



Hermantown Data Center – Land Use Application

Hermantown, MN

August 2026

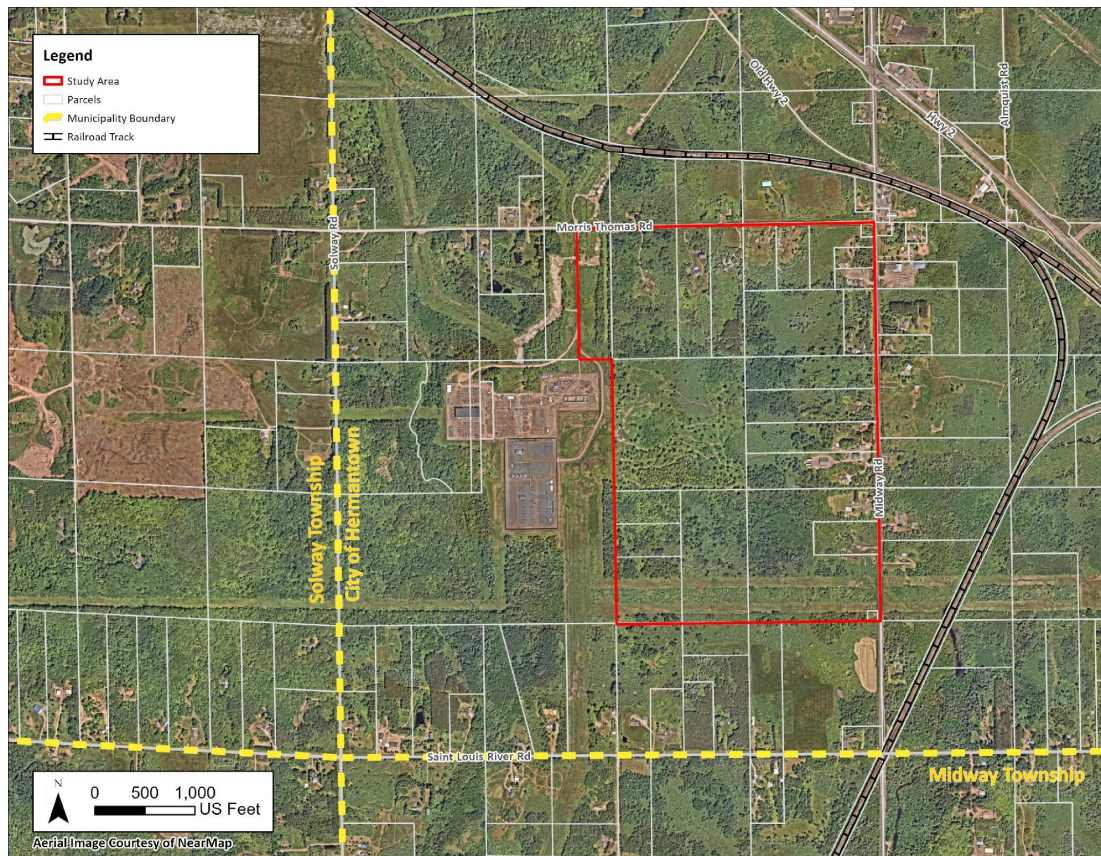


Site Selection

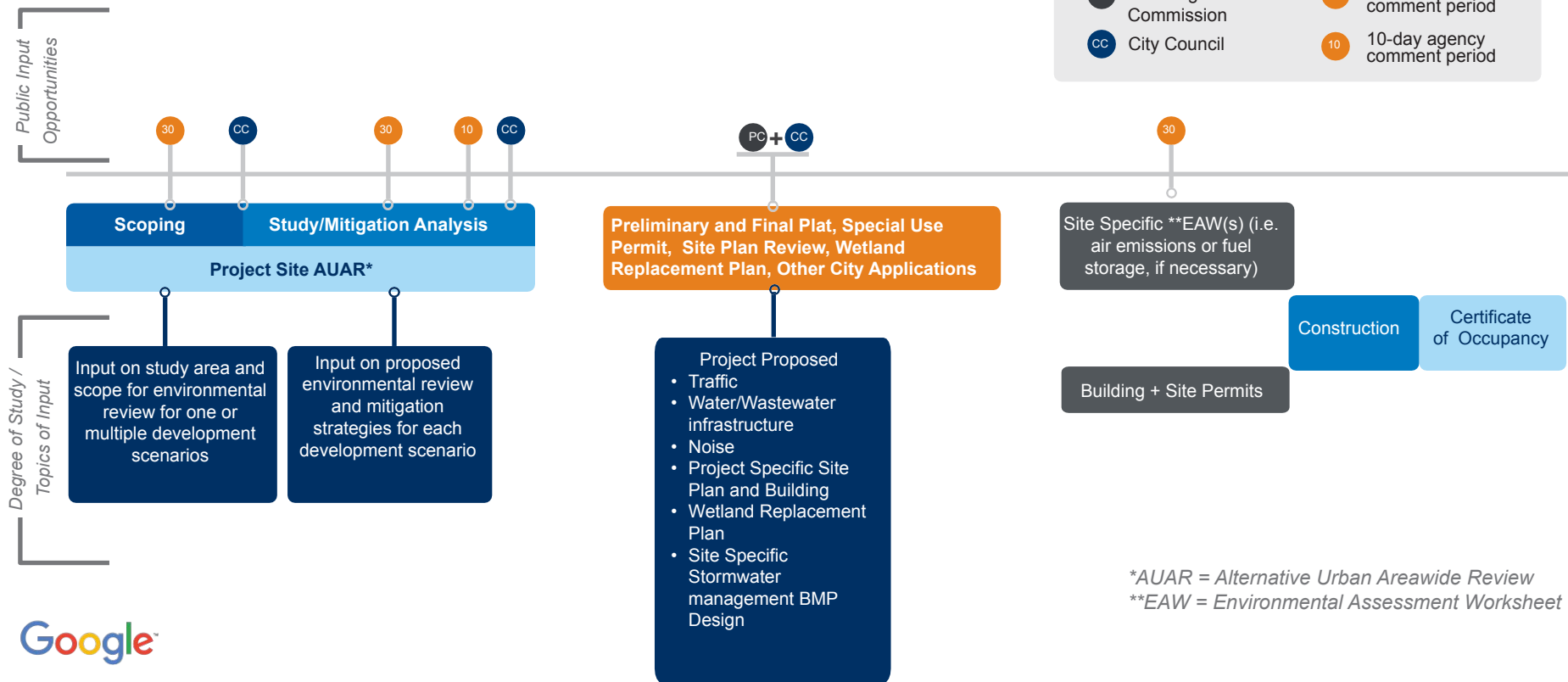
Google has evaluated data center sites across the country. Minnesota's commitment to clean energy and availability of clean energy resources from Minnesota Power has made this an attractive site for development for a data center.

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



Data Center Development Process



Additional Land Use Reviews Beyond the City of Hermantown

The proposed development could include elements that may be subject to separate permitting and/or separate environmental review by other Responsible Governmental Units (RGU) or federal agencies, depending on final design and applicable thresholds. These could include:

Air Permit

An air permit and additional environmental review may be required for backup generators, which would be completed with the Minnesota Pollution Control Agency (MPCA) or the Minnesota Public Utilities Commission (PUC) as the RGU. The trigger for this is described in Minn. Rules 4410.4300, Subps. 3 and 15. This process will 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 will require an environmental review and route permit process led by Minnesota Power, with the City of Hermantown as the LGU. A public scoping meeting for the Environmental Assessment (EA) was held on August 10, 2026 and the Draft EA is anticipated to be published this fall.

Each of these processes (if required) would include a public review and comment period as part of the environmental review.

Proposed Development

LOCATION & LAND AREA

234-Acre Project Site

Sited at the Southwest Corner of Morris Thomas Road and Midway Road in the City of Hermantown.

DEVELOPMENT COMPOSITION

1.66 Million Square Feet Total

- Three data center buildings & three mechanical buildings
- One two-story office building & one auxiliary / fire pump house
- Supporting Site Improvements: Parking, utilities, substations, transmission lines, stormwater management, and landscaping to support the facility.

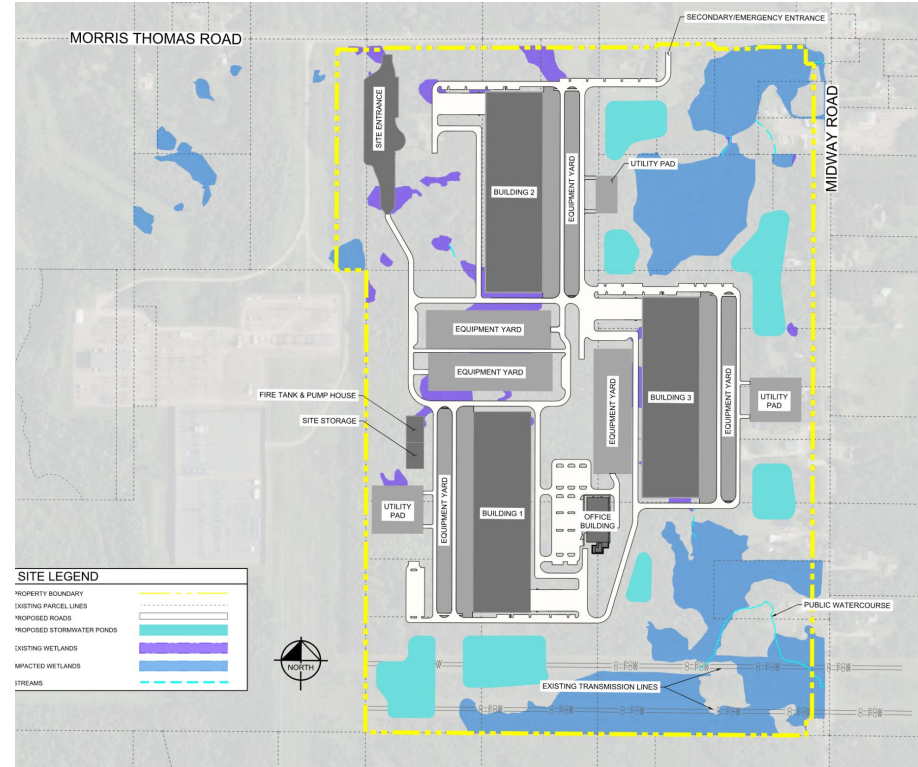


Figure 3. Proposed Development Site Layout

Final Plat

Proposed Developable Parcels

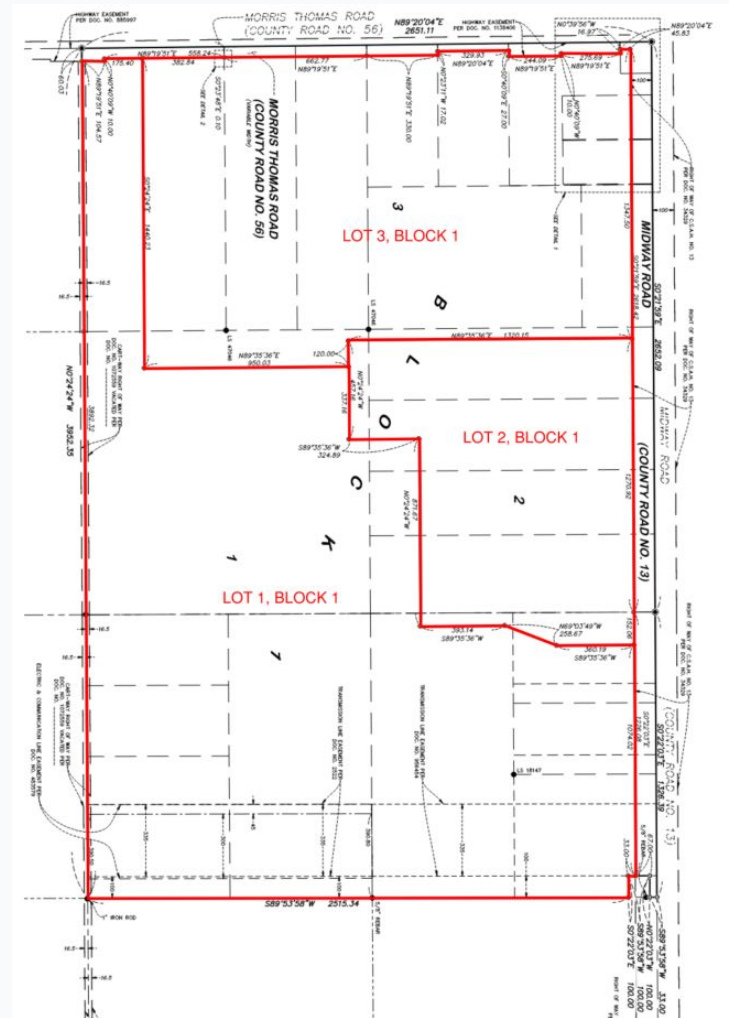
LOT 1
123.6
Acres

LOT 2
33.7
Acres

LOT 3
71.7
Acres

Subdivision: 1 lot per proposed principal data center building.

Environmental: Stormwater & protected wetlands will be located within buildable lots.



Site Plan

SITE ACCESS & SECURITY

Primary Access: Morris Thomas Road (NW Corner)

Emergency Access: Morris Thomas Road (900' W of Midway)

Security: Secure perimeter w/ gated access control at primary entry

Fencing: 10 foot, black decorative iron, anti-climb fence

INFRASTRUCTURE & UTILITIES

Power: 230 kV Transmission Corridors from Arrowhead Substation

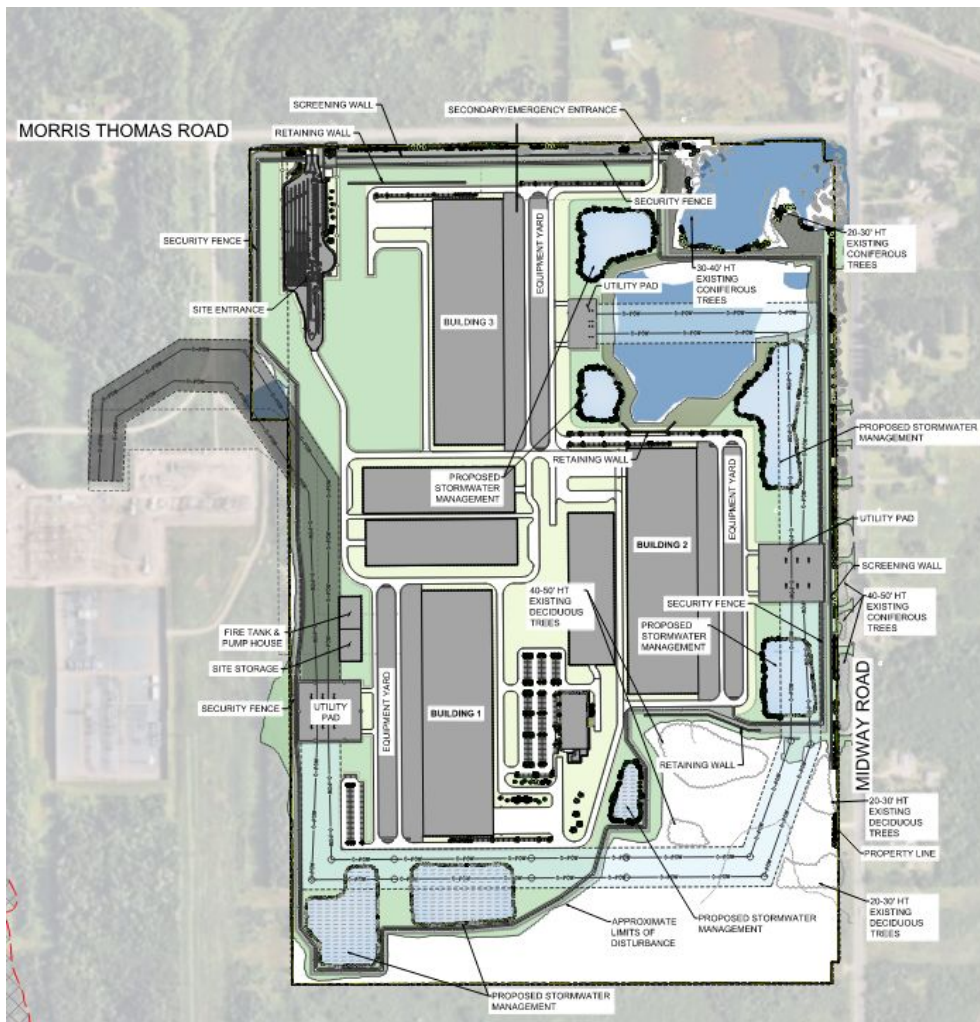
Substations: Private substations at each building

Mechanical Equipment: Sited internally to enhance buffer from neighboring properties

Facilities: 570 parking spaces | Screening & Noise Walls

BLM ZONING STANDARDS COMPLIANCE

Min Lot Area • Lot Width • Front Yard Setback • Rear Yard Setback • Side Yard Setback • Max Lot Coverage



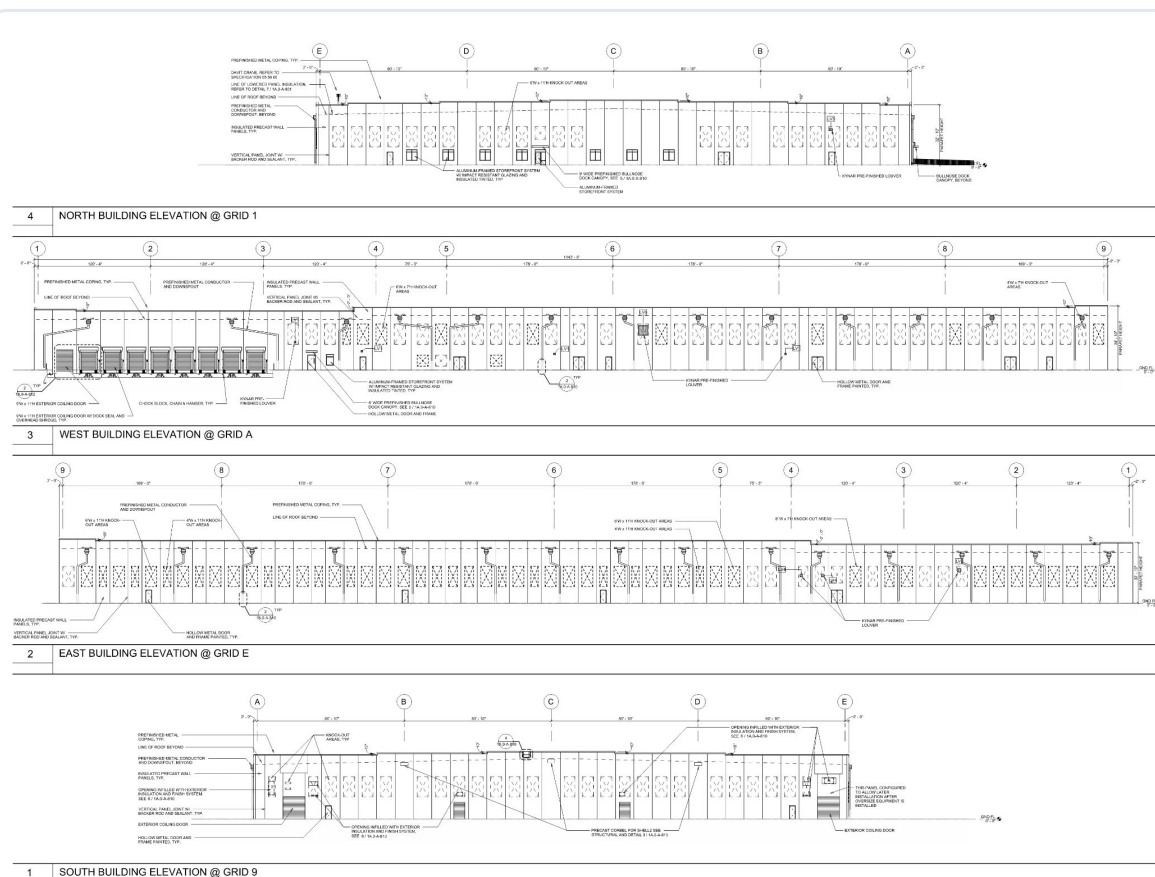
Architectural Elevations - DATA CENTER BUILDINGS

Building Height

~33 Feet (1 Story)

Exterior Facade

Precast Concrete



Architectural Elevations - MECHANICAL

Roof Height

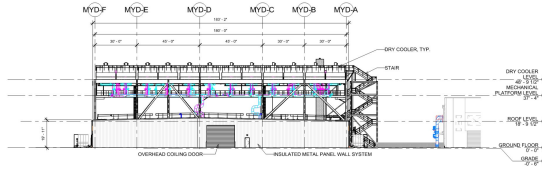
~19 Feet (1-Story)

Equipment Height

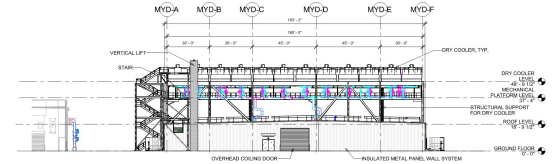
~56 Feet

Exterior Facade

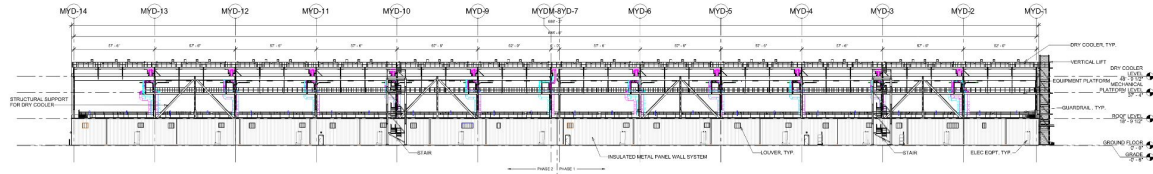
**Metal Panel
Facade**



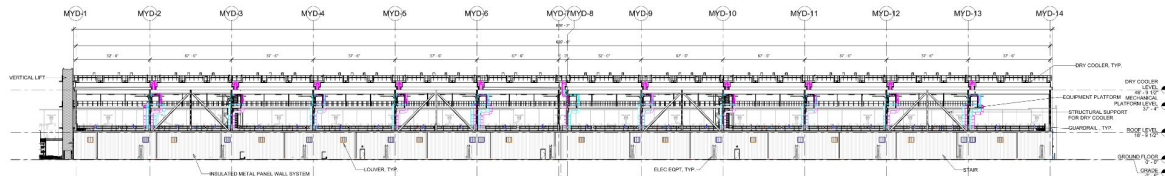
3 BUILDING ELEVATION - SIDE 1



4 BUILDING ELEVATION - SIDE 2



1 BUILDING ELEVATION - REAR



2 BUILDING ELEVATION - FRONT

Architectural Elevations - OFFICE BUILDING

Building Height

~41 Feet (2-Story)

Exterior Facade

**Metal Panel
Facade**



Landscaping/Screening Plan

EXISTING:

-  Preservation of 20-50 foot buffer along Midway Road

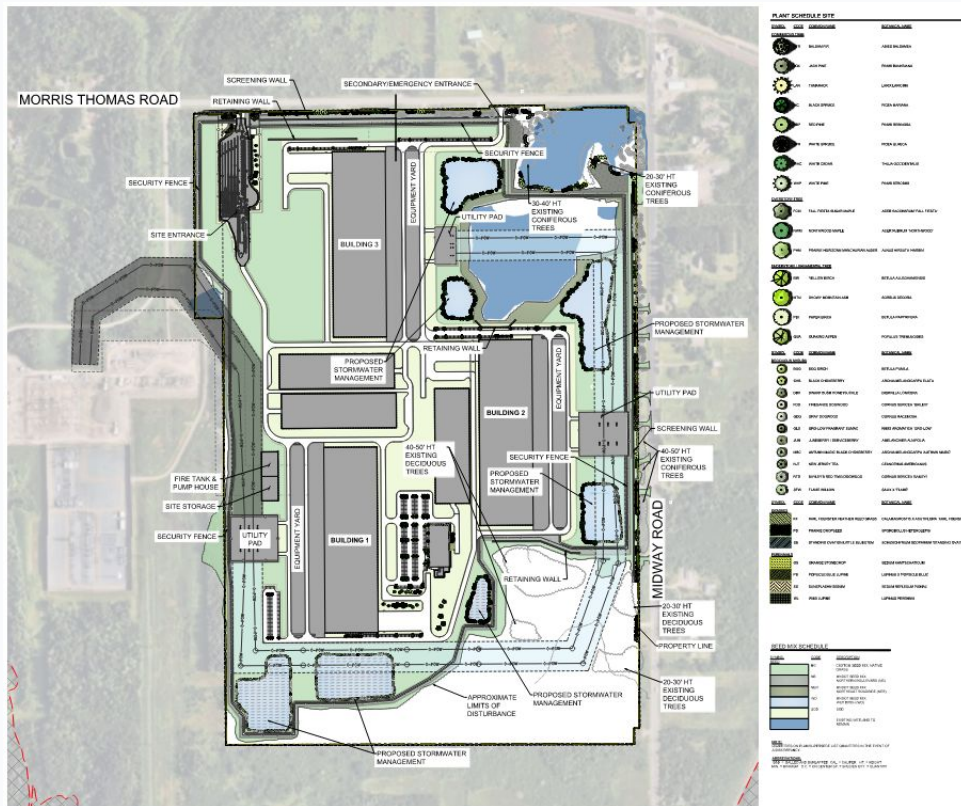
PROPOSED:

- 
Coniferous Trees: Pines, Cedar, Fir, Spruce, & Tamarack
- 
Overstory Trees: Maple, Alder, & Prairie Horizon
- 
Understory Trees: Birch, Ash, & Ornamental species
- 
Screen / Noise Wall: Walls along Midway Road and Morris Thomas Road

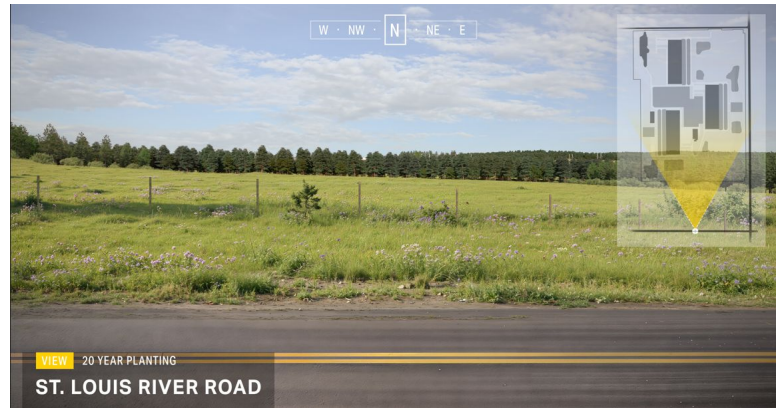
NATIVE PLANTINGS

Eco-friendly vegetation across perimeter and stormwater basins

Seed Mixes: Utilizing State Pollinator Seed Mix for natural ecological support



Visualizations



AUAR / Proposed Project Comparisons

	AUAR	Proposed Project
Building SF	1.80 mil square feet	 1.66 mil square feet 
# of Data Centers	4 Data Center Buildings	 3 Data Center Buildings 
Wetland Impacts	32 Acres	 19.89 Acres 
Impervious Surface Area	115 Acres	 79.1 Acres 
Stormwater Green Infrastructure Area	15 Acres	 19.2 Acres 
Number of Trees Planted	245 trees	 661 trees 
Disturbed Acreage	195 Acres	 180 Acres 
Volume of Earth Work	2.3 Million Cubic Yards	 1.85 Million Cubic Yards 

Grading Plan

SITE CHARACTERISTICS & DRAINAGE

Topography: Site generally grades north to south.

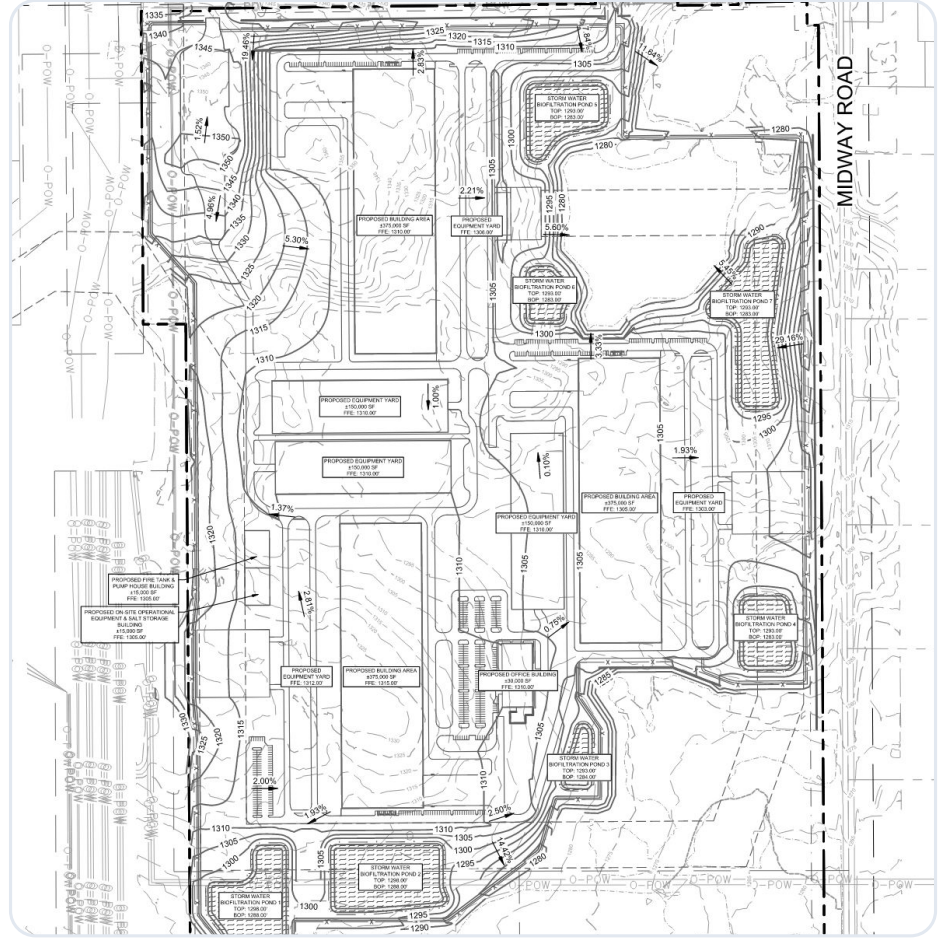
Discharge: Two primary discharge points to northeast & southeast protected wetland complexes, draining downstream to Midway River.

Soils: On-site soils are generally sandy lean clay with very limited infiltration.

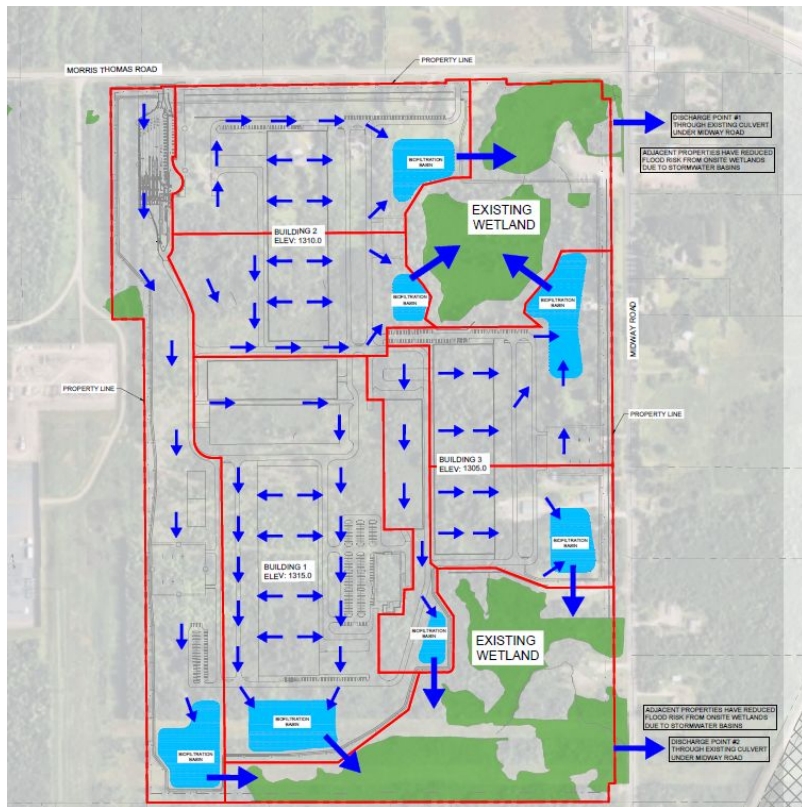
GRADING & EARTHWORK

Scope: ~180 acres to be graded, moving approximately 1.85 million cubic yards of material.

Cut & Fill: Balanced site grading using cuts in the NW (~30' avg) and SE (~10' avg) to fill the middle (~15' fill).



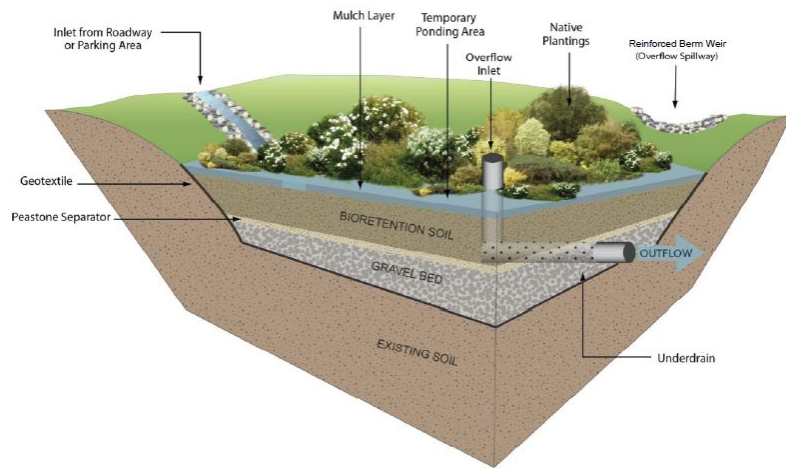
Stormwater Management



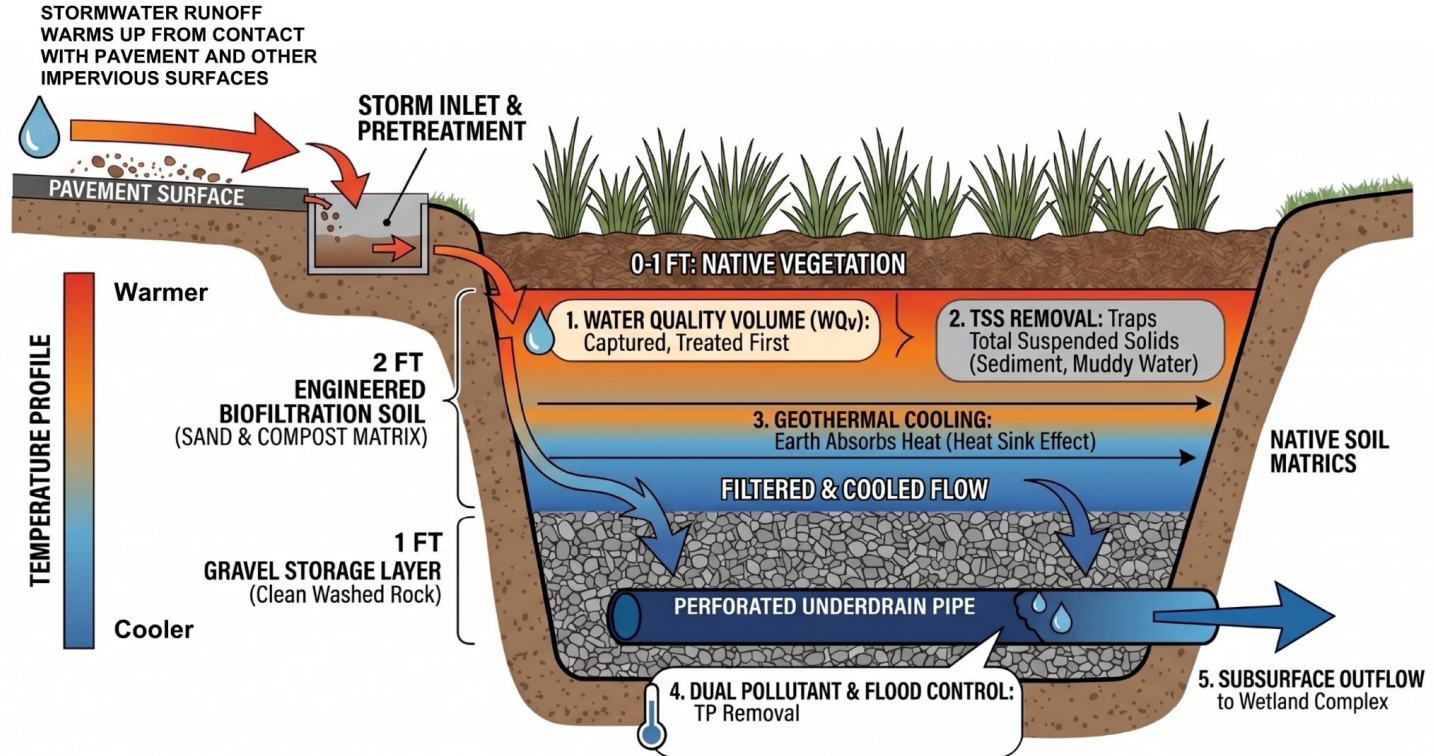
The Mitigation

Advanced biofiltration basins with underground drains.

- Flood control within basin storage
- Water Quality within filtration media
- Native and perennial plant uptake
- Deep filtration cools water before outlet



Engineered Biofiltration Diagram



Summary of Regulations Regarding Stormwater

City of Hermantown

- Provide stormwater treatment for 1 inch of runoff from the new and fully reconstructed impervious surfaces
- No increase in TSS or TP (Pollutants)
- No increase in Runoff Rates for the 2-, 10-, and 100 year rainfall events
- Minimize increase in Temperature for the 1-year and 2-year design storms.

Minnesota Pollution Control Agency

- Enhanced construction stormwater management BMPs in the National Pollutant Discharge Elimination System Permit

SITE STORMWATER CALCULATIONS

RATE ATTENUATION			
	2 Year (2.70 in.)	10 Year (4.00 in.)	100 Year (6.40 in.)
	Discharge Point#1 – NE		
Pre-Development Rate (CFS)	16.77	21.29	26.51
Post-Development Rate (CFS)	16.02	19.11	25.24
	Discharge Point #2 – SE		
Pre-Development Rate (CFS)	22.02	54.84	207.44
Post-Development Rate (CFS)	14.84	30.29	62.82

WATER QUALITY MODELING RESULTS		
	Annual TSS Discharge (lbs)	Annual TP Discharge (lbs)
Pre-Development Conditions	6952.9	38.27
Post Development Conditions	2563.3	28.39

Wetland Impacts and Mitigation

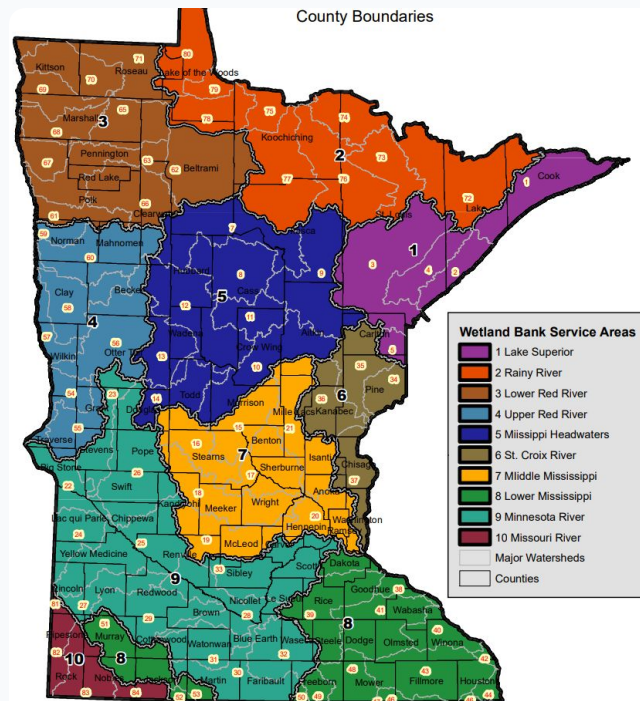
Wetland & Waters Avoidance

Proposed site layout avoids permanent impacts to:

- DNR Public Watercourse
- USACE jurisdictional wetlands
- Preserves W-1, a large wetland complex with off-site connectivity

Proposed Mitigation

- **Wetland Impact:** Proposed site layout will impact approximately 19.75 acres of wetland.
- **Mitigation Ratio:** Permanent impacts will be mitigated through credit purchases at a 1:1 ratio.
- **Mitigation Bank:** Credits purchased from Lake Superior Mitigation Bank / St. Louis County (Acct: 1609).



Groundwater Management

KEY POLICY: No Groundwater consumption is proposed for the project.

Spring Survey & Thermal

Spring & Seep Mapping

Field reconnaissance survey completed on adjacent consenting properties to identify and map undocumented springs, seeps, or groundwater discharge features.

Thermal Connection Study

Completing a thermal surface water / groundwater connection study as part of the MPCA General Construction Stormwater Permit prior to land disturbance.

Precautionary Design

Avoid Cutoff Wells

No groundwater cutoff wells will be utilized in the project design to preserve natural flow dynamics.

Hydrologic Connectivity

Maintain connectivity to existing wetlands to prompt natural filtering and groundwater recharge.

Buffer Preservation

Prioritizing dedicated buffer preservation around sensitive site boundaries.

Dewatering & Monitoring

- ❑ **Pre-Con Survey:** Developer will complete survey of elevations and report to City. Developer will also voluntarily survey any properties within ½ mile of project site.
- ❑ **Observation Wells:** 6 wells installed along northern, eastern, and western boundaries.
- ❑ **Active Monitoring:** Continuous monitoring of groundwater elevations during construction.
- ❑ **Safety Shutdown:** If dewatering drops levels >5 ft for 72 consecutive hours, operations cease immediately.
- ❑ **DNR Permit (if Required):** Construction Vol >10k gal/day or 1M gal/year require a temporary DNR water appropriation permit.

Water & Wastewater Management

Use	Maximum Flow Volume (gallons)	Frequency	Treatment Location
Domestic Wastewater	50,000	Daily	WLSSD
Commissioning Water	1.7 million (per building, up to 3 buildings)	Once	WLSSD (if approved) or Offsite Disposal
Cooling System Maintenance	2,000 (per building, up to 3 buildings)	Up to 12 times annually	WLSSD (if approved) or Offsite Disposal

Non-Evaporative Closed Loop Liquid Cooling

- Non-consumptive water usage: Completely sealed system.
- Heat Absorption: Uses water and corrosion inhibitors to circulate and safely absorb heat from servers, transferring captured heat to a cooling unit before recirculating.

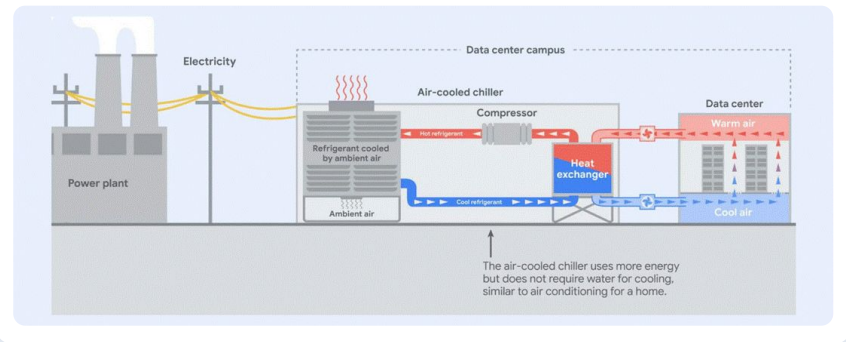
Wastewater Management

Domestic Discharges

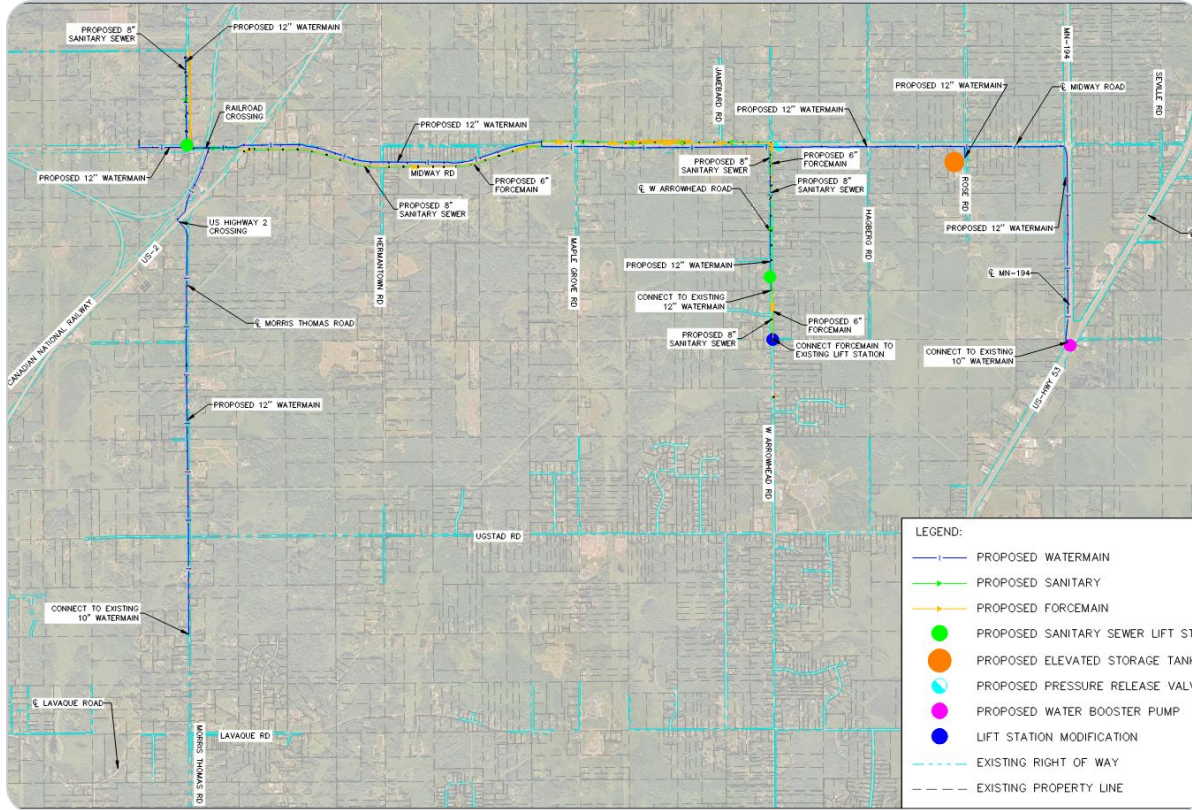
- Standard sanitary waste from daily facility operations.
- Includes: Sinks, toilets, showers, kitchens, and laundry.

Discharge Characteristics & Routing

- Consistent with commercial and light industrial discharges.
- Discharged to City of Hermantown, flowing to WLSSD.



Public Utility Corridors & Improvements



Water Infrastructure

Water and Sanitary would be privately funded and extended to the site by the developer and turned over to the City upon completion.

Sanitary Sewer Project

The sewer would be privately funded and extended to the site by the developer and turned over to the City upon completion.

AUAR / Proposed Project Comparisons

	AUAR	Proposed Project
Cooling Technology	Non-Evaporative Closed Loop System	Non-Evaporative Closed Loop System 
Domestic Daily Water Usage	50,000 gallons per day	50,000 gallons per day 
Construction Commission Water Demand (1x upon completion of construction)	6.8 million gallons (1.7 million gallons per building - up to 4 bldgs)	↓ 5.1 million gallons (1.7 million gallons per building - 3 bldgs) 
Monthly Cooling System Maintenance Water Demand	8,000 gallons (2,000 gallons per building, up to 4 buildings)	↓ 6,000 gallons (2,000 gallons per building, 3 buildings) 
Stormwater Best Management Practices	Infiltration, Water Reuse, Biofiltration, or Wet Sedimentation	7 biofiltration basins 

Photometric Site Plan

Project Lighting Design

✓ Directed downward & away from property lines

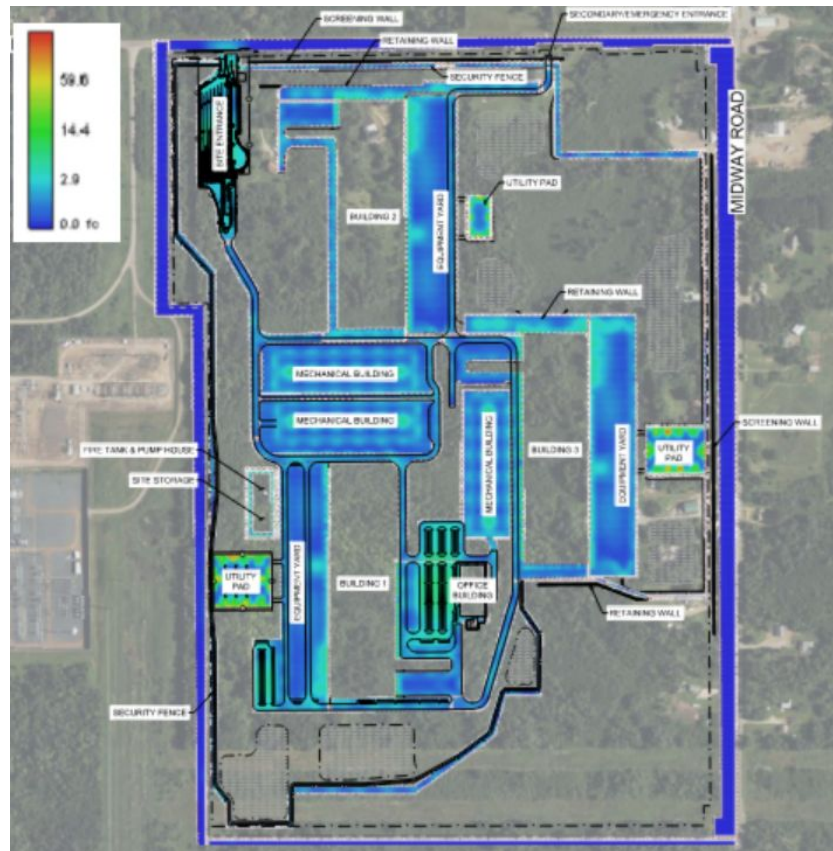
- Color Temperature: **3000K Fixtures**
- Mounting Height: **30 feet Max Pole Height**
- Property Line Average: **0.0 fc (Dark Sky Compliant)**
- Parking Area Average: **1.0 - 2.0 fc**
- Lighting Control: Motion Sensors / Dampeners to minimize light

Contextual Comparisons

Outdoor Vehicle Sales Lots: **10.0 - 40.0 fc**

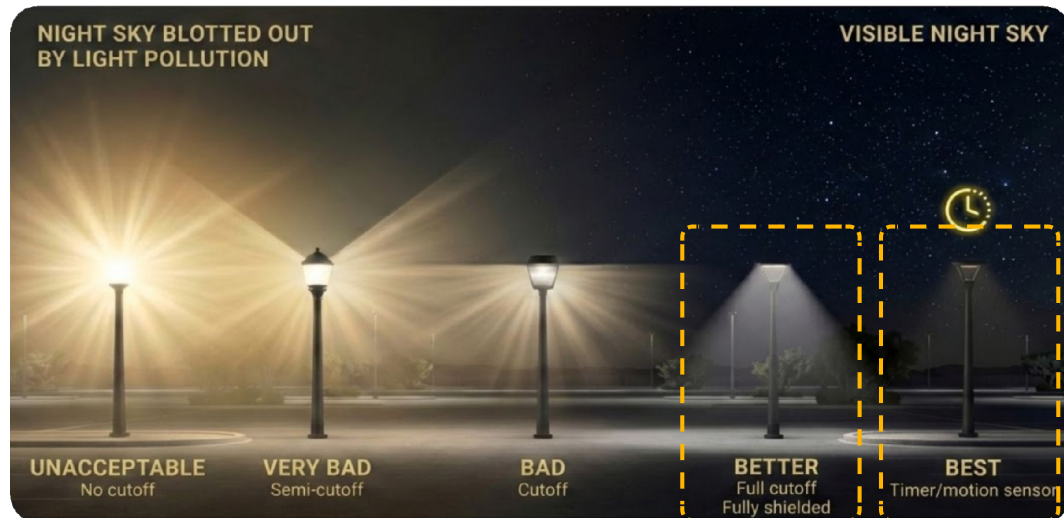
Commercial Parking Lots & Garages: **1.0 - 5.0 fc**

Full Moon in Rural Area: **0.01 fc**



Responsible Lighting & Photometric Design

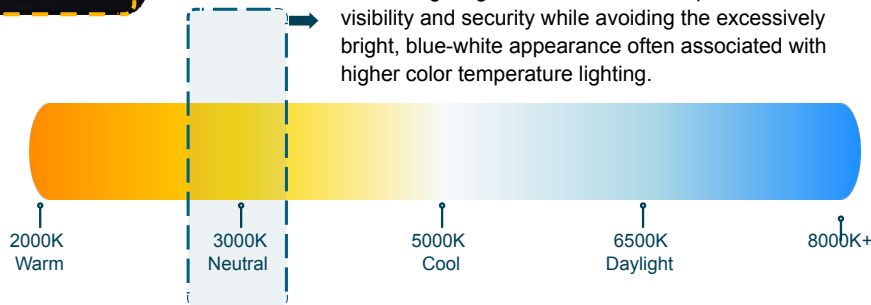
COMPARISON OF CUT OFF FIXTURE STYLES AND EFFECTS

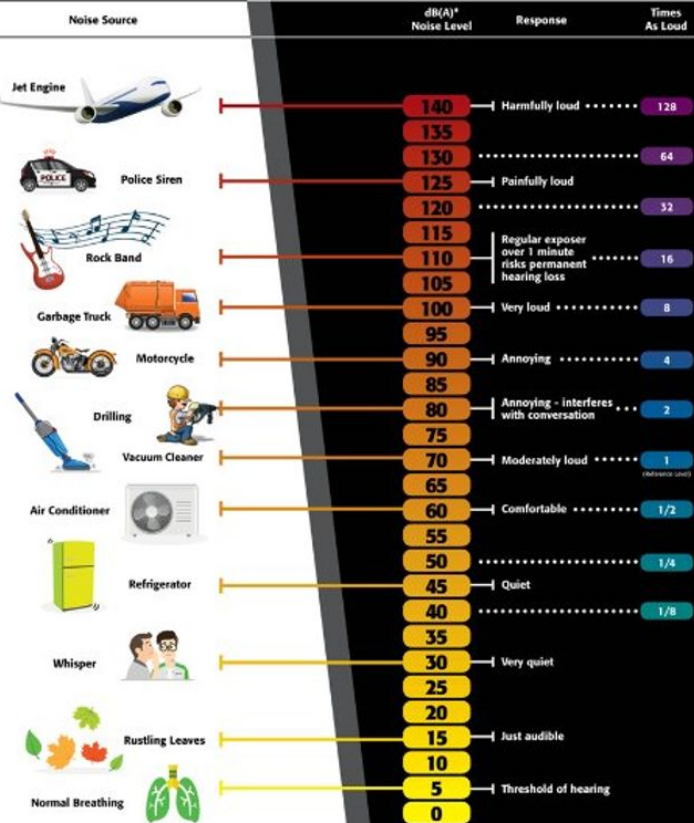


LIGHTING TEMPERATURE RANGES & STANDARDS

Primary Standard: 3000K

Exterior lighting has been selected to provide effective visibility and security while avoiding the excessively bright, blue-white appearance often associated with higher color temperature lighting.





* Typical A-weighted sound levels in decibels.
** "A" weighting approximates the frequency response of the human ear.

MPCA / City Noise Regulations

MPCA Noise Area Classification	Daytime		Nighttime	
	L10	L50	L10	L50
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

These measurements are taken at the nearest "Receptor". A Residential Receptor would be considered as a home, patio, garage, or adjacent outdoor area where people sleep, converse, or gather.

The City of Hermantown limits construction activities to daytime hours between 7am and 10pm.

PROJECT NOISE COMMITMENT

Through the Alternative Urban Areawide Review process, the project made a commitment to meeting enhanced night time noise criteria of **47 dBA** for operations.

Ambient Noise Data



Setup	Location Description	Measurement Time	24-hr Leq Noise Level [dB(A)]	Average Daytime Leq Noise Level [dB(A)]	Average Nighttime Leq Noise Level dB(A)	Maximum Hourly Leq Noise Level [dB(A)]
LT1	Northern portion of the Hermantown Industrial site, approximately 100 feet south of Morris Thomas Road.	10:00 AM (5/12) – 10:00 AM (5/13/25)	60.0	60.2	59.7	63.3
LT2	Southeast of the Hermantown Industrial site, approximately 150 feet west of Midway Road.	10:30 AM (5/12) – 10:30 AM (5/13/25)	59.0	58.9	59.0	65.1

CURRENT SOURCES:

- County Roadways (Morris Thomas Road, Midway Road, St. Louis River Road)
- Heavy Truck Traffic on US Hwy 2
- Active trains (up to 20 per day)
- MN Power Substation

Noise Abatement

Several mitigation measures will be used to meet state limits and AUAR commitments, including:

Noise Walls Along Frontage

Location: Morris Thomas Road / Midway Road Frontage

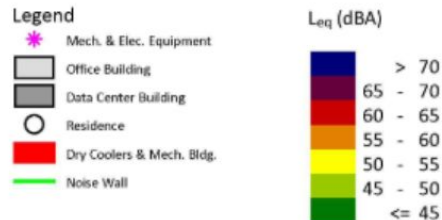
- Height: Up to 35 Feet
- Material: Precast concrete or similar composite material
- Aesthetics: Earthen Color Tone

Source Mitigation & Controls

Acoustic enclosures, blankets, and materials at the source (cooling equipment, etc.) to provide cross-frequency attenuation to mitigate for low-frequency noise.



Recommended Mitigation



Maximum Scenario Backup Generators & Fuel Storage

OVERVIEW & TESTING

Maximum Build Scenario

- Studied up to 16 backup generators for potential noise, air quality, and fuel impacts.

Testing Schedule

- Only between 8:00 a.m. and 5:00 p.m., Monday – Friday.

Testing Frequency

- 30 mins/month for maintenance; 1 hour annually for all engines.

Noise Compliance

- Complies with planned maintenance & emergency limits (<47 dBA).

PERMITTING & COMPLIANCE

MPCA Option D Permit

- Anticipated to qualify for projects with high potential but low actual emissions.

Runtime Limitations

- Primary generators limited to 77 hours per year for all operations.

Spill Prevention Plan

- Developer will submit plan to City of Hermantown and EPA with permit.

Spill Management

- Reported and managed strictly in accordance with MPCA standards.

FUEL STORAGE & SAFETY

Generator Belly Tanks

- Double-walled design with leak detection; negligible volatile organic emissions.

Enhanced Containment

- Isolation valves at stormwater discharge points localize any potential spill.

Site Fuel Capacity

- 80,000 gal max (64,000 gal usable @ 80% capacity).

Regulatory Threshold

- Total volume is significantly below the 1,000,000 gal environmental review trigger.

Electromagnetic Fields (EMF)

Non-Ionizing Radiation (Low Energy)

The project's electronics, substations, and new power lines emit extremely low-frequency EMFs, which fall entirely within the non-ionizing range. Unlike ionizing radiation (like X-rays or UV light), non-ionizing waves do not have enough energy to damage cells or DNA.

Established Scientific Consensus

- The World Health Organization (WHO) states that low-frequency EMF exposure from power lines is far below levels that can cause any long-term tissue damage or heating.
- A landmark National Research Council study found no persuasive evidence that power transmission lines or household appliances present a health threat.

The "Rapid Decay" Safety Buffer

Electromagnetic fields weaken extremely fast as you move away from the source. In balanced electrical systems, doubling your distance reduces the magnetic field strength by approximately four times. This ensures that EMF levels drop to negligible levels long before reaching nearby residential property lines.

Mandatory Permitting & EMF Studies

- The project's transmission lines will fully comply with strict safety standards, such as the National Electrical Safety Code (NESC), which sets guidelines to control exposure.
- As a binding commitment, Minnesota Power is legally required to complete a formal EMF Study as part of the public permitting process for the new transmission lines servicing the data center campus.

Traffic Analysis Scenarios

Scenario 01

Existing Conditions

Scenario 02

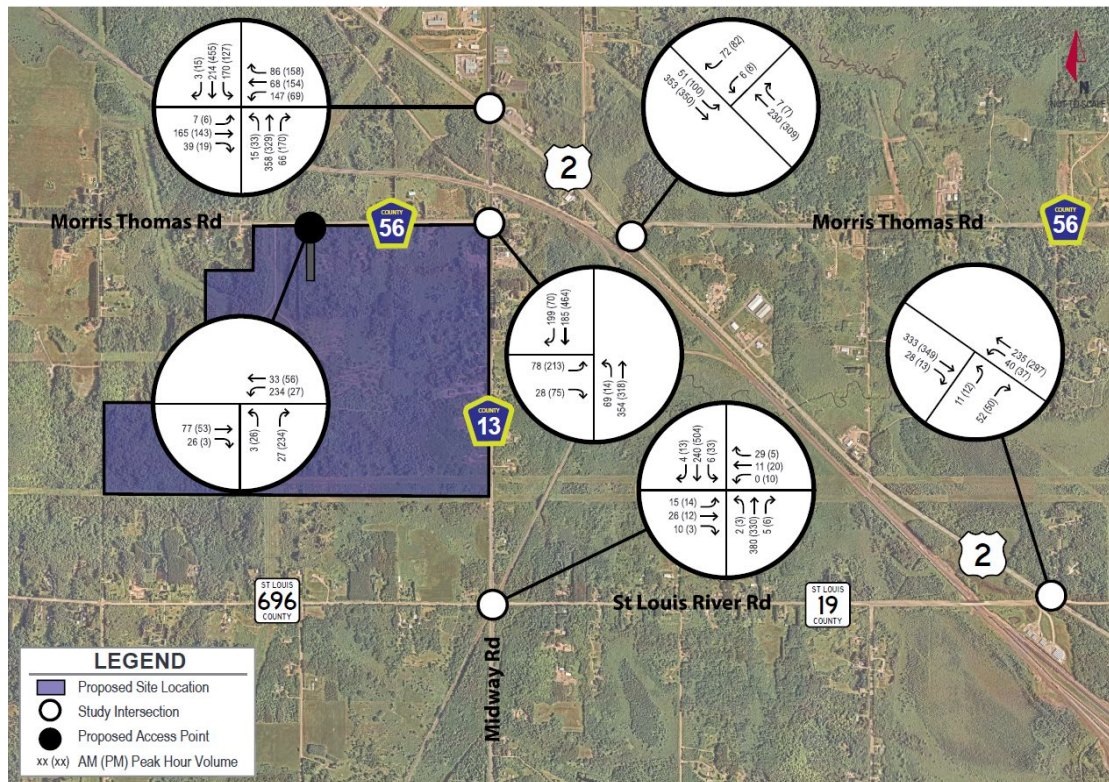
Interim Construction

Scenario 03

Opening Year (2030)

Scenario 04

Horizon Year (2045)



Traffic Mitigation Plan

Overview

Traffic operations are anticipated to remain similar to the existing conditions with the following proposed mitigation once the data center is operational.

Mitigation will also be implemented to address construction traffic so all intersections will operate acceptably.

Morris Thomas Rd

at Dev Driveway

- Westbound dedicated left-turn lane.
- Driveway will be stop controlled.

at Midway Rd (CSAH 13)

- Northbound dedicated left-turn lane on Midway.
- Eastbound dedicated left & right-turn lanes on Morris Thomas (95% storage).
- Southbound dedicated right-turn lane on Midway.
- Permanent traffic signal & RR coordinate conduit/cable.

US 2 & Midway Area

Railroad Crossing

- Queue cutter signal facing SB Midway, immediately north of Old Hwy 2.

US 2 & Midway Rd

- Conduit/cable to coordinate signal with RR crossing & Midway/Morris Thomas signal.

US 2 & St. Louis River Rd

- Northeast-bound dedicated left turn lane for site traffic.

Operations & TDM

Signal Timing

- Optimized signal models for Midway/Morris Thomas and US 2/Midway.
- Designed to accommodate both train and non-train events.

Travel Demand (TDM)

- Completed plan prior to construction.
- Included in project bid documents, agreements, and notices to sub-contractors, suppliers, and employees.

Construction Phases

BUILDING DURATIONS AND SEQUENCING

Phase 01

Site Prep

4–6 months

Noise: Tree removal & demo

Maintenance: Dust water control, active street sweeping & clean exit zones.

Traffic: Logging & dump trucks, earthwork machinery.

Phase 02

Mass Grading

9–10 months

Noise: Heavy earth movers

Maintenance: Active dust mitigation, continuous sweeping & entry controls.

Traffic: Aggregate loads & heavy equipment deliveries.

Phase 03

Foundations

12–16 months

Noise: Minimal impact

Maintenance: Wash out stations onsite, street sweeping & exit management.

Traffic: Continuous concrete mix trucks during pour days.

Phase 04

Structure

10–14 months

Noise: Minimal impact

Maintenance: Scheduled street cleaning & secured access points.

Traffic: Ongoing steel & large precast panel deliveries.

Phase 05

Deliveries

20–28 months

Noise: Minimal impact

Maintenance: Intermittent street sweeping & strict exit sweeping.

Traffic: Semi trucks with heavy equipment. Active removal logistics.

AUAR / Proposed Project Comparisons

	AUAR	Proposed Project
dBA Pressure Levels @ Nearby Receptors	L ₅₀ Day / Night : 40-47 dBA	L ₅₀ Day / Night : 43 - 47 dBA 
dB(C) Pressure Levels per receptor	LC _{eq} Day / Night : 58-61 dBC	 LC _{eq} Day / Night : 58-60 dBC 
Quantity of Generators	Up to 20 Generators	 Up to 16 Generators 
Fuel Volume On-Site	Up to 99,800 Gallons	 Up to 80,000 Gallons 
Daily Construction Traffic	AM Peak: 390 Trips PM Peak: 340 Trips	AM Peak: 390 Trips PM Peak: 340 Trips 
Operational Traffic	Daily: 1,920 Trips AM Peak: 290 Trips PM Peak: 290 Trips	Daily: 1,920 Trips AM Peak: 290 Trips PM Peak: 290 Trips 