconds per vehicle during the PM peak hour. In general, the excessive delays at Morris Thomas Road and Midway Road are impacted by the train crossing to the north of the intersection. During crossing events, vehicles waiting to cross can create long queues that can extend to nearby intersections with Morris Thomas Road and US Highway 2 creating further queues at those intersections. A change in traffic control is anticipated to be required for this intersection. A traffic signal or roundabout may also help ensure that queues are able to disperse quickly after a train crossing. Additionally, turn lane improvements are recommended at this intersection and at the site

access point. With these improvements in place, all study intersections are anticipated to operate at LOS C or better and all individual movements at LOS D or better.

It was observed that existing queues at the north railroad crossing for vehicles traveling southbound on Midway Road reach the US Highway 2 intersection at times, causing queues to form in the westbound left-turn lane, eastbound right-turn lane, and southbound through lane. Queues from the east and westbound turning movements were not observed to block their respective through lanes at any time with adequate remaining queue storage. Note that St. Louis County is starting planning efforts for a potential grade separated rail crossing on Midway Road, which is separate and independent of the proposed development occurring within the Study Area.

Additionally, an analysis of the peak construction conditions was completed to determine the mitigation necessary for the temporarily elevated traffic levels that would occur during the construction of the site. This included capacity analysis and queueing analysis of the train crossing along Midway Road. The potential for significant operational issues were identified during the peak construction conditions, and multiple mitigation measures are recommended as a result, including a permanent traffic signal at Morris Thomas Road & Midway Road with multiple turn lanes added at this intersection. During construction, there is potentially a need to construct temporary parking for construction workers within 1 mile of the Study Area for the duration of construction of the Project.

The delay and LOS for each scenario at the study intersection is shown below in Table 27 Mitigated conditions results are shown in a separate column. With mitigation, all intersections are expected to operate at LOS D or better in all scenarios. Construction logistics are subject to change and should be refined by the contractor as design plans progress.

Table 27: Existing and Projected Intersection LOS

| Intersection                           | Existing LOS | No-Build LOS | Peak Construction LOS |      |           | Build LOS |           |      |
|----------------------------------------|--------------|--------------|-----------------------|------|-----------|-----------|-----------|------|
|                                        | 2025         | 2030         | 2045                  | 2027 | 2027 Mit. | 2030      | 2030 Mit. | 2045 |
| AM Peak Hour                           |              |              |                       |      |           |           |           |      |
| Midway Road & US Highway 2             | B            | B            | B                     | C    | B         | C         | C         | C    |
| Midway Road & Morris Thomas Road       | A            | A            | A                     | F    | B         | F         | A         | A    |
| Midway Road & St. Louis River Road     | B            | B            | B                     | B    | B         | B         | B         | B    |
| US Highway 2 & Morris Thomas Road      | A            | A            | A                     | A    | A         | A         | A         | B    |
| US Highway 2 & St. Louis River Road    | A            | A            | A                     | A    | B         | A         | A         | B    |
| Morris Thomas Road & Industrial Access | -            | -            | -                     | E    | B         | B         | C         | B    |
| PM Peak Hour                           |              |              |                       |      |           |           |           |      |
| Midway Road & US Highway 2             | B            | B            | B                     | B    | B         | B         | B         | B    |
| Midway Road & Morris Thomas Road       | A            | A            | A                     | F    | B         | F         | B         | B    |
| Midway Road & St. Louis River Road     | A            | B            | B                     | B    | C         | B         | B         | B    |
| US Highway 2 & Morris Thomas Road      | A            | A            | A                     | B    | B         | B         | B         | B    |

| Intersection                           | Existing LOS | No-Build LOS | Peak Construction LOS |      |            | Build LOS |            |      |
|----------------------------------------|--------------|--------------|-----------------------|------|------------|-----------|------------|------|
|                                        | 2025         | 2030         | 2045                  | 2027 | 2027 Miti. | 2030      | 2030 Miti. | 2045 |
| US Highway 2 & St. Louis River Road    | A            | A            | A                     | A    | A          | A         | A          | A    |
| Morris Thomas Road & Industrial Access | -            | -            | -                     | F    | B          | B         | B          | A    |

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

Based on the results of the traffic analysis the following improvements would be required to mitigate traffic impacts associated with the proposed development. The current mitigation plan has been reviewed and agreed to by the City, County, and MnDOT. The City would enter into cooperative agreements with County and MnDOT as to the schedule, payment and contract administration of these improvements.

1. Intersection of Morris Thomas Rd (CSAH 56) and development driveway
  - a. Construct a westbound dedicated left-turn lane on Morris Thomas Road at the driveway.
  - b. Driveway would be stop controlled.
2. Intersection of Midway Rd (CSAH 13) and Morris Thomas Rd (CSAH 56)
  - a. Construct a northbound dedicated left-turn lane on Midway Road at Morris Thomas Road.
  - b. Construct eastbound dedicated left-turn and right-turn lanes on Morris Thomas Road at Midway Road. Storage for the right-turn lane would ensure vehicles are not occluded from accessing the right-turn lane during 95 percent of the time.
  - c. Construct a southbound right-turn lane on Midway Road at Morris Thomas Road.
  - d. Install a permanent traffic signal.
  - e. Install conduit/cable to coordinate the signal controller with the railroad crossing controller (USDOT #251905S) and the signal controller at the US 2 signal system.
3. Railroad crossing (DOT #251905S)
  - a. Install a traffic queue cutter signal system that would face southbound Midway Road traffic and be located immediately north of Old Hwy 2.

- b. The need for railroad crossing upgrades would be coordinated with the MnDOT Rail Office (Paul DeLaRosa, paul.delarosa@state.mn.us).
- 4. Intersection of US 2 and Midway Road (CSAH 13)
  - a. Install conduit/cable to coordinate the signal controller with the railroad crossing controller (USDOT #251905S) and the signal controller at the Midway Road/Morris Thomas Road signal system.
- 5. Intersection of US 2 and St. Louis River Road
  - a. Construct a northwest bound dedicated left turn lane to accommodate additional site traffic.
- 6. Signal timing
  - a. Develop optimized signal timing models for both the Midway Road/Morris Thomas Road and US 2/Midway Road signal systems to accommodate non-train and train events.
- 7. Travel Demand Management (TDM)
  - a. A plan completed prior to the beginning of construction would be included in project bid documents, agreements, and notices to sub-contractors, suppliers, and employees. The TDM plan would direct all traffic traveling to the site from US Highway 2 southeast of St. Louis River Road to turn onto St. Louis River Road and enter from the south along Midway Road instead of turning left onto Midway Road from US Highway 2.
  - b. If the TDM plan does not prove to be effective at limiting queues at Midway Road & US Highway 2, additional mitigation such as variable message signs or other advanced warning during a train event could be implemented at US Highway 2 & St. Louis River Road.

**Legend**

- Study Area
- Traffic Intersections

Map Labels:

- Old Midway Rd
- Almquist Rd
- Old Hwy 2
- Morris Thomas Rd
- Midway Rd
- Hwy 2
- Waring Rd
- Ugstad Rd
- Camden Rd
- Midway Rd
- Saint Louis River Rd
- Udahl Rd
- Highway 2
- Railroad Ave

Scale: 0 800 1,600 Feet

Aerial Imagery Courtesy of NearMap

## 21. CUMULATIVE POTENTIAL EFFECTS

*AUAR Guidance: Because the AUAR process by its nature is intended to deal with cumulative potential effects from all future developments within the AUAR area, it is presumed that the responses to all items on the EAW form automatically encompass the impacts from all anticipated developments within the AUAR area.*

*However, the total impact on the environment with respect to any of the items on the EAW form may also be influenced by past, present, and reasonably foreseeable future projects outside of the AUAR area. The cumulative potential effect descriptions may be provided as part of the responses to other appropriate EAW items, or in response to this item.*

**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.**

*Background*

The purpose of the cumulative potential effects analysis is to put the proposed Project into context. Cumulative potential effects are defined in Minnesota Rules as the “effect on the environment that results from the incremental effects of a project in addition to other projects in the environmentally relevant area that might reasonably be expected to affect the same environmental resources, including future projects actually planned or for which a basis of expectation has been laid, regardless of what person undertakes the other projects or what jurisdictions have authority over the projects.”<sup>58</sup> To define which relevant other projects to include in the analysis, the EQB provides this definition:

1. They must be located within the “environmentally-relevant area” and be reasonably expected to affect the same environmental resources as the project under review.
2. To account for past projects (which includes projects constructed in the past but still in existence). The rule provides that in analyzing whether past projects contribute to cumulative potential effects, an RGU need only consider the current aggregate effects of past actions.
3. In looking to the future, only other projects actually planned or for which a basis of expectation has been laid need be considered. To evaluate whether a project is actually planned for or if a basis of expectation has been laid, EQB guidance sets out a two part test:
4. The first half of the test is to consider whether the other project is “reasonably likely to occur.” Five sources of information should be scrutinized to evaluate whether a project is reasonably likely to occur. Specifically:
  - a. Whether any applications for permits have been filed with any units of government

<sup>58</sup> Minnesota Rules, part 4410.0200, subpart 11a

- b. Whether detailed plans or specifications have been prepared
  - c. Future development indicated by adopted comprehensive plans, zoning, or other ordinances
  - d. Historic or forecasted development trends; and
  - e. Any other factors found to be relevant by the RGU (i.e. status of funding for the project)<sup>59</sup>
5. The second half of the test only needs to be applied if the first half of the test is met. The second half asks whether “sufficiently detailed information is available about the project to contribute to the understanding of cumulative potential effects.” This half of the test reflects the fact that identifying cumulative potential effects is a practical effort to predict potential environmental effects as accurately as possible. If very little specific information is available about its potential impacts, then that project would fail this half of the test and not be considered to have a basis of expectation laid for it.

### *Geography and Timing*

Under Minnesota Rule 4410.0200, subp. 11a, the first step in a cumulative potential effect analysis is to establish the “environmentally relevant area that might reasonably be expected to affect the same environmental resources,” for the proposed Project. The environmentally relevant area is, in effect, the environmental “footprint” of the proposed Project. For a cumulative potential effects analysis, the “footprint” of a project will always consider other projects with similar geography and timing, but the size of the area of impact (the “footprint”) usually will vary by type of impact so that a project can have several environmental footprints of different sizes.

The last step in the cumulative potential effects analysis is to determine the temporal context for “future projects” that have been planned or for which a reasonable basis of expectation has been laid. The timeframe considered for this AUAR includes projects that would be constructed in the reasonably foreseeable future by other private and public entities that have made future project plans and timelines publicly available as noted in the section below.

In undertaking the cumulative potential effects analysis, this AUAR aggregates the current effects of past actions by considering the existing conditions in the Study Area geographic scope 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.**

Under MEPA, a cumulative potential effects analysis must identify and consider the contributions of other projects in the environmentally relevant area that might reasonably be expected to affect the same environmental resources. The “other projects” considered must

<sup>59</sup> EQB May 2010 Guide to Minnesota Environmental Review Rules. Available at: <https://www.eqb.state.mn.us/sites/eqb/files/Guide%20to%20MN%20ER%20Rules-May%202010.pdf>

include future projects that are actually planned or for which a basis of expectation has been laid, regardless of what person undertakes the other projects or what jurisdictions have authority over the projects, as long as sufficiently detailed information about the project is available to contribute to the understanding of cumulative potential effects. The factors for evaluating if a basis of expectation has been laid for a project are set forth above. While the factors are not a hard-and-fast-rule, they are helpful in reaching a conclusion about whether the project is reasonably likely to occur.

There are several reasonably foreseeable future projects that are planned studies or funded projects in the environmentally relevant area. The cumulative potential effects of the following projects are considered along with existing background conditions as noted above:

- Canosia Rd (CSAH 98) Reclaim & Overlay - St. Louis County is planning a resurfacing project on Canosia Road (CSAH 98) in 2027. This project is in Solway and Grand Lake Townships and is 8.9 miles in length. The reclaim and overlay process will obliterate the existing pavement, stabilize the road base and construct a new pavement section. This project will include safety improvements at two intersections by constructing right-turn lanes on Canosia Road.
- Midway Road Corridor study - St. Louis County is leading the Midway Rd (CSAH 9/13) Corridor Study. This study includes two roadway segments which are Midway Rd (CSAH 9/13), beginning at MNTH 194 and ending at North Pike Lake Rd (CSAH 9), and Martin Rd (CSAH 9), beginning at Midway Rd (CSAH 13) and ending at Vaux Rd. This corridor study will also include an evaluation of the intersections of US 53 at Midway Rd (CSAH 13) and Midway Rd (CSAH 13) at Martin Rd (CSAH 9). The purpose of the Midway Rd Corridor Study is to develop recommended roadway and intersection layouts that will be implemented in future reconstruction projects.
- Midway Road Railroad Crossing Planning Study - St. Louis County is exploring the community's desire for completing improvements at the railroad crossings located on Midway Rd (CSAH 13) at St. Louis River Rd (CSAH 19/CR 696) and in Adolph (0.2 mile south of Hwy 2). The Railroad Crossing Elimination (RCE) Federal Grant was awarded for up to \$1,862,400 for Project Planning Development and includes activities to support grade crossing-related improvements on Canadian National-owned infrastructure in the County of St. Louis.
- Public utility extensions for sanitary sewer and water are identified in the City's 2045 Comprehensive Plan to serve future light industrial uses in the Study Area and would support future growth, both within the Study Area and in other areas that would be connected by the extensions in the future. These public utility improvements now have an identified timeframe from the Comprehensive Plan and are anticipated to start construction in 2026 and will take approximately two years to complete. This infrastructure expansion will benefit the surrounding community and support growth in a portion of the City and County that has been planned for future development. There will not be any public utility assessment levied against private property owners for the

installation of the new utilities. Installation of the public utility improvements will be financed by the Project Proposer.

- MnDOT has a programmed pavement project on US 2 from MN 194 to Midway Road (CSAH 13) in 2026. The scope of work is a reclaim and overlay (SP 6908-68).
- MnDOT has a programmed pavement project on US 2 from just west of Midway Road (CSAH 13) to Boundary Ave (CSAH 14) in Proctor in 2027. The scope of this work includes pavement rehab and additional work within the City of Proctor (SP 6908-72).
- MnDOT has programmed a pavement project on US 53 from Haines Road to Midway Road. Project work includes preventative maintenance on driving through lanes and pavement mill and overlay on turn lanes.
- Minnesota Power has three projects nearby:
  - Iron Range-St. Louis County-Arrowhead 345 kV Transmission Line Project – this project is located west of the Study Area and also connects to the Arrowhead Substation. It is currently in a permitting stage and is tentatively scheduled for construction in late 2027.
  - A Control Equipment Replacement Project is scheduled to be constructed in fall 2026 to replace outdated infrastructure at the Arrowhead Substation.
  - High Voltage Direct Current Modernization Project is located west of the Study Area and is currently under construction and is anticipated to be completed in 2029.

**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.**

As discussed above, the role of the cumulative potential effects analysis is to focus on the same environmental resources that the proposed Project and other projects may adversely affect in the environmentally relevant area. There may be other future, but currently undefined, projects in the environmentally relevant area that could affect the same environmental resources as the proposed Project. But these projects lack detailed plans or specifications, are not reasonably likely to occur, and lack sufficiently detailed information to contribute to an understanding of cumulative potential effects.

Based on the identified projects listed above, potential cumulative effects may include water resources, traffic, utilities, and energy. The potential for adverse cumulative effects is described for each of these items in the following paragraphs.

*Water Resources (wastewater, water appropriation, and water quality)*

Item 12.b.i and iii outline wastewater generation and the water demand estimate that would be associated with the proposed development. The City's current water supply and sewer system has sufficient capacity to accommodate the proposed Project as well as accommodating future

needs; however, this will require 4.5 miles of water and sewer extensions to bring water resources to the site. These extensions are consistent with the city of Hermantown's 2045 Comprehensive Plan for extending public utilities to this area. Therefore, adverse cumulative impacts to wastewater and water appropriation are not anticipated.

Stormwater travels along the ground surface in a different manner once lawn/grass is replaced by impervious surfaces including building rooftops and paved parking areas. The proposed development would increase impervious surface area with the development of buildings, parking lots, and roadways. This Project along with the additional future projects noted above would be required to meet stormwater management requirements, including installation of BMPs, falling under the authority of the MPCA and the city of Hermantown. Therefore, adverse cumulative water quality impacts are not anticipated.

### *Traffic*

Item 20a and b summarizes the traffic analysis completed for the proposed Project and Item 20c outlines the mitigation anticipated for the proposed development. The AUAR traffic study takes into account cumulative traffic growth with surrounding future projects by applying a background growth rate calculation to align with the city of Hermantown's anticipated population growth to determine appropriate transportation mitigation for the next 20 years. The traffic improvements identified in the mitigation plan once implemented would maintain and improve local road operations. Future development in the surrounding areas that are anticipated to increase traffic congestion would also be required to complete individual traffic impact studies and identify additional mitigation measures to address any impacts. Therefore, adverse cumulative impacts related to traffic are not anticipated.

### *Energy*

Minnesota Power has several existing, planned, and proposed electrical infrastructure projects in the region that are independent of the proposed data center development. These projects include transmission, substation, generation, and energy storage investments undertaken as part of the utility's broader responsibility to maintain a safe, reliable, and resilient electric system for all customers. Information reviewed for this analysis indicates that regional infrastructure improvements are being planned and implemented to address a range of system needs, including reliability, load growth, maintenance and replacement of aging infrastructure, integration of renewable energy resources, and compliance with state and regional electric system planning requirements.

Minnesota Power conducts system impact and facilities planning studies to identify infrastructure needs and ensure that new customer loads can be accommodated while maintaining reliable electric service to existing customers. Planned investments in transmission, battery storage, renewable energy resources, substations, and related facilities are intended to strengthen overall grid performance, increase system resilience, and support long-term energy reliability.

From a cumulative effects perspective, the proposed data center is one of multiple factors contributing to ongoing utility infrastructure planning and investment. The electrical

infrastructure projects identified in the environmentally relevant area are interconnected components of a regional electric system and are being advanced for broader system reliability and energy delivery purposes, regardless of any single development project. As a result, the cumulative effect of these utility improvements is expected to enhance the reliability, flexibility, and resilience of the regional electric grid for Minnesota Power customers while supporting anticipated future growth in electricity demand.

Accordingly, although the proposed data center may contribute to the need for certain electrical system upgrades, regional transmission, generation, and energy infrastructure projects should not be viewed exclusively as project-related impacts, but rather as components of broader utility planning efforts designed to maintain and improve electric system reliability and service throughout Minnesota Power's service territory.

Item 22 outlines the projected energy use for the proposed development along with more details regarding the infrastructure improvements needed to support that demand. The proposed infrastructure improvements would support the data center project but would also make the electrical grid more reliable for all Minnesota Power customers and would enable the development of 700 MW of new clean energy resources through wind and battery storage that supports progress toward Minnesota's carbon-free standard. Additionally, Minnesota law ensures that existing customers do not pay the costs associated with connecting and serving a new large customer. As described above, as currently filed at the MPUC, Minnesota Power anticipates \$600 to \$800 million dollars in savings to other customers over the 15 year life of the proposed energy service agreement. Therefore, adverse cumulative impacts related to energy use are not anticipated.

## 22. OTHER POTENTIAL ENVIRONMENTAL EFFECTS

---

*AUAR Guidance: 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.*

### *Energy Use*

While AUAR Guidance does not require consideration of energy resources as a separate consideration, in light of heightened public interest in energy resources needed for a data center development, this section discusses energy use, including an estimate of peak electricity demand, and an explanation of the factors that go into determining backup generation needs. This section also includes a discussion on the existing utility infrastructure in and adjacent to the Study Area and potential additions needed to serve the proposed Project (i.e. new transmission or distribution infrastructure).

### *Existing Utility Infrastructure*

An existing electrical substation (Arrowhead Substation) is located west of the Study Area that is owned and operated by Minnesota Power. Associated aboveground transmission lines run along Morris Thomas Road, Midway Road, the western boundary of the site, and bisecting the Study Area from east to west through the south portion of the site.

### *Proposed Energy Use*

Annually, the proposed data center is anticipated to consume 2,233,800,000 - 4,467,600,000 kilowatt-hours (kWh) of electricity. The range in electricity consumption and associated GHG estimates range includes the amount of consumption provided for in the Electricity Service Agreement with Minnesota Power and provides design flexibility to account for possible fluctuation in usage, price, and energy mix over time.

Minnesota Power would provide the energy to the proposed data center campus, and the data center would be served under a regulated rate structure in compliance with the Minnesota law that ensures existing customers do not pay for costs associated with connecting and serving a new large customer or new very large power customer. This Project would enable the development of 700 megawatts MW of new clean energy resources without increasing costs to Minnesota Power customers. These system assets, including 300 MW of wind energy and 400 MW of battery storage, would support progress toward Minnesota's carbon-free standard and strengthen the resilience of the electrical system for all Minnesota Power customers. In addition, Minnesota Power and the Project Proposer would work together to identify opportunities to deploy demand flexibility capabilities that can help reduce grid strain during peak times. Under its Energy Forward strategy, Minnesota Power has made significant progress toward meeting the requirements of Minnesota's carbon-free law, with customers receiving over 50 percent of energy from renewable sources today<sup>60</sup>.

Minnesota Power's electrical system is governed by state and federal laws and regulated by the MPUC, which protects customers by setting rates and deciding how the company produces and delivers electricity.

### *Infrastructure Upgrades*

The proposed development would have a higher power need and consumption than what is currently required for the existing land uses within the AUAR Study Area. Future power needs are being coordinated with the current power provider (Minnesota Power). Minnesota Power has completed a System Impact Study on the existing grid network to understand the existing capacity and future infrastructure needs to provide sufficient capacity for the proposed data center while maintaining the grid system for the surrounding area. After that step, a Facilities Study was completed to understand what improvements would be needed.

The study found that upgrades to the existing Arrowhead Substation and existing transmission lines would be needed to strengthen the local power grid. New transmission lines would be built from the existing Arrowhead Substation to the site for the first phase of data centers buildings constructed and additional transmissions lines would be needed later from a new (second) transformer at the existing St. Louis County Substation (half mile northwest of the Study Area) for later phases of data center buildings. Minnesota Power owns the land needed for the first phase which is immediately abutting the site. Permitting for the transmission lines may include a Conditional Use Permit or

---

<sup>60</sup> Source: <https://mnpower.com/IRP2025>

Building Permit through the City of Hermantown and/or Solway Township since the lines are under 345 kV, or a route permit from the MPUC. The new transmission lines would also need a separate environmental review process led by Minnesota Power with the City of Hermantown and/or Solway Township, or the MPUC as the RGU prior to approval and construction. Additional network upgrades are anticipated to take place within an existing substation and transmission line right-of-way and would not require major permitting. The expansion of the St. Louis County Substation to accommodate installation of a second transformer, as a standalone project with no additional transmission line connections, would also not meet the threshold for major permit requirements.

### *Costs*

Through an Electric Service Agreement between the Project Proposer and Minnesota Power, the Project Proposer would cover the costs associated with the necessary energy infrastructure to meet its energy needs. The Project Proposer would contribute \$5 million in energy impact funding to help bolster Minnesota Power's energy affordability and efficiency programs for low- to moderate-income residential customers. The Electric Service Agreement also includes new power infrastructure development supported by the Project Proposer to protect reliability for all customers. Separately, the data center would contribute millions of dollars annually to the statewide energy efficiency and weatherization program as specified in the 2025 Minnesota data center energy law. In addition to paying all costs needed to provide electricity to the Project, adding the Project would also help fund the fixed costs of Minnesota Power's whole electric system through being a large new buyer of electricity. In this way, Minnesota Power estimates that adding the Project would provide \$600-800 million of additional cost savings to other customers over the 15-year term of the Electric Service Agreement. The Electric Service Agreement was filed with the MPUC on March 26, 2026 and would go through a public and regulatory review and approval in 2026. This application is in Docket 25-127 and can be accessed via the MPUC's website:

<https://mn.gov/puc/activities/economic-analysis/planning/minnesota-power-irp/>

### *Electromagnetic Fields (EMF)*

Electromagnetic field (EMF) radiation refers to the waves of the electromagnetic field produced by electrically charged objects. These waves propagate through space carrying electromagnetic radiant energy. EMF radiation can come from both natural sources such as the Earth's magnetic field and manmade sources, such as electronics/electronic appliances, cell phones, and power lines.

### *Types of EMF Radiation*

**Non-ionizing Radiation:** This includes extremely low-frequency (60Hz) EMFs (like those from power lines) and low frequency (up to 1015Hz) optical radiation (like visible light, infrared, and ultraviolet).

Non-ionizing radiation is generally considered less harmful, as it does not have enough energy to remove tightly bound electrons from atoms.

**Ionizing Radiation:** This includes ultraviolet rays (part of it), X-rays, and gamma rays, which have higher frequencies (greater than 1015Hz) and the energy to ionize atoms and molecules, potentially causing damage to cells and DNA.

The health and environmental impacts of EMF radiation have been a subject of extensive study. According to the World Health Organization (WHO), low-frequency EMF exposures from power lines and electrical appliances are far below the levels that can produce significant heating or long-term tissue damage. A committee of the National Research Council, the operating arm of the National Academy of Sciences, reported in 1996 that it had found no persuasive evidence that household appliances or power transmission lines presented a threat.<sup>61</sup>

The Project proposes new electronics and utilities that would emit EMF levels. The Project would emit EMF levels typical of industrial and potential utility applications for new high voltage transmission lines servicing a data center could be constructed. The EMFs generated by these transmission lines are within the non-ionizing range and would comply with federal regulatory standards to ensure public safety including the National Electrical Safety Code, which sets forth guidelines for the installation and operation of power lines to control EMF exposure.

Electromagnetic fields decay rapidly as distance increases from the electrical source.<sup>62</sup> For balanced electrical systems, doubling the distance reduces magnetic field strength by approximately a factor of four.<sup>63</sup> This is one reason magnetic fields associated with transmission facilities typically diminish substantially away from conductors and substations. Predicted magnetic field levels within a data center are below applicable equipment-operability criteria and substantially below referenced public exposure guidelines. No EMF mitigation measures are necessary for the building itself.

The Project's design of the transmission lines would include EMF mitigation strategies to ensure that the EMF radiation levels remain well within the safety thresholds. These strategies include maintaining safe distances from residential areas, using EMF shielding techniques where necessary, and adhering to the recommended exposure limits set by health and safety regulatory bodies. Additionally, the EMF emissions from high voltage transmission lines are evaluated by the MPUC and regulated to prevent any adverse environmental or health impacts. Minnesota Power would also be required to complete an EMF study as part of the permitting process for the new transmission lines to the data center.

### *Heat*

An urban heat island occurs when a city experiences much warmer temperatures than nearby rural areas. The difference in temperature between urban and less-developed rural areas has to do with

---

<sup>61</sup> World Health Organization (2014). Electromagnetic fields and public health. Retrieved from WHO website. Available at: <https://www.who.int/news-room/fact-sheets/detail/electromagnetic-fields-and-public-health-mobile-phones>

<sup>62</sup> Source: International Commission on Non-Ionizing Radiation Protection (ICNIRP). *Guidelines for Limiting Exposure to Time-Varying Electric and Magnetic Fields (1 Hz–100 kHz)*. Health Physics 99(6):818–836, 2010. [icnirp.org](http://icnirp.org)

<sup>63</sup> Source: World Health Organization. *Environmental Health Criteria 238: Extremely Low Frequency Fields*, 2007.

how well the surfaces in each environment absorb and hold heat. Urban heat island effects generally result from the replacement of vegetated land with buildings, pavement, and other impervious surfaces that absorb and re-radiate solar energy.

Data centers also generate waste heat as a byproduct of computing operations, which is removed from the buildings through mechanical cooling systems and discharged to the atmosphere. The magnitude and extent of any localized warming from this project or another development are influenced by numerous site-specific factors, including facility size, cooling-system configuration, operating load, atmospheric stability, wind speed and direction, surrounding land cover, vegetation, and regional climate. The Proposed Project is located within a relatively open landscape characterized by substantial setbacks, preserved and proposed vegetation, landscaped areas, and vegetated stormwater management features that promote airflow and reduce heat accumulation compared to densely urbanized settings. Northern Minnesota's cooler climate, seasonal variability, and prevailing meteorological conditions also differ substantially from the warmer urban environments.

The heat rejected by the data center cooling equipment is in the form of hot exhaust air discharged upward from fans elevated off the ground, and this hot exhaust air naturally rises away from the ground level, regardless of outside air temperatures. This heat rise away from ground levels is especially true in low wind conditions, and if there are high winds, this helps dissipate warmer exhaust air into the surrounding atmosphere. While there is some heat expelled into the ambient air, it is not anticipated that heat from the data center would cause heat island effect due to the nature of how this air is exhausted and surrounding features that promote air flow. The design of the data center campus would maintain the natural topography where possible, would implement stormwater management ponds/systems, and would use equipment in highly specialized enclosures to mitigate any potential for minimal heat effects offsite.

There are several climate adaptation measures that the Project Proposer would implement as part of construction and design standards for their data centers. The list is included in **Appendix H** in the adaptations list and summarized below:

- Ensure hazardous materials are stored in temperature-controlled environments to accommodate for high temperatures and heatwaves.
- Use alternative pavement surfaces and materials that are more heat-resistant to reduce heat impacts and surface temperatures
- Regularly monitor the condition of roadways and conduct maintenance to address wear and tear from high temperatures and heatwaves.
- Retain mature trees as part of design and during construction.
- Use cooling technologies to reduce surface temperatures during periods of high temperatures and/or heatwaves.
- Use building construction materials that maintain indoor temperatures and/or are resilient to increasing temperatures during high heat conditions and heatwaves.

- Upgrade the electrical systems to handle increased cooling demand especially from extreme heat events.
- Provide cooling systems (such as reflective coating; high-reflectivity hardscape; decrease impervious surfaces and/or install permeable surfaces; incorporate green infrastructure; maintain and/or expand urban tree canopy) for critical infrastructure or equipment sensitive to overheating during periods of high temperatures and/or heatwaves.
- Increase the frequency of maintenance checks to ensure construction equipment is functioning optimally in high temperatures and during heatwaves.

In addition, prior to construction, the Project Proposer would complete computational thermal studies to verify the expelled heat would not create heat island effects and would be required to incorporate design changes, if needed. Preliminary studies completed to date illustrate the air temperature at ground level along the perimeter of the property is negligibly or minimally affected by the data center heat rejection equipment.

#### *Fire Risk*

Data center failure prevention involves a layered approach focused on proactive maintenance, redundancy, and continuous monitoring. Key strategies include power and cooling redundancy, quarterly battery health checks, automated monitoring systems, and the use of high-performance synthetic lubricants to protect infrastructure.

Fire risk is managed through design, strict adherence to regulations, and ongoing maintenance. All fire protection and emergency egress systems are designed in accordance with the International Building Code, International Fire Code, and City of Hermantown Fire Department requirements, following the most stringent applicable standards.

The facilities are permitted according to local regulations (City of Hermantown), and fire hazards are regularly evaluated. All fire protection systems and equipment are inspected, tested, and maintained in compliance with state legislation and City requirements. The City of Hermantown Fire Department would conduct annual inspections and reporting and assist with mitigating any fire hazards, ensure compliance with the State Fire Code, and provide reporting.

### **MITIGATION PLAN**

---

This Mitigation Plan is submitted as part of the AUAR to provide reviewers and regulators with an understanding of the actions that are advisable, recommended, or necessary to protect the environment and minimize potential impacts by the proposed Project.

This Mitigation Plan is intended to satisfy the AUAR rules that require the preparation of a mitigation plan that specifies measures or procedures that will be used to avoid, minimize, or mitigate the potential impacts of development within the Study Area. Although mitigation strategies are discussed throughout the AUAR document, this plan will be formally adopted by the RGU as their action plan to prevent potentially significant environmental impacts.

The primary mechanism for mitigation of environmental impacts is the effective use of ordinances, rules, and regulations. The plan does not modify the regulatory agencies' responsibilities for implementing their respective regulatory programs nor create additional regulatory requirements. The plan specifies the legal and institutional arrangements that will ensure that the adopted mitigation measures are implemented.

The mitigation measures developed in the AUAR process are outlined in Table 28. These mitigation measures relate to the Project as it is studied in the AUAR, and the Project approvals granted by the City. Additional mitigation measures related to the permits and approvals listed in Table 8 may be included as part of those processes. The Project Proposer will be required to comply with all applicable laws, including all applicable permits.

Where applicable, the Mitigation Plan notes where and how additional applicable permits will address certain mitigation items. Mitigation is defined as measures that could reasonably eliminate or minimize any adverse environmental, economic, employment, or sociological effects of the proposed Project. Additional commitments are also included below that go "above and beyond" what might be captured in otherwise existing processes that the Project Proposer commits to. The plan is formatted consistently with the sections of the AUAR for ease of reference.

Table 28: Mitigation Plan

| Resource Area          | Mitigation or Commitment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                     | Responsible Party | Agency Reviewing to ensure Compliance |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------|
| <b>Land Use</b>        | Related to land use and land alterations, the Project Proposer must obtain from the City of Hermantown a Preliminary and Final Plat for combining parcels or replating land based on phasing of development, Commercial Industrial Development Permit for the final site plan approval, Special Use Permit to allow the data center use, Land Alteration Permit for mass grading / erosion control measures, WCA Permit for wetland impacts and a Building Permit to construct the associated buildings within the site. |                                                                                                                                                                                                                                                                                     | Project Proposer  | City of Hermantown                    |
| <b>Geology/Soils</b>   | Poor soils must be removed, and additional subgrade improvements must be made to support proposed buildings.                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                     | Project Proposer  | City of Hermantown                    |
|                        | <p>The Project Proposer must obtain an individual NPDES Construction Stormwater Permit prior to any grubbing, earthwork or grading activities within the Study Area.</p> <p>All erosion and sediment control regulations would be met, including the rules of the St. Louis River Watershed Comprehensive Watershed Management Plan and the City of Hermantown's erosion and sediment control standards.</p>                                                                                                             |                                                                                                                                                                                                                                                                                     | Project Proposer  | MPCA and City of Hermantown           |
|                        | <p>The Project Proposer must provide construction oversight to ensure designed sediment and erosion control measures are being implemented.</p> <p>The Project Proposer must develop a plan for sediment and erosion control measures that follows BMPs and must implement best management practices for sediment and erosion control measures across the Study Area.</p>                                                                                                                                                |                                                                                                                                                                                                                                                                                     | Project Proposer  | MPCA and City of Hermantown           |
| <b>Water Resources</b> | <b>Groundwater</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <ul style="list-style-type: none"> <li>The Project Proposer must avoid deep excavation near drainageways and topographic lows.</li> <li>The Project Proposer must not use groundwater cutoff walls or subsurface barriers that could intercept lateral groundwater flow.</li> </ul> | Project Proposer  | MPCA, MDNR and City of Hermantown     |

| Resource Area          | Mitigation or Commitment |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Responsible Party | Agency Reviewing to ensure Compliance |
|------------------------|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------|
|                        |                          | <ul style="list-style-type: none"> <li>• The Project Proposer must preserve vegetated buffers adjacent to natural drainage features to the extent practicable</li> <li>• The Project Proposer must complete a pre-construction survey of groundwater elevations. The Project Proposer must report on the status of this survey to the City prior to construction.</li> <li>• The Project Proposer must monitor the groundwater table elevation from on-site wells for the duration of construction. The Project Proposer must report on the status of this monitoring to the City during construction.</li> <li>• The Project Proposer must monitor surface water quality from MDNR Public Watercourse S-002-010-003.4-001 located in the SE corner of the Study Area before and during construction.</li> <li>• The Project Proposer must conduct a spring inventory and survey and groundwater–surface water interaction and thermal evaluation to inform additional mitigation strategies (if any) for coldwater resources.</li> </ul> |                   |                                       |
| <b>Water Resources</b> | <b>Wetlands</b>          | If any wetlands are altered, the Project Proposer must follow a sequencing process for wetland avoidance, minimization, rectification, and mitigation as outlined in the WCA. If any impacts to regulated wetlands are planned as part of the development within the Study Area, the applicable City of Hermantown, WCA, and USACE permits (Section 404 Permit) must be obtained.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Project Proposer  | City of Hermantown and USACE          |

| Resource Area | Mitigation or Commitment |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Responsible Party  | Agency Reviewing to ensure Compliance |
|---------------|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------------------------------------|
|               |                          | A wetland delineation is required for the utility extensions and additional permits and approvals, if required, must be obtained for any identified associated wetland and stream impacts.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | City of Hermantown | City of Hermantown                    |
|               | <b>Wetlands</b>          | Stormwater management facilities, wetlands, buffers, and other environmental protection measures must be maintained for the life of the Project in accordance with applicable permit requirements, approved operations and maintenance plans, and local stormwater management regulations. Future development within the AUAR area must be subject to project-specific permitting review to verify that stormwater management systems, wetland protection measures, and other mitigation features are functioning as intended and continue to protect on-site and downstream resources. Where required by permitting agencies, monitoring, inspection, maintenance, and corrective actions must be implemented to address any identified deficiencies and to maintain long-term environmental performance. | Project Proposer   | MPCA and City of Hermantown           |
|               | <b>Stormwater</b>        | The Project Proposer must construct Stormwater BMPs in accordance with City and Minimal Impact Design Standards (MIDS) requirements as the property is developed. A Construction Stormwater General Permit must be submitted, reviewed, and accepted by MPCA prior to construction.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Project Proposer   | MPCA and City of Hermantown           |

| Resource Area | Mitigation or Commitment |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Responsible Party | Agency Reviewing to ensure Compliance |
|---------------|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------|
|               |                          | To comply with the MIDS requirements, the Project Proposer must prevent excessive thermal and pollutant loading. The stormwater design would utilize engineered filtration media that acts as a heat sink and filter, discharging cleaner and cooler water than conventional retention ponds. Furthermore, the Project would be preserving existing trees and planting new ones adjacent to the proposed stormwater BMPs to provide critical shading and further reduce runoff temperatures. |                   |                                       |
|               |                          | During construction, erosion and sediment control BMPs must be implemented and maintained to prevent impacts to aquatic ecosystems.                                                                                                                                                                                                                                                                                                                                                          | Project Proposer  | MPCA and City of Hermantown           |
|               |                          | The Project Proposer must implement stringent erosion and sediment control measures as part of the stormwater management plans to limit potential negative impacts to rare mussels in the Midway River.                                                                                                                                                                                                                                                                                      | Project Proposer  | MPCA and City of Hermantown           |
|               |                          | BMPs for thermal loading mitigation must be implemented and follow the MPCA's order of preference infiltration/filtration practices, water reuse, biofiltration, wet sedimentation unless site restrictions can be documented to demonstrate that alternate practices meet City stormwater requirements and approval by City.                                                                                                                                                                | Project Proposer  | MPCA and City of Hermantown           |
|               |                          | Any supplementary volume, sediment, and other pollutants associated with stormwater originating offsite that travels through the Study Area must be accounted for in the final design of stormwater BMPs.<br><br>Hydrologic connectivity must be maintained through direct drainage and piped overflows, mitigating effects on groundwater-surface water interactions.                                                                                                                       | Project Proposer  | MPCA and City of Hermantown           |

| Resource Area | Mitigation or Commitment |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Responsible Party | Agency Reviewing to ensure Compliance |
|---------------|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------|
|               |                          | All treated stormwater discharge must be directed to larger, existing wetland areas for additional buffering and groundwater recharge, to ensure no direct discharge into a trout stream.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                   |                                       |
|               |                          | <p>The Project Proposer must coordinate with the MPCA and MDNR to ensure compliance with anti-degradation policies and trout stream protections, including with respect to Adolph Creek, Rocky Run, Midway River, and associated tributaries.</p> <p>Any future development adjacent to these water features must implement protection of the riparian corridor, using BMPs and adhere to MESBOAC (Minimize, Evaporate, Store, Bioretain, Offset, Allow, and Convey) principles. These standards are essential for protecting fish passage, reducing sediment and chloride pollution. If in-water work is required, work windows restrictions must be followed to prohibit in-water work from Sept 15-June 30 annually and the implement natural stream channel design and fish passage considerations through constructed stream crossings.</p> | Project Proposer  | MPCA, MDNR, and City of Hermantown    |
|               |                          | <p>The Project Proposer must use chloride conscious design to minimize salt usage by the development once operational. This could include considering potential locations of snow melt, ice formation, and tree shading to minimize impacts on receiving water bodies.</p> <p>All winter maintenance contractors for the development must be MPCA Smart Salting Level 1 Certified.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Project Proposer  | MPCA and City of Hermantown           |
|               |                          | To minimize the impact of snow melt on the adjacent natural resources, the Project Proposer must stockpile and manage snow in the proposed landscape.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Project Proposer  | MPCA and City of Hermantown           |

| Resource Area          | Mitigation or Commitment   |                                                                                                                                                                                                                             | Responsible Party                       | Agency Reviewing to ensure Compliance |
|------------------------|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|---------------------------------------|
|                        | <b>Water Appropriation</b> | The Project Proposer must obtain an MDNR temporary water appropriation permit for any temporary dewatering that may be needed for construction.                                                                             | Project Proposer                        | MDNR                                  |
|                        |                            | The Project Proposer must obtain an MDNR utility crossing permit for any utilities planned to cross Minnesota public waters.                                                                                                | Project Proposer                        | MDNR                                  |
|                        |                            | If any unknown wells are found within the Study Area, the Project Proposer must seal the wells at its own expense, and the sealings must be sent to the MDH, if the termination of the well permit is requested.            | Project Proposer                        | MDH                                   |
|                        |                            | Construct the extension of the water supply and distribution system to the site in accordance with MDH standards and would require a watermain installation permit from the Department of Health as well as City approvals. | City of Hermantown and Project Proposer | City of Hermantown, MDH               |
|                        |                            | Proposed development must be limited to the water use volumes studied in the AUAR. If plans change and additional water appropriations are needed, an AUAR update would be required.                                        | City of Hermantown and Project Proposer | City of Hermantown                    |
|                        | <b>Wastewater</b>          | Infrastructure improvements needed to expand the capacity of the wastewater system to the site require a Sanitary Sewer Extension Permit from MPCA as well as City approvals.                                               | City of Hermantown and Project Proposer | MPCA and City of Hermantown           |
| <b>Water Resources</b> |                            | Proposed development must not exceed the wastewater discharge volumes studied in the AUAR. If plans change and additional water appropriations are needed, an AUAR update would be required.                                | City of Hermantown and Project Proposer | City of Hermantown                    |

| Resource Area                             | Mitigation or Commitment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Responsible Party | Agency Reviewing to ensure Compliance                                        |
|-------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------------------------------------------------------------|
| <b>Contamination/<br/>Hazardous Waste</b> | Demolition-related waste material, such as wood, concrete, and glass, would be either recycled or disposed in the proper facilities in accordance with state regulations and guidelines. If fill soils, which could include demolition debris and other wastes, are encountered during earthwork or redevelopment, then additional assessment of the fill soils may be required to evaluate appropriate management and/or disposal requirements. A hazardous building materials survey should be conducted prior to commencement of those activities to identify the presence of asbestos-containing materials, lead-based paint, or regulated wastes that may require special handling, abatement, or disposal. This would require a permit from MPCA for demolition prior to construction. | Project Proposer  | MPCA and City of Hermantown                                                  |
|                                           | Development would generate construction-related waste materials such as wood, packaging, excess materials, and other wastes. All waste must be either recycled or disposed in the proper facilities in accordance with state regulations and guidelines. Additionally the Project Proposer must recycle waste paint during construction and recycle general construction waste to avoid sending materials to landfills.                                                                                                                                                                                                                                                                                                                                                                      | Project Proposer  | City of Hermantown                                                           |
|                                           | For solid waste generated from the completed Project, a source recycling/separation plan must be implemented, and wastes that cannot be recycled must be managed in accordance with applicable state regulations and guidelines.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Project Proposer  | MPCA, Western Lake Superior Sanitary District (WLSSD), or City of Hermantown |
|                                           | The Project Proposer must provide the City with proof that it has obtained a minimum of UL 2799 or equivalent certification within 18 months of start of operations.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Project Proposer  | City of Hermantown                                                           |
|                                           | The Project Proposer must complete Response Action Plan and Construction Contingency Plan prior to construction and coordinate with the MPCA on safe handling and disposal of any contamination and hazardous materials found on the site prior to and during construction.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Project Proposer  | MPCA                                                                         |

| Resource Area                                                                | Mitigation or Commitment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Responsible Party | Agency Reviewing to ensure Compliance                             |
|------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------------------------------------------------------------|
|                                                                              | If the proposed Project results in the need for more than 1,000,000 gallons of fuel storage for backup generators and may exceed the threshold for air emissions, an EAW would be required for these components of the Project per Minnesota Rules 4410.4300. As part of the EAW process, a 30-day agency and public review and comment period would occur.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Project Proposer  | MPCA                                                              |
|                                                                              | The Project Proposer must prepare a spill prevention plan for any fuel stored on site.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Project Proposer  | City of Hermantown, EPA <sup>64</sup>                             |
| <b>Fish, Wildlife, Plant Communities, and Sensitive Ecological Resources</b> | State requirements necessitate the control and spread of state listed noxious weeds and/or invasive weeds if encountered prior to construction. Methods to avoid spreading noxious weeds and/or invasive species must be incorporated into Project specifications and/or SWPPP when developed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Project Proposer  | City of Hermantown, MPCA, St. Louis County Agricultural Inspector |
|                                                                              | <p>Invasive species must be controlled during site construction. Additionally, appropriate measures must be taken to control the spread of invasive species during construction and landscaping:</p> <ul style="list-style-type: none"> <li>• Inspecting construction equipment and removing any visible plant, seeds, mud, dirt clods, and animals when arriving and leaving a site.</li> <li>• Using native seed mixes for revegetation whenever possible to encourage non-invasive plant communities in areas of bare soil post-construction.</li> <li>• Using mulch, soil, gravel, etc., that is free of invasive species whenever possible.</li> <li>• Inspecting soil and plant material during planting for signs of invasive species and removing or destroying the invasive species or the plant and associated soil if the invasive species cannot be separated out.</li> </ul> | Project Proposer  | City of Hermantown, MPCA, St. Louis County Agricultural Inspector |

<sup>64</sup> <https://www.epa.gov/oil-spills-prevention-and-preparedness-regulations/spill-prevention-control-and-countermeasure-19>

| Resource Area              | Mitigation or Commitment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Responsible Party | Agency Reviewing to ensure Compliance |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------|
|                            | USFWS requires that tree clearing activities be restricted to winter months (October 1 – April 14) for a Not Likely to Adversely Affect Determination for the NLEB; thus not requiring formal consultation or mitigation. Because no federally protected bat species, including NLEB, were identified by IPaC, federal restrictions do not apply. The MDNR recommends that tree removal be avoided from June 1 - August 15, which the Project Proposer will commit to.<br><br>The Project Proposer must not use Ash species in the development, and must conduct tree removal for diseased trees, such as ash trees displaying EAB. With the increase of Emerald Ash Borer (EAB) infestations in the area, the MDNR recommended ensuring that Ash is not a tree species utilized in this development and recommended that tree removal be conducted for diseased trees such as ash trees displaying Emerald Ash Borer to limit the potential spread. | Project Proposer  | City of Hermantown                    |
|                            | The Project Proposer must reseed herbaceous areas with native seed mixes to the greatest extent feasible, to mitigate impacts to the Monarch Butterfly and Suckley's Cuckoo Bumble Bee.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Project Proposer  | City of Hermantown                    |
|                            | The Project Proposer must submit a Natural Heritage Review request for MDNR concurrence on a yearly basis to stay up to date on protected species mitigation as individual construction projects are planned and pursued within the Study Area.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Project Proposer  | City of Hermantown                    |
| <b>Historic Properties</b> | The Project Proposer must develop an Inadvertent Discovery Plan and follow the Inadvertent Discovery Plan during all ground-disturbing construction activities associated with development.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Project Proposer  | City of Hermantown                    |
|                            | The Project Proposer and City of Hermantown must continue coordination with Tribes that have expressed interest in, or have cultural affiliation with, the Study Area throughout the remainder of the Project development.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Project Proposer  | City of Hermantown, Tribes            |

| Resource Area                         | Mitigation or Commitment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Responsible Party | Agency Reviewing to ensure Compliance |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------|
| <b>Visual</b>                         | Screening and other landscaping measures such as vegetation, screening walls and grading must be used in site design to minimize the views from existing residences, and other buildings, in the surrounding area.                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Project Proposer  | City of Hermantown                    |
|                                       | Development must conform with the city ordinances <sup>65</sup> for building height, building form, and lighting intensity to avoid impacts to neighboring properties and species. Project Proposer must follow guidance from the USFWS to minimize blue light, uplight, and backlight.                                                                                                                                                                                                                                                                                                                                                                                      | Project Proposer  | City of Hermantown                    |
| <b>Air</b>                            | Construction would generate temporary fugitive dust emissions. These emissions must be controlled by sweeping or watering as appropriate or as prevailing weather and soil conditions dictate. Additionally, the Project Proposer must develop a Fugitive Dust Control Plan prior to construction.                                                                                                                                                                                                                                                                                                                                                                           | Project Proposer  | City of Hermantown, MPCA              |
|                                       | An air permit and additional environmental review may be required for backup generators. This process would include a public review and comment period as part of the environmental review.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Project Proposer  | City of Hermantown, MPCA              |
| <b>GHG Emissions/Carbon Footprint</b> | <p>To limit GHG emissions/carbon footprint, the Project Proposer must:</p> <ul style="list-style-type: none"> <li>● Use energy efficient appliances, equipment, and lighting</li> <li>● Use energy efficient building shells</li> <li>● Implement waste best management practices and recycle and compost appropriate material when applicable</li> <li>● Utilize on-site landscaping to promote the infiltration/filtration of stormwater runoff</li> <li>● Trees and tree trenches, and additional landscaping would be planted to improve local air quality, absorb greenhouse gas emissions, and provide airflow to mitigate against urban heat island effect</li> </ul> | Project Proposer  | City of Hermantown                    |

<sup>65</sup> Chapter 5 of the Hermantown Ordinances governs Land Use Regulations, and is available at [ZONING-CHAPTER-5-LAND-USE-REGULATIONS-1.pdf](#)

| Resource Area | Mitigation or Commitment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Responsible Party                       | Agency Reviewing to ensure Compliance |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|---------------------------------------|
|               | <ul style="list-style-type: none"> <li>• Provide electric vehicle ready charging infrastructure</li> <li>• Purchase of renewable energy credits to offset CO2 emissions</li> <li>• If the Project uses backup generators, backup generators for the site must be designed to be capable of utilizing renewable diesel as a fuel source.</li> </ul> See <b>Appendix H</b> for full list of GHG mitigation measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                         |                                       |
| <b>Noise</b>  | The Project Proposer must comply with City and State noise regulations. The City of Hermantown regulates the hours of operation for construction equipment through development agreements and typically limits construction activities from 10 p.m. to 7 a.m.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Project Proposer and City of Hermantown | City of Hermantown, MPCA              |
|               | Noise mitigation must be employed to bring Project-related noise levels into compliance with state standards. Mitigation measures, including but not limited to the following examples, may be included in the final design to ensure compliance with state noise standards: <ul style="list-style-type: none"> <li>• Comprehensive chiller enclosures, including compressor covers, fan discharge stacks with integrated metal silencers, and intake silencers;</li> <li>• Operational controls;</li> <li>• Noise walls; or</li> <li>• Landscaping (earth berms)</li> </ul> If the Project includes backup generators, the Project Proposer may only complete backup generator testing activities between 8:00 am and 5:00 pm, Monday – Friday. Additional noise modeling must be completed prior to issuance of a building permit to demonstrate that the Project-related nighttime L <sub>50</sub> noise levels would be 47 dBA or less and provide cross-frequency attenuation. | Project Proposer                        | City of Hermantown, MPCA              |

| Resource Area  | Mitigation or Commitment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Responsible Party | Agency Reviewing to ensure Compliance             |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------------------|
| Transportation | <p>The improvements are intended to represent the minimum level of infrastructure investment that would be needed to meet acceptable level of service standards. Additional roadway and non-motorized improvements, beyond the minimum level, may be identified to accommodate specific development needs that are identified within the AUAR area. Primary improvements include:</p> <ol style="list-style-type: none"> <li>1. Intersection of Morris Thomas Rd (CSAH 56) and development driveway. <ul style="list-style-type: none"> <li>• Construct a westbound dedicated left-turn lane on Morris Thomas Road at the driveway.</li> <li>• Driveway would be stop controlled.</li> </ul> </li> <li>2. Intersection of Midway Rd (CSAH 13) and Morris Thomas Rd (CSAH 56) <ul style="list-style-type: none"> <li>• Construct a northbound dedicated left-turn lane on Midway Road at Morris Thomas Road.</li> <li>• Construct eastbound dedicated left-turn and right-turn lanes on Morris Thomas Road at Midway Road. Storage for the right-turn lane would ensure vehicles are not occluded from accessing the right-turn lane during 95 percent of the time.</li> <li>• Construct a southbound right-turn lane on Midway Road at Morris Thomas Road.</li> <li>• Install a permanent traffic signal.</li> <li>• Install conduit/cable to coordinate the signal controller with the railroad crossing controller (USDOT #251905S) and the signal controller at the US 2 signal system.</li> </ul> </li> <li>3. Railroad crossing (DOT #251905S) <ul style="list-style-type: none"> <li>• Install a traffic queue cutter signal system that would face southbound Midway Road traffic and be located immediately north of Old Hwy 2</li> </ul> </li> </ol> | Project Proposer  | City of Hermantown,<br>St. Louis County,<br>MnDOT |

| Resource Area | Mitigation or Commitment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Responsible Party | Agency Reviewing to ensure Compliance |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------|
|               | <ul style="list-style-type: none"> <li>The need for railroad crossing upgrades would be coordinated with the MnDOT Rail Office (Paul DeLaRosa, paul.delarosa@state.mn.us).</li> </ul> <p>4. Intersection of US 2 and Midway Road (CSAH 13)</p> <ul style="list-style-type: none"> <li>Install conduit/cable to coordinate the signal controller with the railroad crossing controller (USDOT #251905S) and the signal controller at the Midway Road/Morris Thomas Road signal system.</li> </ul> <p>5. Intersection of US 2 and St. Louis River Road</p> <ul style="list-style-type: none"> <li>Construct a northwest bound dedicated left turn lane to accommodate additional site traffic.</li> </ul> <p>6. Signal timing</p> <ul style="list-style-type: none"> <li>Develop optimized signal timing models for both the Midway Road/Morris Thomas Road and US 2/Midway Road signal systems to accommodate non-train and train events.</li> </ul> <p>7. Travel Demand Management (TDM)</p> <ul style="list-style-type: none"> <li>A plan completed prior to the beginning of construction would be included in Project bid documents, agreements, and notices to sub-contractors, suppliers, and employees. The TDM plan would direct all traffic traveling to the site from US Highway 2 southeast of St. Louis River Road to turn onto St. Louis River Road and enter from the south along Midway Road instead of turning left onto Midway Road from US Highway 2.</li> <li>If the TDM plan does not prove to be effective at limiting queues at Midway Road &amp; US Highway 2, additional mitigation such as variable message signs or other advanced warning during train events could be implemented at US Highway 2 &amp; St. Louis River Road.</li> </ul> <p>All AUAR mitigation must be coordinated with the St. Louis County planning efforts for potential grade separation rail crossings along Midway Road.</p> |                   |                                       |

| Resource Area | Mitigation or Commitment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Responsible Party | Agency Reviewing to ensure Compliance                  |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|--------------------------------------------------------|
| <b>Other</b>  | New transmission lines from the existing Arrowhead Substation to the proposed data center campus must be permitted through a permitting process that includes environmental review with the City of Hermantown and/or Solway Township, or the MPUC as the RGU prior to approval and construction.                                                                                                                                                                                                                                                                            | Minnesota Power   | City of Hermantown and/or Solway Township, or the MPUC |
|               | <p>Prior to the start of construction, the Project Proposer must submit to the City proposed complaint reporting procedures that will be used to receive and respond to complaints. The complaint reporting procedures must include a contact for complaints and complaint reporting, a process for documenting and responding to complaints, and a process for addressing unresolved or longstanding complaints.</p> <p>The approved complaint reporting procedures must be mailed to landowners within a 0.5 mile radius of the Project before construction commences.</p> | Project Proposer  | City of Hermantown                                     |