MCES 7031-9003 Siphon Outlet Improvements Project
Environmental Assessment Worksheet

Proposer: Metropolitan Council Environmental Services (MCES)
RGU: MCES

January 2024

Table of Contents

Table of Contents ii
Tables ii
Exhibits ii
Figures iii
Appendices iii
1. Project Title 1
2. Proposer 1
3. Responsible Governmental Unit (RGU) 1
4. Reason for EAW Preparation 1
5. Project Location 2
6. Project Description 2
7. Climate Adaptation and Resilience 7
8. Cover Types 12
9. Permits and Approvals Required 13
10. Land use 14
11. Geology, Soils and Topography/Land Forms 16
12. Water Resources 19
13. Contamination/Hazardous Materials/Wastes 27
14. Fish, Wildlife, Plant Communities, and Sensitive Ecological Resources (Rare Features) 29
15. Historic Properties 38
16. Visual 40
17. Air 41
18. Greenhouse Gas (GHG) Emissions/Carbon Footprint 41
19. Noise 43
20. Transportation 45
21. Cumulative Potential Effects 46
22. Other Potential Environmental Effects 47

Tables

Table 1. Project Magnitude 6
Table 2. Climate Considerations and Adaptations 11
Table 3. Cover Types 12
Table 4. Green Infrastructure 12
Table 5. Tree Canopy 13
Table 6. Permits and Approvals 13
Table 7. Soil Map Units in the EAW Project Area[13] 18
Table 8. Noise Area Classifications 44

Exhibits

Exhibit 1. Historical Annual Average Temperature in Dakota County (1895 – 2022)..... 8
Exhibit 2. Historical Annual Average Precipitation in Dakota County (1895 – 2022)..... 8
Exhibit 3. Historical PDSI Values for Dakota County 9
Exhibit 4. Projected Temperatures in Dakota County 10
Exhibit 5. Projected Precipitation for Dakota County 10

Figures

Figure 1: Project Location USGS Topo
Figure 2: Project Location and Components
Figure 3: Land Cover
Figure 4: Existing Land Use
Figure 5: Parks, Trails, and Other Recreational Area
Figure 6: Planned Land Use
Figure 7: Current Zoning
Figure 8: Farmland and Soils Classification
Figure 9: Water Resources
Figure 10: Delineated Aquatic Resources
Figure 11: County Well Index
Figure 12: Potential Wetland Impacts
Figure 13: MPCA Potentially Contaminated Sites

Appendices

Appendix A: Figures
Appendix B: Draft Construction Plans
Appendix C: FEMA FIRMette
Appendix D: Wetland Conservation Act Notice of Decision
Appendix E: MDH Well Log Reports
Appendix F: Dewatering Radius of Impact Analysis
Appendix G: NHIS Review Response and IPaC Consistency Letters

December 2022 version

Environmental Assessment Worksheet

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

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

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

1. Project Title

MCES 7031-9003 Siphon Outlet Improvements Project

2. Proposer

Proposer:	Metropolitan Council Environmental Services (MCES)
Contact person:	Chris Remus, P.E.
Title:	Assistant Manager, Interceptor Engineering
Address:	3565 Kennebec Drive
City, State, ZIP:	Eagan, Minnesota 55122
Phone:	(651) 602 - 4538
Email:	Christopher.Remus@metc.state.mn.us

3. Responsible Governmental Unit (RGU)

RGU Agency:	MCES
Contact person:	Leisa Thompson
Title:	General Manager
Address:	390 Robert Street North
City, State, ZIP:	St. Paul, Minnesota 55101
Phone:	(651) 602 - 8101
Email:	leisa.thompson@metc.state.mn.us

4. Reason for EAW Preparation

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

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

MCES is preparing a discretionary EAW. The Project would not meet or exceed a mandatory EAW or EIS threshold per Minnesota Rules 4410.4300 or 4410.4400.

5. Project Location

County: Dakota

City/Township: Eagan

PLS Location (¼, ¼, Section, Township, Range): S18 T27N R23W

Watershed (81 major watershed scale): Lower Minnesota River

GPS Coordinates: 44.822118, -93.221113

Tax Parcel Number: 10-01800-52-011, 10-01800-52-012, 10-01800-52-013, 10-01800-55-020, 10-01800-57-010, 10-01800-57-021, 10-01800-57-030, 10-01800-59-011, 10-01800-59-012, 10-01800-78-010, 10-67150 00-010, and Nicols Road right-of-way.

At a minimum attach each of the following to the EAW:

- U.S. Geological Survey 7.5 minute, 1:24,000 scale map indicating project boundaries (photocopy acceptable);

  See Figure 1, Appendix A

- County map showing the general location of the project;

  See Figures 1 and 2, Appendix A

- Site plans showing all significant project and natural features. Pre-construction site plan and post-construction site plan.

  See Appendix B, which provides site plans for the first phase of the Project (installation of temporary conveyance).

- List of data sources, models, and other resources (from the Item-by-Item Guidance: *Climate Adaptation and Resilience* or other) used for information about current Minnesota climate trends and how climate change is anticipated to affect the general location of the project during the life of the project (as detailed below in item 7. Climate Adaptation and Resilience).

  Data sources and resources are identified in Item 7.

6. Project Description

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

Metropolitan Council Environmental Services (MCES) proposes to conduct inspection, maintenance, and replacement activities to critical sanitary sewer infrastructure along approximately 800 feet of Nicols Road and adjacent areas in the City of Eagan, Minnesota.

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

Existing Conditions

The existing sanitary infrastructure within the Project Area includes the following:

- L13 Lift Station and Meter 501B
- Meter Vault 501A
- Bloomington Siphons 9003-A and 9003-B, Forcemain 7030 and associated South Junction Structure
- Bloomington Siphon 7031 and associated manhole (MH) 1
- Siphon Outlet Structure
- Gravity Main 7033 and associated MH 5 and MH 6.

Figure 2, Appendix A identifies existing sewer infrastructure within the Project Area. Raw wastewater is currently conveyed south/southeast through the Project Area from two directions:

1) The L13 lift station pumps wastewater from Burnsville, Savage, Lakeville, and Apple Valley through the 7030 forcemain to the South Junction Structure. A crossover pipe from intermediate Meter Vault (M501A) provides alternate pumping to the 9003-B siphon.

2) Wastewater from Edina and Bloomington is conveyed under the Minnesota River via three siphons, 7031, 9003-A, and 9003-B. The 7031 siphon discharges to MH 1 and the 9003 siphons discharge to the South Junction Structure.

Recent inspections of the South Junction Structure and MH 1 identified severe corrosion from hydrogen sulfide, a gaseous byproduct of wastewater. These gases have caused the once protective coating to slough off, exposing the concrete to the corrosive environment.

Flows from MH 1 and the South Junction Structure combine at the Siphon Outlet Structure and are conveyed east/northeast, out of the Project area, toward the Seneca Wastewater Treatment Plant (WWTP) via gravity sewer 7033. The combined average daily flow of 16 million gallons per day (mgd) and peak flow of 39 mgd.

The environment surrounding the MCES infrastructure is sensitive and includes calciferous fens, wetlands, streams, rare plants, suitable habitat for threatened or endangered species, and areas of archaeological significance. The Project has been designed to mitigate risk of structure failure while providing future reliability and redundancy to the sewer collection system.

Proposed Project

The MCES 7031-9003 Siphon Outlet Improvements Project (herein referred to as "the Project") proposes replacement of the existing South Junction Structure and MH 1 (located east of Nicols Road) and the relocation of the existing 7030 forcemain from the west side of Nicols Road to within the roadbed. Other components of the Project include inspection and cleaning of Siphons 7031, 9003-A, and 9003-B that run

under or adjacent to Nicols Road between the Union Pacific Railroad (UPRR) and the South Junction Structure/MH 1 area, as well as a joint repair upstream of MH 6 on the 7033 interceptor. Prior to construction, a temporary conveyance pipe would be installed to convey flow around the South Junction Structure and MH1 construction area. Figure 2, Appendix A identifies the Project components. Appendix B provides the draft civil plan set for the proposed temporary conveyance pipeline.

The proposed Project activities, disturbances, and schedule will be phased over several years as summarized below:

Spring 2024 (February – March)	Removal of up to 75 trees at the MCES-owned parcel. Cut trees would be removed immediately for storage and processing at the tree removal contractor's own facility. See the Temporary Conveyance plans in Appendix B for more details.
Spring 2024 (April – May)	Install two above-ground HDPE temporary conveyance pipes upstream of the South Junction Structure to convey wastewater around MH 1, the Siphon Outlet Structure, and the South Junction Structure on the south side of the MCES parcel. The temporary conveyance would rest on the ground surface with limited grading required to keep maintain smooth bedding for the pipe. The pipes will be assembled by laborers using hoists, cranes, and hand tools. Minor excavation would be required to tie the temporary conveyance pipes to the existing sanitary services.
Winter 2024 (December – March)	Replace the existing MH 1 due to aging condition with a new 10-foot diameter, corrosion-resistant pre-cast structure. The existing structure would be demolished in place and removed for disposal at an appropriate facility. Construction would include excavation of existing materials to a depth of approximately 20 feet. Replace the South Junction Structure due to aging condition with a new 12-foot diameter, corrosion-resistant structure or a concrete cast-in-place structure with corrosion-resistant panels. The existing structure would be demolished in place and removed for disposal at an appropriate facility. Construction would include excavation of existing materials to a depth up to 20 feet. Both structure replacements would require dewatering during construction. Dewatering would be conducted via a sump pump placed on the bottom of the excavation pit. The pump would discharge to a filter bag or other BMP. The BMP would discharge to the storm sewer on the east side of Nicols Road and flow to a drainage area east of L13. The dewatering plan would have to adhere to the conditions of the MDNR dewatering permit. The perimeter of the excavation pit would be entirely lined with steel sheeting to prevent horizontal groundwater flow into the excavation. The sheeting would be driven approximately ten feet below the bottom excavation depth. Further information on dewatering can be found in Item 12. After both structures are replaced, the temporary conveyance pipes can be extended to MH 5. This would allow the contractor to clean and repair the 7033 unlined joint. Cleaning wastes would be collected onsite for immediate removal. The unlined joint upstream of MH 6 on interceptor 7033 would be accessed from MH 6 and repaired from within the pipe. Minor excavation

	around the upper portion of the manhole will be needed. Temporary conveyance can be removed when this and previous tasks are complete.
Spring – Fall 2025 (March – November)	Siphons 7031, 9003-A, and 9003-B would be cleaned and inspected. Sewer cleaning waste would be collected in a vacuum truck and disposed at an appropriate offsite facility. Results of the inspection will be used to inform future maintenance projects in this area.
Winter 2025 (December – March)	Relocate the 7030 forcemain under the southbound lane of Nicols Road. The new forcemain would need to tie into M501A near the L13 lift station at the north end of the Project. Two pits would be excavated to install the 42-inch steel casing and 36-inch high-density polyethylene (HDPE) carrier pipe under the Union Pacific Railroad (UPRR). The excavations are expected to be up to eight feet deep and will likely require dewatering. If needed, dewatering would be conducted via a sump pump on the bottom of the excavation. The pump would discharge to a filter bag or other BMP. The BMP would then discharge to the ground surface. The dewatering plan must adhere to the conditions of the MDNR dewatering permit to be applied for prior to construction. The excavation would be lined on two sides with steel sheeting or a trench box if necessary due to the limited size and depth of the excavation. The new HDPE 7030 forcemain would continue from the boring pit to the south, under the southbound traffic lane of Nicols Road. This activity would require road surface and bedding removal and replacement, as well as lane closures. Disturbance to the west road right-of-way (ROW) may occur. The new 7030 forcemain would tie into the new South Junction Structure. The existing Forcemain 7030 between M501A and the South Junction Structure would be abandoned in-place to avoid disruption of nearby wetlands and threatened plant species. The forcemain would be cleaned and filled with sand. Sewer cleaning waste would be collected in a vacuum truck and disposed at an appropriate offsite facility. Additional abandonment requirements from the Minnesota Department of Natural Resources (MDNR) will be incorporated as they are received.
Spring – Fall 2026 (March – November)	Site restoration and maintenance begins in the spring. If necessary, finalize cleaning and inspection tasks from the previous summer.

Forcemain 7030 Replacement Alternatives

During the development of the project design, opportunities to minimize environmental impacts were evaluated. Specifically, alternative alignments pertaining to the 7030 forcemain were identified. The following paragraphs describe the alternatives considered for this project component.

<u>No Build Alternative</u>

Under the No Build Alternative, routine maintenance activities would continue to extend the life of the 7030 forcemain to the greatest extent possible. The 7030 forcemain was constructed in 1971 of pressurized concrete cylinder pipe (PCCP) which consists of a concrete core, a thin steel cylinder, high

tensile prestressed wire, and a mortar coating. MCES' experience with this type and age of pipe has been poor as it does not withstand long-term sulfide exposure. The primary failure is compromised mortar coating and subsequent severe corrosion of the prestressing wire which results in sudden rupture of the pipe wall. It is assumed that the 7030 forcemain is in poor to very poor condition and therefore, it was determined that routine maintenance or lining of the pipeline would not be viable. Consequently, the No Build Alternative fails to address the project need and was rejected from further consideration.

Build Alternative 1 – West Alignment

Alternative 1 (the West Alignment) would construct the replacement pipeline between the west side of Nicols Rd and the existing 7030 forcemain alignment. The existing the 7030 forcemain pipeline would be abandoned in-place. Although this alternative would meet project needs, Alternative 1 would result in greater potential impacts to wetlands and rare features given its proximity to Nicols Fen and documented rare plant occurrences. As described in Item 12, wetlands are present along the west side of Nicols Road. Additionally, rare plant occurrences were documented during botanical surveys conducted during summer 2023 on the west of Nicols Road. Item 14 provides additional details on rare plant occurrences within and in close proximity to the Project Area. It was determined that Alternative 1 would have the potential to directly impact wetlands and rare plant features present west of Nicols Road. Therefore, Alternative 1 was dismissed from further consideration.

Build Alternative 2 – ROW Alignment

Alternative 2 (ROW Alignment) would construct the replacement pipeline within Nicols Road ROW parallel to the existing 7030 forcemain alignment. The existing 7030 forcemain pipeline would be abandoned in-place. Alternative 2 would minimize or potentially avoid direct impacts to wetlands and rare plant occurrences west of Nicols Road as disturbance would be limited to the existing road edge and adjacent road ROW. Given that Alternative 2 would substantially minimize impacts to sensitive environmental resources, it was identified as the Preferred Alternative.

c. **Project magnitude**

Table 1 summarizes the project magnitude.

Table 1. Project Magnitude

Description	**Number**
Total Project Acreage	4.52 (total potential work limits)
Linear project length	Approx. 1,300 feet
Number and type of residential units	Not Applicable (N/A)
Residential building area (in square feet)	N/A
Commercial building area (in square feet)	N/A
Industrial building area (in square feet)	N/A
Institutional building area (in square feet)	N/A
Other uses – specify (in square feet)	N/A
Structure height(s)	N/A

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

Project Purpose and Need

The purpose of the Project is to replace, repair, and extend the life of critical public sanitary system infrastructure, including two outlet structures and a forcemain.

The existing sanitary infrastructure has reached or exceeded its life expectancy and has been determined to be in poor condition. Continued deterioration of the existing infrastructure may increase the risk of an accidental discharge of untreated sewage to the local environment. The structures and forcemain within the Project Area cannot continue to operate safely in their current condition.

Project Beneficiaries

The Project would benefit the public and the environment. The Project would ensure the sanitary system operates as designed and would prevent the system from accidentally discharging untreated sewage to the environment.

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

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

Between 2014 and 2016, modifications were conducted at the L13 lift station. The project included approximately 200 feet of new 24-inch forcemain pipe and helical piling, The forcemain extends east from the lift station under Nicols Road where it connects to the 9003-B siphon barrel. An EAW for the project was submitted to the RGU (MCES) in 2013 and approved in 2014.

7. Climate Adaptation and Resilience

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

In general, Minnesota is anticipated to experience an increase in temperature, precipitation, and more frequent extreme precipitation events resulting from climate change. Locally, annual average temperatures have risen two degrees over the past century and up to three degrees in the northern part of the state. The highest average temperature increases have occurred during the winter. Since 1895, temperatures during the winter have increased at a rate two to three times higher than during the summer. In particular, winter warming rates have risen more sharply in recent decades.[1] Current climate warming trends, most notably during the winter, are anticipated to continue.[2]

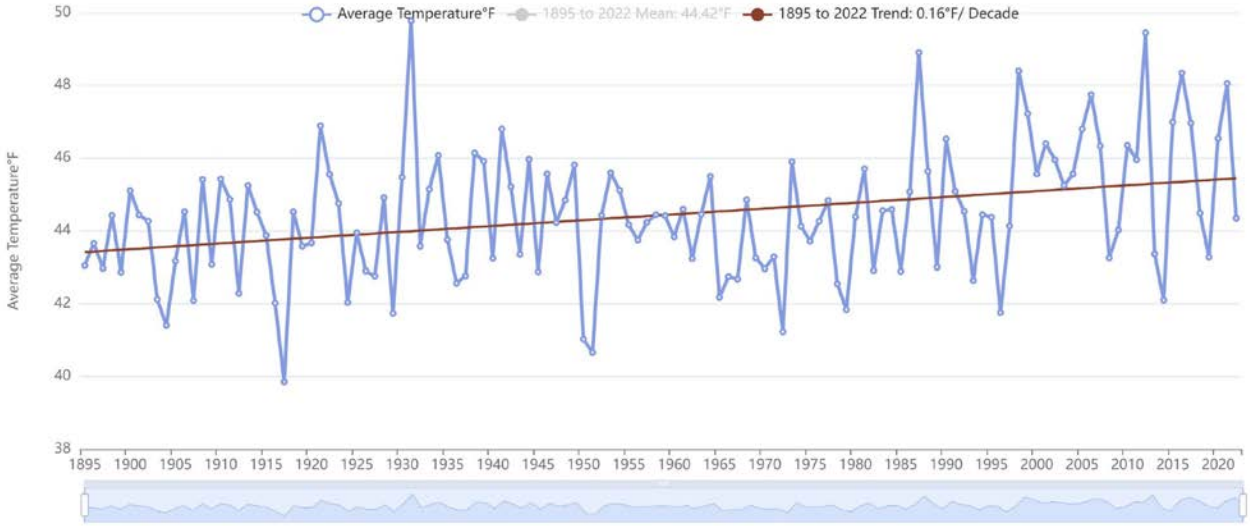
Heavy rain events have become more frequent and more intense in Minnesota. From 1973 to 2020, Minnesota experienced 17 mega-rain events[3] with a notable increase since 2000. Of these 17 events, three occurred in the 1970s, two in the 1980s, one in the 1990s, six mega-rain events occurred in the 2000s, four in the 2010s, and one in 2020. Thus, in the past 21 years (2000 to 2020), almost two times as many

[1] DNR. Climate Trends. https://www.dnr.state.mn.us/climate/climate_change_info/climate-trends.html. Accessed June 2023.
[2] MnDOT. Minnesota Go Climate Change Report. 2021. https://www.minnesotago.org/trends/climate-change. Accessed June 2023.
[3] Mega-rain events are defined as events in which six inches of rain covers more than 1,000 square miles and the core of the event tops eight inches.

mega rain events occurred compared to the prior 27 years (1973 to 1999).[4] The following paragraphs describe the historical and projected climate trends for the Dakota County, in which the Project is located.

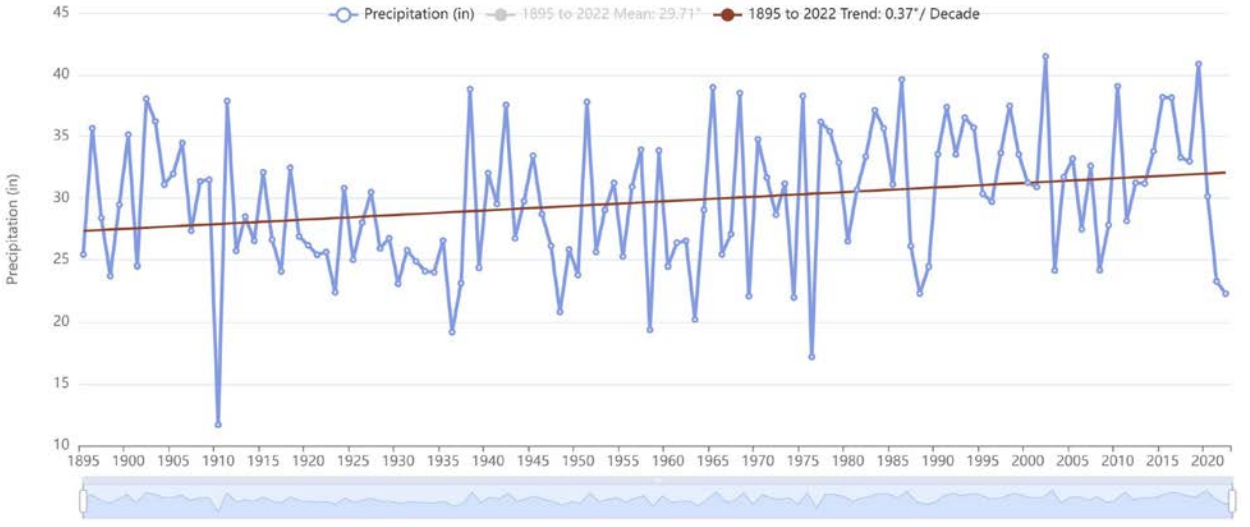
Climate trends for the County parallel the overall statewide trends, indicating Minnesota's climate is becoming warmer and wetter. Exhibits 1 and 2 illustrate historical average annual temperature and precipitation trends for the County from 1895 to 2022. During this time period, the County experienced an average annual temperature increase of 0.16°F per decade and average annual precipitation increase of 0.37 inches per decade.

Exhibit 1. Historical Annual Average Temperature in Dakota County (1895 – 2022)



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

Exhibit 2. Historical Annual Average Precipitation in Dakota County (1895 – 2022)



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

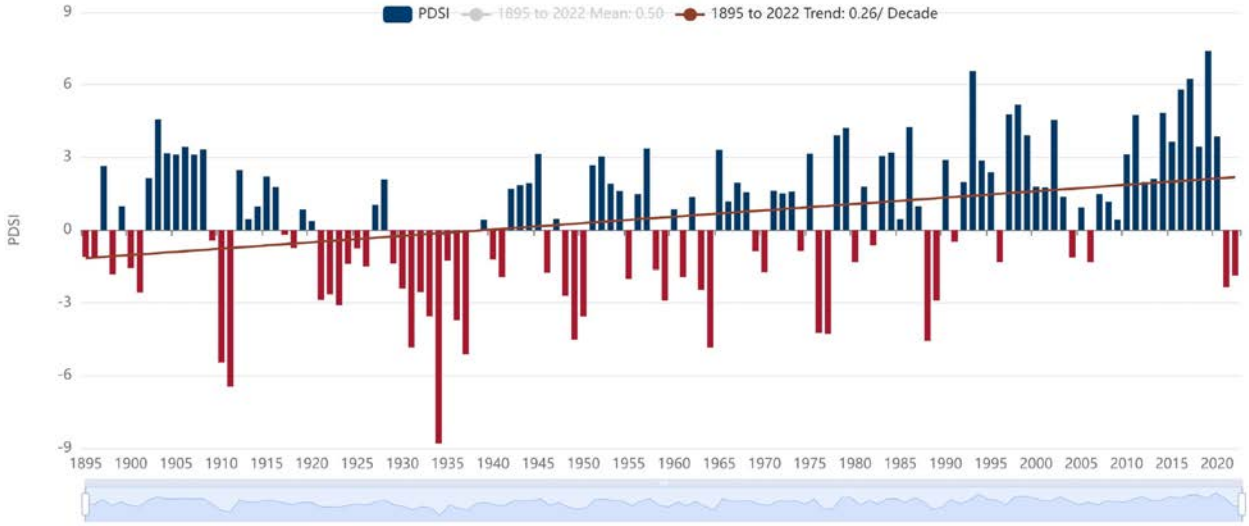
Drought conditions are most likely to occur in the western and northwestern portions of Minnesota as a

[4] DNR. Mega-Rain Events in Minnesota. https://www.dnr.state.mn.us/climate/summaries_and_publications/mega_rain_events.html. Accessed June 2023.

result of being further from the Gulf of Mexico moisture.[5] In 2021, severe drought conditions necessitated restrictions on water use.[6] Significant rainfall in fall 2021 combined with the 2022 spring snowmelt improved drought conditions throughout Minnesota. According to monitoring data from the DNR, as of November 14, 2023, drought conditions remain in portions of Minnesota. Severe drought conditions extend in northwestern Minnesota extending through north-central and central Minnesota. Portions of severe and extreme drought is persisting in southeastern and southwestern Minnesota.

While Minnesota has experienced recent severe drought conditions, Palmer Drought Severity Index (PDSI) values from 1895 to 2022 indicate that the state as a whole is seeing wetter conditions over time. The PDSI utilizes temperature and precipitation data to estimate relative soil moisture conditions and serve as an indicator of long-term drought conditions. The index ranges from -5 to +5 indicating dry and wet conditions, respectively. PDSI values are reported on a monthly basis. Exhibit 3 shows historic PDSI values for the month of August from 1895 to 2022 for the County, which indicates an increase of 0.26 per decade. Generally, the PDSI historical data indicates that the region is experiencing a wetter climate.

Exhibit 3. Historical PDSI Values for Dakota County



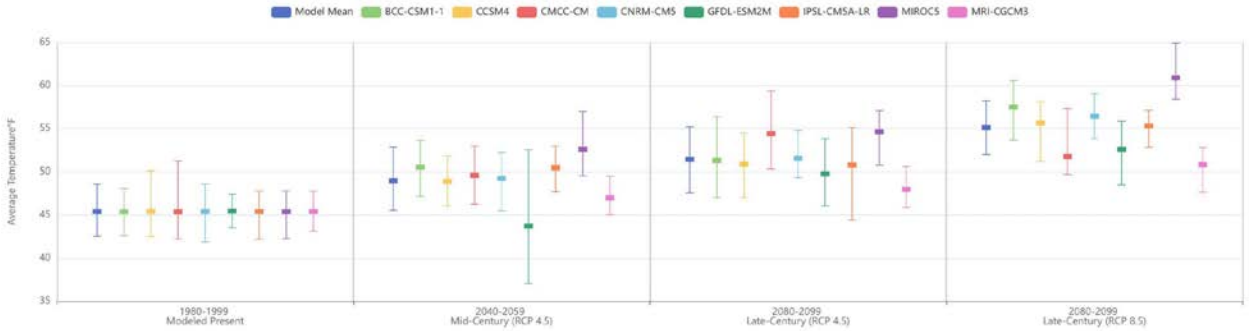
Source: Minnesota Department of Natural Resources. https://arcgis.dnr.state.mn.us/ewr/climateexplorer/main/historical

Projected climate trends indicate that temperatures within the County will continue to increase. Exhibit 4 illustrates projected temperatures for the County. Several climate models are shown in the projected temperature analysis. The model mean, shown in blue, illustrates the average of all models included in the analysis. Exhibit 4 shows the modeled present condition, mid-century (2040-2059) at Representative Concentration Pathway (RCP) 4.5, late-century (2080-2099) at RCP 4.5, and late-century (2080-2099) at RCP 8.5. RCP is a greenhouse gas concentration scenario used by the Intergovernmental Panel on Climate Change in the fifth assessment report. RCP 4.5 is an intermediate scenario in which emissions decline after peaking around 2040 and RCP 8.5 represents a worst-case scenario in which emissions continue rising through the 21st century.

Under the RCP 4.5 scenario, the annual temperature is anticipated to increase within the County from a modeled present mean of 45.42°F (1980-1999) to a mid-century (2040-2059) model mean of 49°F and a late-century (2080-2099) model mean of 51.4°F. Under the RCP 8.5 worst-case scenario, the County would experience a late-century (2080-2099) model mean temperature of 55.1F.

[5] DNR. Climate's Impact on Water Availability. Accessed November 2023. https://www.dnr.state.mn.us/climate/water_availability.html
[6] DNR. Drought in Minnesota. Accessed November 2023. https://www.dnr.state.mn.us/climate/drought/index.html

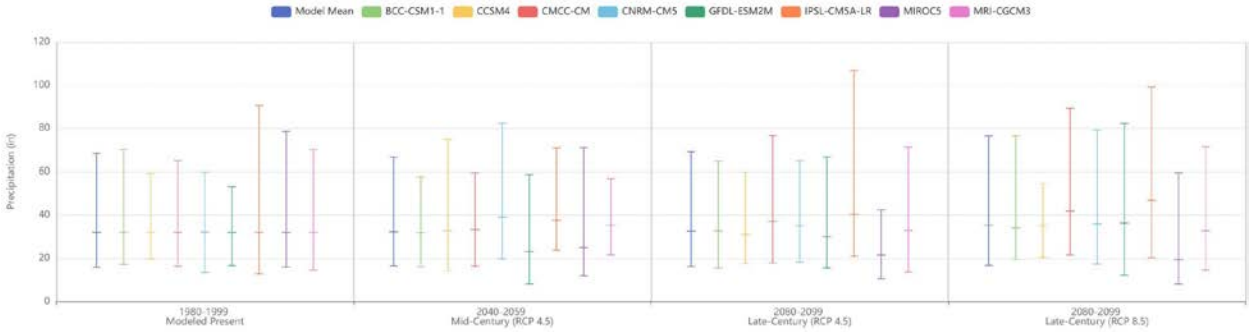
Exhibit 4. Projected Temperatures in Dakota County



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

Exhibit 5 presents projected average annual precipitation for Dakota County. Under the RCP 4.5 scenario, the annual precipitation is anticipated to increase within the County from a modeled present mean of 32.03 inches (1980-1999) to a mid-century (2040-2059) model mean of 32.31 inches and a late-century (2080-2099) model mean of 32.62 inches. Under the RCP 8.5 worst-case scenario, the County would experience a late-century (2080-2099) model mean precipitation of 35.3 inches. In comparison to the modeled present mean (1980-1999), the late-century (2080-2099) modeled mean annual precipitation would increase by approximately 1.8 percent under the RCP 4.5 scenario and increase by approximately 10.2 percent under the RCP 8.5 scenario.

Exhibit 5. Projected Precipitation for Dakota County



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

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

Previous efforts made by MCES to separate storm and sanitary sewer systems have made the collection system less susceptible to extreme surcharges during rain events. The majority of freshwater entering the system is due to infiltration and inflow (I/I). Infiltration occurs when groundwater seeps into cracks, leaky pipe joints and/or deteriorated manholes. This Project would minimize groundwater intrusion from these sources and prevent future contamination from occurring. Table 2 summarizes climate considerations related to the project and adaptation considerations.

Table 2. Climate Considerations and Adaptations

ResourceCategory	Climate Considerations	Project Information	Adaptations
Project Design	Potential for increased intensity of rain events and flood risks.	The Project would construct new subsurface facilities adjacent to known wetlands. The Project would replace or repair existing infrastructure and would not increase impervious surface areas compared to existing conditions. The Project area is slightly outside the 100-year floodplain.	Subsurface sanitary services are designed to be watertight and to remain in place when the ground is saturated or flooded. Groundwater or floodwater would enter the system within the Project Area regardless of rain intensity or flood duration. The proposed improvements would improve the resiliency of the existing infrastructure by replacing or repairing infrastructure in poor condition.
Land Use	Heavier rainfall expected to increase risk of localized flooding.	The Project would not alter surface drainage patterns, existing land use, or include new buildings. The Project would not increase risk of localized flooding.	N/A
Water Resources	Addressed in Item 12		
Contamination/ Hazardous Materials/ Wastes	Protection of water resources from soil and water contamination.	The purpose of the Project is to safely convey hazardous human waste to a treatment facility. All system components are designed with the intent of preventing leaks or other discharges.	Inherently, there is some risk of leakage or accidental discharge of hazardous materials associated with sanitary systems, especially as they age. The Project would result in a significant improvement from current conditions, as some of the existing infrastructure is in poor to very poor condition. The proposed improvements would be subject to ongoing monitoring and would be replaced again when warranted. Wastes generated during construction would be removed from the site and properly disposed of per MPCA requirements.
Fish, wildlife, plant communities, and sensitive ecological resources (rare features)	Addressed in Item 14.		

8. Cover Types

Estimate the acreage of the site with each of the following cover types before and after development. See Figure 3, Appendix A for 2016 University of Minnesota 1-Meter Land Cover data.

Table 3. Cover Types

Cover Types	Before(acres)	After (acres)
Wetlands and shallow lakes (<2 meters deep)	1.71*	1.71*
Deep lakes (>2 meters deep)	0	0
Wooded/forest	1.39	1.29**
Rivers/streams	0	0
Brush/grassland	0.11*	0.21**
Cropland	0	0
Livestock rangeland/pastureland	0	0
Lawn/landscaping	0	0
Green infrastructure TOTAL (from table below*)	0	0
Impervious surface	1.31	1.31
Stormwater Pond (wet sedimentation basin)	0	0
Other (describe)	0	0
TOTAL	**4.52**	**4.52**

Source: Land cover data from UMN – Twin Cities 1-Meter Land Cover (2016).
*Wetland acreage was revised upward from the UMN land cover data to reflect actual field delineated wetland acreage and the excess acreage was subtracted from the brush/grassland cover type.
**Estimated loss of 0.1 acres of due to tree removals. Acreage subject to tree removal was added to the "brush/grassland" category for column 2.

Table 4. Green Infrastructure

Green Infrastructure*	Before (acreage)	After (acreage)
Constructed infiltration systems (infiltration basins/ infiltration trenches/ rainwater gardens/ bioretention areas without underdrains/ swales with impermeable check dams)	0	0
Constructed tree trenches and tree boxes	0	0
Constructed wetlands	0	0
Constructed green roofs	0	0
Constructed permeable pavements	0	0
Other (describe) Landfill-based geothermal system	0	0
TOTAL*	0	0

Table 5. Tree Canopy

Trees	Percent	Number
Percent tree canopy removed or number of mature trees removed during development	App. 26%	Up to 75
Number of new trees planted	0%	0

9. Permits and Approvals Required

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

Table 6. Permits and Approvals

Unit of Government	Type of Application	Status
Federal		
U.S. Army Corps of Engineers (USACE)	Section 404 Nationwide Permit or Individual Permit	Application to be submitted based on agency consultation
State		
Minnesota Pollution Control Agency (MPCA)	National Pollutant Discharge Elimination System (NPDES) Permit	To be completed
MPCA	Stormwater Pollution Prevention Plan (SWPPP)	Draft prepared
MPCA	Construction Stormwater Permit	To be completed
MPCA	Section 401 Certification	To be completed if needed
MPCA	EAW/EIS Need Decision	Draft prepared
Minnesota Department of Natural Resources (MDNR)	Water Appropriations Permit (for dewatering)	To be completed
MDNR	Rare plant take permit	To be completed if needed
MDNR*	Wetland Conservation Act - Wetland Boundary Approval	Approved
MDNR*	Wetland Conservation Act - Replacement Plan or No Loss	To be completed
Local		
Dakota County	Dakota County Water Resources Department Dewatering Well Construction and Sealing Permit	To be Completed, if required
City of Eagan	Grading/Excavation Permit	To be completed, if required by City
City of Eagan	Right of Way Permit	To be completed
City of Eagan	Stormwater Management Permit	To be completed

*The WCA LGU for the Project is the MDNR. Since there are multiple ownerships in the area, including state-owned land, the City of Eagan has deferred their LGU role for this project to the MDNR.

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

10. Land use

a. Describe:

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

The Project Area is generally situated in the northeast quadrant of the interchange of Minnesota Highways 13 and 77 (Figure 1, Appendix A). The approximately 4.5-acre Project Area is comprised of emergent wetland, paved road (Nicols Road) and managed ROW, Union Pacific (UP) rail corridor, the existing siphon outlet facility, and an MCES sanitary lift station (Figure 2, Appendix A). A residential neighborhood is adjacent to the proposed work area, and one residential parcel is partially within the work area. An easement exists on the impacted parcel. Figure 4, Appendix A illustrates existing land use within the Project Area.

The Project Area located along the west side of Nicols Road is within land owned by the DNR and is identified as within the boundaries of Fort Snelling State Park. No park facilities or structures are present within DNR land bound by Nicols Road, Highway 77, the Highway 77/Highway 13 interchange ramps, and the UP Railroad. The Nicols Fen is located within DNR land to the west of Nicols Road. Figure 5, Appendix A identifies park and trail facilities near the Project Area.

The Dakota County Cedar Nicols Trailhead and a DNR boat launch site are located along the Minnesota River, northwest of the Project Area . The trailhead includes a parking area and provides access to the Dakota County Minnesota River Greenway trail system and Fort Snelling State Park trail system. Nicols Road provides access to this trailhead but is unmaintained to the north of the UPRR. During construction of the replacement structures and interceptors, it is anticipated that Nicols Road would be temporarily closed between Silver Bell Road and Black Dog Road. These phases of the Project are anticipated to occur from March 2024 to May 2024, December 2024 to March 2025, and December 2025 to March 2026. Traffic detour requirements would be coordinated with the DNR and the City of Eagan as final design progresses.

United States Fish and Wildlife Service's (USFWS) Minnesota Valley National Wildlife Refuge land is located west of Highway 77 and north of the Minnesota River, approximately one-half mile from the Project Area (Figure 5, Appendix A). No impacts to USFWS lands are anticipated.

Based on U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) soil survey data, no prime farmland is present within the Project Area. A small portion of the eastern edge of the Project Area is classified as Farmland of Statewide Importance. This portion of the Project Area is wooded and does not include any actively farmed land.

No cemeteries are present within the Project Area. Documented burial sites within one mile of the Project Area are described in Item 15 (Historic Properties).

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

The City of Eagan 2040 Comprehensive Plan (Comp Plan)[7] Future Land Use Map, identifies the Project Area and general vicinity to be a mix of parkland and potential business park development (Figure 6, Appendix A). The Comp Plan also identifies the parcels northwest of the railroad (including a small portion of the Project Area) as planned parks, open space and recreational use areas. The majority of this land is already under public ownership and is managed by Fort Snelling State Park (Figure 5, Appendix A). Nicols Road has been identified as a corridor for a future bike path.

The Lower Minnesota River Watershed District (LMRWD) Watershed Management Plan outlines resource protection plans and stormwater and other permitting requirements for development projects. However, LMRWD has a provision which states that permitting can be conducted through the Local Government Unit (LGU) if the LGU meets the standards contained within the LMRWD Management Plan. The City of Eagan meets these standards so permitting requirements are managed by the City. The Project Area is located in an area designated as a High Value Resources Area (HVRA) by LMRWD due to its proximity to the Nicols Fen.

The City of Eagan 2018 Wastewater Master Plan Update indicates the Project Area will remain a vital sanitary service corridor.

The Metropolitan Council is required to monitor the water levels in Nicols Fen and Kennaley's Creek as a requirement of DNR permit 91-6073[8] for dewatering at the Seneca Wastewater Treatment Plan.

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

According to the City of Eagan's zoning maps, the Project Area features Public Facility, Park, and Business Park zoning designations and is within a shoreland district (Figure 7, Appendix A). According to the FEMA FIRMette, the majority of the Project Area is within Zone X and is an area of minimal flood hazard (Appendix C). A small portion of the northern edge of the Project Area is within the 500-year (0.2 percent annual chance flood) hazard zone. Slightly north of the Project Area is a Zone AE (1 percent annual chance of flood) regulatory floodway associated .

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

The Project is not within the regulated 100-year floodplain or floodway and is not considered at risk for flooding.

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

The siphon outlet location is currently zoned as Public Facility. The existing infrastructure is buried and generally goes unnoticed by the public. The new structures and forcemain will continue to be underground and their improved condition would support future development as outlined in the 2040 Comp Plan. Failure to complete the Project would result in significant, if not catastrophic, impairments to

[7] City of Eagan. 2040 Comprehensive Plan. Adopted March 2, 2020. https://cityofeagan.com/2040plan
[8] *Amended Water Appropriation Permit*, Permit Number: 91-6073. Minnesota Department of Natural Resources. June 17, 2002.

the nearby environment, yielding the area unusable without remediation.

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

The Project is compatible with nearby land uses and public planning, therefore, no mitigation measures are proposed.

11. Geology, Soils and Topography/Land Forms

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

According to the Minnesota Geological Survey[9], conducted through the University of Minnesota, the surficial geology consists of postglacial, alluvial fan deposits characterized by loamy sand.

Dakota County is within the St. Croix Horst subprovince. The Project Area falls within the Prairie du Chien Group. The upper two-thirds to one half of this layer consists of dolostone of the Shakopee Formation and the lower portion consists of dolostone of the Oneota Dolomite[10]. Dolostone in these formations contain karst features, but according to the Minnesota Geospatial Commons, there are no karst feature inventory points within the Project Area[11]. The bedrock within the Project Area consists of sandstone, siltstone, chert, and conglomerate[12]. The depth to bedrock is approximately 101 feet to 200 feet.[13]

The most extensive aquifer that underlies most of Dakota County is the Prairie du Chien-Jordan bedrock aquifer. Additional aquifers present in the County include the St. Peter aquifer, the Platteville aquifer, and additional drift aquifers. The sensitivity of the Prairie du Chien-Jordan aquifer to pollution is rated as high-moderate within the Project Area, meaning that it would take years to a decade for contaminants to reach the aquifer. This is a result of the surficial geology in the area having moderate drift protection[14].

No susceptible geologic features such as sinkholes, shallow limestone formations, or karst conditions were identified in the Project Area. The Project Area does include adjacent groundwater-discharge wetlands and shallow seasonal groundwater.

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

[9] University of Minnesota. Minnesota Geological Survey – Surficial Geology of Minnesota ArcGIS Map. 2022. Available at: https://umn.maps.arcgis.com/apps/webappviewer/index.html?id=1813f21e8b7f4087bf5f44ef82ab2012&extent=-11181817.2869%2C5485178.4165%2C-9626782.3835%2C6217750.8956%2C102100. Accessed October 2022.
[10] University of Minnesota. Minnesota Geological Survey – Geologic Map of Minnesota Bedrock Geology PDF. 2011. Available at: https://conservancy.umn.edu/handle/11299/101466. Accessed October 2022.
[11] Minnesota Geospatial Commons. 2020. Karst Feature Inventory Points Shapefile. Available at: https://gisdata.mn.gov/dataset/geos-karst-feature-inventory-pts. Accessed October 2022.
[12] University of Minnesota. Minnesota Geological Survey – Minnesota Bedrock Geology ArcGIS Map. 2022. Available at: https://www.arcgis.com/apps/webappviewer/index.html?id=bd26cdfda43a4435a9e265c81549ea91&extent=-11312222.7109%2C4984136.2306%2C-9768806.2358%2C6574026.4189%2C102100. Accessed October 2022.
[13] University of Minnesota. Minnesota Geological Survey – Depth to Bedrock and Bedrock Topography PDF. 1990. Available at: https://conservancy.umn.edu/bitstream/handle/11299/58494/dakota_plt4_dpth2bdrk%5b1%5d.pdf?sequence=8&isAllowed=y. Accessed October 2022.
[14] University of Minnesota. Minnesota Geological Survey – Sensitivity of the Prairie Du Chien-Jordan Aquifer to Pollution. 1990. Available at: https://conservancy.umn.edu/bitstream/handle/11299/58494/dakota_plt7_sens_opdcjdn%5b1%5d.pdf?sequence=5&isAllowed=y. Accessed October 2022.

erosion potential, soil stability or other soils limitations, such as steep slopes, highlypermeable 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 inresponse to Item 12.b.ii.

According to the USDA NRCS Web Soil Survey[15], there are four soil map units within the EAW study area (see Table 7 below). A soil map unit is sometimes comprised of more than one soil series. The various series in a map unit represent associated soils that formed on different landscape positions within the map unit. The map unit is named after the most dominant soil series by areal extent. For example, map unit "611F Hawick loamy sand, 20 to 40% slopes" is expected to be 90% Hawick series and 10 percent other related soil series.

Soils within the 4.5-acre EAW area are primarily comprised of organic, depositional soils associated with perpetually saturated or flooded wetlands (Seelyeville muck). Such soils are comprised primarily of partially decomposed plant material that has accumulated in-situ since the end of the most recent glaciation. Persistent saturation or flooding creates a condition where annual deposition of dead plant material exceeds the annual decomposition rate. Approximately 11% of the mapped soils within the EAW area are loamy to sandy upland soils derived from colluvium or sandy outwash.

Table 7 below lists the soil map units within the Project Area and select map unit attributes relevant to Item 11b, such as Hydrologic Soil Group and wind and water erodibility factors. Attributes in Table 7 are for the dominant soil condition within the map unit. See Figure 8, Appendix A for soil map units and farmland classification.

The hydrologic soil groups are:

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

[15] USDA, Natural Resource Conservation Service. Web Soil Survey. Access June 2023. https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm

The soil erodibility factors are:

- **Wind Erodibility Group**: Soils are assigned a Wind Erodibility Group (WEG) rating based on their inherent vulnerability to soil particle detachment from wind forces. Values range from 1 (most erodible) to 8 (least erodible).
- **Water Erodibility Factor (K*f*)**: The Soil Erodibility Factor (K*f*) is a unitless quantitative description of the inherent vulnerability of a soil to water erosion. It provides a measurement of soil particles' susceptibility to detachment from rain drops or surface runoff. Values range from 0.02 (least erodible) to 0.69 (most erodible).

Table 7. Soil Map Units in the EAW Project Area[13]

Map Unit Symbol	Map Unit Name	Hydrologic Group	Wind Erodibility Group	Water Erodibility Factor (K*f*)	Acres	% of Project Area
540	Seelyeville muck	A/D	2	N/A*	1.4	31.0%
611F	Hawick loamy sand, 20 - 40% slopes	A	2	0.04	0.2	4.4%
1825C	Seelyeville muck, sloping	A/D	2	N/A*	2.6	58.0%
94C	Terril loam, 4 - 12% slopes	B	6	0.25	0.3	6.6%
				Total	**4.5**	**100.0**

**Organic soils are primarily comprised of partially decomposed organic matter and are typically saturated most of the year. They have minimal vulnerability to water erosion under normal circumstances and do not receive a Kf rating.*

Topography within the EAW study area is generally flat, with groundwater at or near the surface in most of the Project Area. The vast majority (93.4%) of mapped soils within the EAW study have minimal or no susceptibility to water erosion but can be highly susceptible to wind erosion when dry and exposed. The Terril map unit (6.6% of the EAW area) is slightly susceptible to wind erosion and moderately susceptible to water erosion. The Hawick loamy sands (4.4% of EAW area) are inherently unstable when disturbed due to their high sand content.

The NRCS soil mapping described above does not consider disturbed soils or impervious surfaces. Approximately 1.5 acres (33%) of the EAW area are comprised of impervious surface (roads, buildings, railroad) or are highly disturbed from grading and compaction (road ROW, buried facilities, or other disturbance). Geotechnical borings conducted in October 2023 indicated up to 10 feet of fill material over native peat under or adjacent to Nicols Road.

The Project does not present a significant soil loss risk. The Project consists primarily of repairing or installing subsurface facilities. All activity would occur within previously disturbed areas such as road right-of-way or existing facility locations. Construction activity would occur during the winter months when the risk of erosion is lower. Surface impacts would be temporary and would be restored to existing conditions upon completion.

12. Water Resources

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

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

Surface Waters

A review of Minnesota Department of Natural Resources (DNR) geospatial data determined that no lakes, trout streams or trout lakes[16], wildlife lakes[17], migratory waterfowl feeding/resting lakes[18], or outstanding resource value waters[19] are present within the Project Area. Three trout streams were identified within a half mile of the Project Area (Kennaley's Creek M-055-004-000.5; Black Dog Creek M-005-004; and Harnack Creek/Unnamed Stream M-055-004-001). The trout streams are located north and west of the Project Area. The headwaters of the west branch of Kennaley's Creek are adjacent to the Project Area, but this reach is not designated as a protected trout stream or listed as a Minnesota Public Water. Figure 9, Appendix A identifies major surface waters in the vicinity of the Project Area.

Due to the limited scale and disturbance level of the Project, there are no anticipated risks to the nearby trout streams.

DNR Public Waters

No DNR Public Waters and Watercourses are located within the Project Area (Figure 9, Appendix A). Table 5 lists DNR Public Waters and Public Watercourses within a one-mile radius of the Project Area, which includes the Minnesota River, several streams, two Public Water Wetlands and two lakes in the river floodplain.

Table 8. DNR Public Waters within One Mile of the Project Area

Name	Public Water ID	Type
Nicols Meadow Fen	19014200	Public Water Wetland
Woodhaven Pond	19014300	Public Water Wetland
Long Meadow Lake	27000200	Public Water Basin
Black Dog Lake	19008300	Public Water Basin
Minnesota River	M-055	Public Watercourse
Black Dog Creek	M-055-004	Public Watercourse
Harnack Creek/Unnamed Stream	M-055-004-001	Public Watercourse

[16] MDNR. 2020. State Designated Trout Streams, Minnesota. Available at: https://gisdata.mn.gov/dataset/env-trout-stream-designations. Accessed January 2023.
[17] MDNR. 2016. Designated Wildlife Lakes. Available at: https://gisdata.mn.gov/dataset/env-designated-wildlife-lakes. Accessed January 2023.
[18] MDNR. 2016. Migratory Waterfowl Feeding and Resting Areas. Available at: https://gisdata.mn.gov/dataset/env-migratory-waterfowl-areas. Accessed January 2023.
[19] MDNR. 2020. Lakes of Biological Significance. Available at: https://gisdata.mn.gov/dataset/env-lakes-of-biological-signific. Accessed January 2023.

Name	Public Water ID	Type
Kennaley's Creek	M-055-004-000.5	Public Watercourse
Unnamed Stream	M-055-004-004	Public Watercourse
Unnamed Stream	M-005-003	Public Watercourse
Unnamed Stream	M-005-003.1	Public Watercourse
N/A	MAJ-070214428	Public Watercourse
N/A	MAJ-070223847	Public Watercourse
N/A	MAJ-070223849	Public Watercourse
N/A	MAJ-070223848	Public Watercourse

Wetland Resources

Based on a review of the National Wetland Inventory (NWI) data, historic aerial imagery, and a wetland delineation performed by Stantec Consulting Services Inc. on October 11, 2022, six wetlands are present within the Project Area (Table 6; Figure 10, Appendix A). Appendix D provides the wetland delineation Notice of Decision, issued August 4, 2023.

Wetland 1 is located within the northwest corner of the Project Area and borders the northwest and southwest fence lines of the existing MCES facility. Wetland 1 is associated with the Nicols Meadow Fen and was field classified as a Type 1 scrub-shrub/emergent wetland community. Wetland 2 is located along the western side of the Project Area along Nicols Road. Wetland 2 is also associated with the Nicols Meadow fen and is identified by field verification as a Type 3, shallow marsh wetland community. Wetland 3 is located in the southeastern portion of the Project Area and was field classified as a Type 1, floodplain wetland community type. The three field-delineated streams were associated with Wetland 3 and flowed north towards a larger adjacent wetland complex located offsite. Wetland 4 is located along the northern border of the Project Area and was field classified as a Type 1, partly drained, floodplain wetland community. Wetland 5 is located within the roadside ditch of Nicols Road, east of the MCES lift station. Wetland 5 is associated with a culvert that is located under the driveway into the lift station and was field classified as Type 1, seasonally flooded basin. Wetland 6 is located along the north side of the railroad tracks on the west side of Nicols Road and was field classified as a Type 1, seasonally flooded basin. Table 6 summarizes wetlands delineated in the Project Area.

Table 9. Wetlands within the Project Area

Wetland ID	Circular 39	Cowardin	Eggers and Reed	Dominant Vegetation	Size (Acres Onsite)
Wetland 1 (W1)	Type 1	PSS1/ PEM1C	Floodplain	Black willow, boxelder, green ash, common buckthorn, red-osier dogwood, and reed canary grass.	0.04 acres
Wetland 2 (W2)	Type 3	PEM1C	Shallow Marsh	Hybrid cattail, and reed canary grass.	0.96 acres
Wetland 3 (W3)	Type 1	PEM1C/ PF01C	Floodplain	Black willow, common buckthorn, reed canary grass, and hybrid cattail.	0.68 acres

Wetland ID	Circular 39	Cowardin	Eggers and Reed	Dominant Vegetation	Size (Acres Onsite)
Wetland 4 (W4)	Type 1	PEM1Ad	Floodplain	Reed canary grass and giant goldenrod	0.01 acres
Wetland 5 (W5)	Type 1	PEM1Ax	Seasonally Flooded Basin	Giant goldenrod and hybrid cattail	0.003 acres
Wetland 6 (W6)	Type 1	PEM1A	Seasonally Flooded Basin	Reed canary grass, fox sedge, and jewelweed.	0.02 acres

Nicols Fen

The Project Area is located adjacent Nicols Meadow Fen. The Nicols Meadow Fen is classified as a calcareous fen. Calcareous fens are considered rare and vulnerable habitats and have special protection under Minnesota statute (103G.223) and Rule 8420.0935. Groundwater monitoring of the fen and adjacent streams has been conducted by MCES since 1993 as part of the conditions for Minnesota DNR permit #91-6073, which was issued for dewatering operations at the Seneca WWTP. MCES is preparing a Calcareous Fen Management Plan (CFMP) that will address maintenance and monitoring of the Nicols Fen in relation to Seneca WWTP dewatering activities. The fen is fed by groundwater and many springs and seeps are present in the area. Threatened and rare species have been previously found in Nicols Fen. Item 14 provides additional detail regarding rare features associated with Nicols Fen.

MPCA 303d Impaired Waters List

A review of the MPCA's 2022 Impaired Waters List[20] showed no impaired waters within the Project Area. The nearest impaired water is the Minnesota River, Assessment Unit Identification (AUID) 07020012-505, which is approximately 0.5 miles northwest of the Project Area. The Minnesota River is designated as impaired for aquatic consumption and aquatic life.

Floodway/Floodplain

A FIRMette was generated through the Federal Emergency Management Agency (FEMA) National Flood Hazard Layer (NFHL) mapping tool[21], which indicates that the Project Area is located within Zone X, an area with minimal flood hazard. Appendix C includes the FEMA FIRMette for the Project Area. In the very northern end of the Project Area, a small corner of the Project Area is within the 0.2% annual chance flood hazard zone and slightly north of the Project Area is a Zone AE regulatory floodway.

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

1. *Depth to groundwater*

   Based on a review of domestic water wells located near the Project Area, the depth to static water level ranges from -4.2 feet and 32.8 feet with an average depth to static water levels of 4.7 feet. The Project would occur adjacent to and within identified wetlands. It is anticipated

[20] MPCA 2022. 2022 Impaired Waters List. Available at: https://www.pca.state.mn.us/water/impaired-waters-viewer-iwav. Accessed December 2022.
[21] FMEA. 2020. National Flood Hazard Layer FIRMette. Available at: FEMA Flood Map Service Center | Search By Address. Accessed December 2022.

that shallow groundwater will be present within the Project Area.

Three known groundwater springs are mapped within the Project Area (Figure 9, Appendix A). Groundwater seeps are likely present within Nicols Fen to the west of the Project Area. Care would be taken during construction to identify and avoid damaging spring and seep discharge locations.

2. *MDH Wellhead Protection Area*

The Project Area is not within a MDH Wellhead Protection Area (WHPA) or Drinking Water Supply Management Area (DWSMA)[22].

3. *Onsite and/or nearby wells*

A search of the MDH Minnesota Well Index (MWI) database indicates that there are approximately 17 wells present within the Project Area[23]. Six wells are present within close proximity of the Project Area. Table 7 tabulates documented wells within the vicinity of the Project Area based on the MDH MWI database. Figure 11, Appendix A identifies the locations of wells in the vicinity of the Project. Appendix E provides the MDH well log records.

Table 10. MWI Wells within the Project Area and close proximity

Well ID	Use Type	Status	Elevation (msl ft.)	Well Depth (ft.)	Static Water Level (ft.)
526714	Piezometer	Sealed	721.29	7	3.1
227989	Monitor	Sealed	722	8	N/A
526713	Piezometer	Sealed	729.99	7	1.7
526708	Piezometer	Sealed	727.71	40	N/A
526711	Piezometer	Sealed	726.35	7	1.9
526705	Piezometer	Sealed	738.97	6	N/A
526702	Piezometer	Sealed	753.08	36	7.3
526701	Piezometer	Active	748.8	28	1.1
522299	Monitor	Active	748.8	10	1.3
526707	Piezometer	Sealed	738.82	8	N/A
526709	Piezometer	Sealed	727.21	6	1.2
526706	Piezometer	Sealed	738.82	37	-3.1
526710	Piezometer	Sealed	726.35	40	2.1
526712	Piezometer	Sealed	723.99	33	32.4

[22] MDH. Source Water Protection Web Map Viewer. Available at: https://mdh.maps.arcgis.com/apps/View/index.html?appid=8b0db73d3c95452fb45231900e977be4. Accessed April 2022.
[23] MDH. Minnesota Well Index. Available at: https://mnwellindex.web.health.state.mn.us/mwi/. Accessed April 2022.

Well ID	Use Type	Status	Elevation (msl ft.)	Well Depth (ft.)	Static Water Level (ft.)
526715	Piezometer	Sealed	721.99	35	32.8
526704	Piezometer	Sealed	738.97	36	-4.2
526703	Piezometer	Sealed	753.08	11	1.9
277770	Monitor	Active	716.7	7	0
277775	N/A	N/A	716.7	21.1	N/A
277774	N/A	N/A	719.92	17.9	N/A
452924	Monitor	Active	720.2	75	N/A
452925	Monitor	Active	721.2	21	N/A
248272	Other	Active	793	0	0

Nicols Fen Groundwater Monitoring

Groundwater monitoring of Nicols Fen and associated streams has been conducted by MCES since 1993 as part of the conditions for Minnesota DNR permit #91-6073, issued for dewatering operations at the Seneca WWTP. Several monitoring wells are present in and around the fen to monitor groundwater levels; the wells are operated by a combination of the DNR and MCES. Additionally, surface water flow monitoring is conducted in the adjacent Kennaley's Creek and Harnack Creek.

b. Describe effects from project activities on water resources and measures to minimize or mitigate the effects in Item 12.b.i. through Item 12.b.iv. below.

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

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

Not applicable. Existing wastewater is treated at Seneca WWTP. Construction will not influence volume or loadings.

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

Not applicable.

3) If the wastewater discharge is to surface water, identify the wastewater treatment methods

and identify discharge points and proposed effluent limitations to mitigateimpacts. Discuss any effects to surface or groundwater from wastewater discharges,taking into consideration how current Minnesota climate trends and anticipated climate change in the general location of the project may influence the effects.

Not applicable.

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 orare classified as special as defined in the Construction Stormwater permit. Describe additional requirements for special and/or impaired waters.

The Project would not result in a change in land cover and stormwater management would remain unchanged after construction. Approximately 1.4 acres of temporary disturbance would occur during construction. There would be no increase to impervious surface area compared to existing conditions.

A Stormwater Pollution Prevention Plan (SWPPP) would be prepared as part of the National Pollutant Discharge Elimination System (NPDES) Construction Permit required for the Project. The SWPPP would conform to permit requirements and address sediment and erosion control Best Management Practices (BMPs) during construction. Sediment and erosion control BMPs may include bio-rolls, silt fence, rock construction entrances, inlet protection devices, erosion control blankets, erosion stabilization mats, and/or other similar devices to prevent soil erosion and sediment transport. Disturbed areas specified to be revegetated would be restored with final stabilization per permit requirements. Special care would be taken to avoid impacts to Nicols Fen by limiting ground disturbance to the road shoulder and immediate ROW on the west side of Nicols Road.

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

The Project would not appropriate, or directly discharge to, surface or subsurface waters during operation. During construction, dewatering would be required for installation of the temporary conveyance taps, the replacement of MH 1, and the South Junction Structure. Dewatering may also be required at M501A where the proposed forcemain 7030 would connect to the existing, concrete-encased forcemain. A DNR dewatering permit would be obtained prior to construction.

Separate open excavations would be required for installation of the new MH 1 and the new South Junction Structure. The first excavation would be to install the new South Junction Structure. Once complete, the excavation would be backfilled before excavation begins for the new MH 1 structure. Each excavation would have a maximum depth of approximately 20 feet. Dewatering would be conducted via a sump pump on the excavation floor. The pump would discharge to a filter bag or other BMP prior to discharging to a storm sewer on the east side of Nicols Road. The entirety of the excavations would be lined with steel sheeting. The sheeting would prevent horizontal flow of groundwater into the excavation, greatly reducing the volume of groundwater entering the excavation. The sheeting would be driven approximately 10 feet below the excavation depth, for a total sheet depth of 30 feet below ground surface. The sheeting would be removed after construction. It is anticipated the excavations would remain open for a total of four to eight weeks and that dewatering would be required for the duration of construction.

The boring pit on the north side of the UPRR track will also be used to tie in the new 7030 forcemain into M501A. The excavation would be up to eight feet deep and follow the existing 7030 alignment. Dewatering would be conducted via a sump pump on the excavation floor. The pump would discharge to a filter bag or other BMP prior to discharge to the ground surface. Either side of the trench would be lined with trench boxes, which would limit, but not eliminate, horizontal groundwater flow into excavation. It is anticipated that the excavation would be open for up to 4 weeks and dewatering would occur only as needed, if at all.

An analysis of groundwater Radius of Influence (ROI) for the dewatering locations was conducted by Stantec and is provided in Appendix F. The analysis utilized surficial geology data, piezometer data, and soil boring data to estimate dewatering AOI using the Sichardt formula. Appendix F includes the dewatering analysis summary memorandum. Solving for ROI using the Sichardt's equation returns an estimated "worst-case" ROI extent at which drawdown could be observed due to proposed dewatering activities. The analysis estimates dewatering ROI of 176 feet at the South Junction Structures Area and 62 feet at the M501A area. The dewatering activity is not anticipated to adversely affect the sensitive Nicols Fen hydrology.

The temporary conveyance installation and dewatering activities would occur between April and May 2024, as soon as the contractor can break ground. No excavation would be started until all material for the taps and risers are on-site. Additionally, the temporary conveyance design was chosen to provide the shortest installation period.

The MH 1 and South Junction Structure dewatering activities would occur between approximately December 2024 and March 2025. The M501A dewatering would occur approximately between December 2025 and March 2026. The dewatering activities would not occur simultaneously. The cold conditions and typically more stable groundwater elevations during this period may help minimize dewatering needs.

iv. Surface Waters

a) Wetlands - Describe any anticipated physical effects or alterations to wetland features such as

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

Impacts to wetlands are regulated by the Minnesota Wetland Conservation Act (WCA) and the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act. The Minnesota Department of Natural Resources (DNR) is the WCA local governmental unit (LGU) since the Project is within DNR property.

Six wetlands were identified within the Project Area covering a combined 1.71 acres. Based on the current design plan, it is anticipated that the Project would not result in any permanent filling or draining of wetlands. There would likely be temporary impacts to Wetland 2, Wetland 3, and Wetland 6 due to excavation activities. A temporary conveyance pipe would lay on the surface through parts of Wetland 3 while replacement work is conducted on the MCES structure parcel. Swamp mats will be used to help distribute the pipe's weight over the soft soils. Some tree cutting would be required within Wetland 3 in preparation for the structure replacements.

Wetland permit applications will be submitted to MDNR and USACE in January 2024. The proposed impact areas would be restored to pre-project conditions following permit requirements. This would not include replanting the removed trees. Construction is planned to occur during the winter to minimize the potential to impact wetlands to the extent possible. Figure 12, Appendix A identifies potential wetland impacts based on preliminary design.

b) Other surface waters- Describe any anticipated physical effects or alterations to surface water features (lakes, streams, ponds, intermittent channels, county/judicialditches) 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 thewater features. Discuss how the project will change the number or type of watercraft on any water body, including current and projected watercraft usage.

The Project is not expected to result in permanent impacts to surface water features, nor is the Project expected to change the number or type of watercraft on nearby waterbodies. The Project may cause temporary impacts to vegetation in Wetland #6; disturbance would be minimized to the greatest extent possible and vegetation restored, except for removed trees, following construction. Dewatering during construction may temporarily impact groundwater levels, however groundwater levels are expected to return to normal conditions following the conclusion of dewatering activities.

13. Contamination/Hazardous Materials/Wastes

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

A review of the Minnesota Pollution Control Agency (MPCA) *What's in My Neighborhood* (WIMN) database[24] was conducted to identify documented potentially contaminated sites within or in the vicinity of the Project Area. Two WIMN records are located within the Project Area, one of which includes a now closed investigation and cleanup. Three sites are located within 1,000 feet of the Project Area. Table 9 details these sites and Figure 13, Appendix A shows the locations of the sites.

Table 11. MPCA WIMN Database Inquiry Results in the Vicinity of the Project Area

Site ID	Site Name	MPCA Program	Status
Sites Within the Project Area			
140451	Burnsville Lift Station L-13	• One aboveground diesel storage tank (880 gallons) (TS0125663) • Environmental review (ENR-2014-091)	• Active (registered in 2012) • Inactive (EAW received and completed in 2014)
186218	Promiscuous Dump – Eagan	• Investigation and cleanup – site assessment (SA0007446)	Inactive (registered in 1987; site closed in 1998)
Sites Within 1,000 Feet of the Project Area			
39571	Wingfoot Commercial Tire Systems	• Hazardous waste (MND982602757)	Inactive (registered in 1985)
191393	NSP Cedar Ave Expansion Ash Utlztn Proj	• Investigation and cleanup – site assessment (SA0007439)	Inactive (registered in 1987; site closed in 1998)
192871	Nicols GW Contamination	• Investigation and cleanup site – CERCLIS site (MND985681246)	Inactive (CERCLIS/SEMS listing in 1987)

An additional review of the Minnesota Department of Agriculture (MDA) WIMN database[25] was conducted to identify potentially contaminated sites documented within or in the vicinity of the Project Area. No records were identified within the Project Area or within 1,000 feet of the Project Area.

[24] MPCA. 2022. What's in My Neighborhood. Available at: https://www.pca.state.mn.us/about-mpca/whats-in-my-neighborhood. Accessed November 2022.
[25] MDA. 2022. What's in My Neighborhood? – Agricultural. Available at: https://www.mda.state.mn.us/chemicals/spills/incidentresponse/neighborhood. Accessed October 2022.

The construction and operation of the Project is not anticipated to exacerbate any pre-existing environmental hazards. In the event that potentially contaminated soils or other potentially hazardous materials are encountered during construction, a stop work order would be issued and plans would be developed to properly handle and treat contaminated soil and/or groundwater. Any contaminated soils or other potentially hazardous materials encountered during construction would be handled and disposed of in accordance with MPCA and any other applicable requirements.

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

Construction wastes would be typical of a utilities, roads, and commercial/industrial structures. These wastes are typically nonhazardous and would be managed as municipal solid waste (MSW).

Hazardous waste may be generated during demolition of the existing MH 1, South Junction Structure, and 7030 forcemain. A hazardous materials survey would be completed prior to the start of replacement activities. If any regulated materials such as asbestos-containing materials, lead-based paint and other regulated materials/wastes are present, an abatement plan would be prepared to address removal and proper disposal of regulated materials identified in the hazardous materials survey. If required, a comprehensive abatement closeout report would be prepared following abatement and replacement activities, which would document the removal, management, and disposal of any regulated materials.

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

Trucks and equipment used during construction and operation may require the use of potentially hazardous materials, such as gasoline or diesel fuels, motor oils, hydraulic fluids, and other lubricants. Vehicles responsible for the transportation of hazardous materials are equipped with spill kits for rapid response to any spills and refueling procedures would be implemented to eliminate leakage.

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

No additional hazardous wastes are anticipated to be stored or generated as a result of the proposed Project. See Section b. for details on potential regulated materials within the Project Area. See Section c. for details on hazardous wastes anticipated for the Project.

14. Fish, Wildlife, Plant Communities, and Sensitive Ecological Resources (Rare Features)

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

The land cover within the Project Area consists primarily of developed land; including, Nicols Road, a railroad ROW, and current MCES infrastructure (lift station and siphon outlet); floodplain, shallow marsh, and fresh meadow wetlands; and mixed forest. A residential area is located to the southeast with the rest of the Project Area being surrounded by forested and wetland habitats, including one calcareous fen system to the north and one directly adjacent to the Project Area to the west. The Project Area is located approximately 0.5 miles south of the Minnesota Valley National Wildlife Refuge and the Minnesota River. The parcel immediately west of the Project Area is part of Fort Snelling State Park. The Project Area is located within a state important bird area (IBA): the Lower Minnesota River Valley IBA. These are areas identified by Audubon to be of importance to birds on the state, continental, and global scale[26]. Due to the dominance of developed land within the Project Area, there is limited habitat available within the Project Area for migratory birds and other wildlife. However, the wetlands and mixed forest within and around the Project Area may support animals such as migratory birds, bats, deer, toads, salamanders, and turtles.

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, andother sensitive ecological resources on or within close proximity to the site. Provide the license agreement number (LA-__) 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 the results.

Native Plant Communities and Sites of Biodiversity Significance

Native plant communities, sites of biodiversity significance, and regionally significant ecological areas (RSEAs) were reviewed within the Project Area and a one-mile buffer using Stantec's NHIS license LA-1005. The northwestern corner of the Project Area falls within a biodiversity site ranked as moderate and the southeastern portion falls within a RSEA ranked as outstanding. The Project Area is also directly adjacent to an open rich peatland, calcareous fen systems associated with Nicols Fen to the north and west, which are ranked as moderate. Additional sites within a one-mile buffer include features closely associated with the Minnesota Valley National Wildlife Refuge and Minnesota River to the north, such as floodplain forest systems, marsh systems, sites of biodiversity significance rated as below and moderate, and an RSEA ranked as outstanding. Additional sites within the one-mile buffer southwest of the Project Area include a wet meadow/carr system, marsh systems, a mesic hardwood forest system, a calcareous fen, a site of biodiversity significance ranked as moderate, and a RSEA ranked as outstanding.

Existing plant communities within the Project footprint are dominated by non-native species including hybrid cattail (*Typha* X *glauca*), giant reed grass (*Phragmites australis*), reed canary grass (*Phalaris arundinacea*), common buckthorn (*Rhamnus cathartica*), and purple loosestrife (*Lythrum salicaria*). Plant communities retaining native plant constituents do occur in pockets and along game paths west of the existing road ditch. Alterations by past construction along Nicols Road may have provided an avenue for non-native plants to gain a foothold.

State – Listed Species

Under Stantec's Limited License to Use Copyrighted Material (LA-1005) related to Rare Features Data, the Minnesota Department of Natural Resources (DNR) Natural Heritage Information System (NHIS)

[26] Audubon. 2022. Important Bird Areas. Available at: https://www.audubon.org/important-bird-areas. Accessed October 2022.

was searched in October 2022 to identify species within the Project Area and within a one-mile buffer of the Project Area. Records of threatened, endangered, and special concern species were identified within the Project Area and within the one-mile buffer.

Project details were submitted to the DNR Minnesota Conservation Explorer (MCE) and a response letter was provided by the DNR on April 11, 2023 (MCE #2022-00816) which identified rare features that may be impacted by the project. A botanical survey was recommended by the DNR. The following paragraphs summarize state-listed species and rare features within the vicinity of the Project Area. Species descriptions are based on information provided in the DNR's Rare Species Guide.[27]

Records Within the Project Area

Threatened

Hair-like Beak Rush (*Rhynchospora capillacea*)

The primary habitat for this species is along the margins of calcareous fens pools and marl flats. This species can also be found in spring fens within large peatland complexes in forested regions. No habitat containing marl flats or calcareous fen pools were identified during searches within the Project Area for this species. Searches were conducted three times during the 2023 growing season.

Sterile Sedge (*Carex sterilis*)

This species is mainly associated with calcareous fen communities, which are characterized by wet, open, and sunny conditions. Sterile sedge can also rarely be found in smaller populations in spring fens in the transition and northern forested regions. This species occurs sparingly along game trails and in pockets outside the Project footprint.

Stream Parsnip (*Berula erecta*)

Stream parsnip is rarely found more than a few meters from a spring water source. As such, this species is found in calcareous and hydrologically active habitats, namely wet seepage meadows, calcareous fens, spring-fed streams, and forested ravines. Stable, cold, oxygen-poor, and calcium-rich groundwater found at this species roots allows living plants to persist into the months of November and December. This species occurs in hydrologically active habitats outside the Project footprint and within the existing western road ditch. Pockets of this species occupy pools of discharging groundwater on peaty ground. One population could be affected at the north end where Nicols Road crosses the railroad tracks.

Whorled Nutrush (*Scleria verticillata*)

This species is only found in calcareous fens and generally only occurs in those with little to no disturbance. The sedge occurs on exposed marl and along the margins of shallow pools where the pH and mineral content is very high. No habitat containing marl flats or calcareous fen pools were identified during searches within the Project footprint for this species. Searches were conducted three times during the 2023 growing season.

[27] MDNR. 2022a. Rare Species Guide. Available at: https://www.dnr.state.mn.us/rsg/index.html. Accessed October 2022.

Special Concern

Regal Fritillary (*Argynnis idalia*)

This butterfly is found only in native prairies, both upland and wetland. However, the larvae appear to be restricted to upland prairie where they feed exclusively on the nectar of violets (*Viola spp.*), such as prairie bird's-foot violet (*Viola palmata var. pedatifida*) and bird's-foot violet (*V. pedata*), the latter of which is utilized in the southeast section of the state.

The Project Area consists of developed land, including roadway and railway, wetlands, and mixed forest. No suitable habitat (native prairie) is present within the Project Area to support the regal fritillary. Therefore, the Project would have ***no impact*** on this species.

Small White Lady's-slipper (*Cypripedium candidum*)

This species is primarily found in deep-soil mesic prairies with either calcareous till, lacustrine clays, or fibric, sedge-derived peat. Additional habitats include wet prairies, some sedge meadows, and calcareous fens. This species is not found in areas with a history of grazing or crop production. This species was located at the south end of the Project Area outside the project disturbance limits.

Records Within the One Mile Buffer

Endangered

Ebonyshell (*Reginaia ebenus)*

Primary habitat for the ebonyshell consists of large rivers with sand or gravel substrate (MDNR 2022a)[1].

The Project Area consists of developed land, including roadway and railway, wetlands, and mixed forest. No suitable habitat (large rivers) is present within the Project Area to support the ebonyshell. Therefore, the Project would have ***no impact*** on this species.

Elephant-ear (*Elliptio crassidens)*

Primary habitat for the elephant-ear mussel consists of large rivers with mud, sand, or fine gravel substrate.

The Project Area consists of developed land, including roadway and railway, wetlands, and mixed forest. No suitable habitat (large rivers) is present within the Project Area to support the elephant-ear. Therefore, the Project would have ***no impact*** on this species.

Pistolgrip (*Tritogonia verrucosa*)

Primary habitat for the pistolgrip mussel in Minnesota consists of large rivers with moderate current and gravel substrate.

The Project Area consists of developed land, including roadway and railway, wetlands, and mixed forest. No suitable habitat (large rivers) is present within the Project Area to support the pistolgrip. Therefore, the Project would have ***no impact*** on this species.

Rock Pocketbook (*Arcidens confragosus*)

The rock pocketbook mussel can be found in medium to large rivers with silt or sand substrates in areas with slow currents.

The Project Area consists of developed land, including roadway and railway, wetlands, and mixed forest. No suitable habitat (medium to large rivers) is present within the Project Area to support the rock pocketbook. Therefore, the Project would have ***no impact*** on this species.

Washboard (*Megalonaias nervosa*)

The washboard mussel inhabits large rivers or the main channels of a stream. These waterbodies should have sand, gravel, or mud substrates and have a slow current.

The Project Area consists of developed land, including roadway and railway, wetlands, and mixed forest. No suitable habitat (large rivers or main stream channels) is present within the Project Area to support the washboard. Therefore, the Project would have ***no impact*** on this species.

Yellow Sandshell (*Lampsilis teres*)

Suitable habitat for the yellow sandshell in Minnesota consists of large rivers with fine to coarse substrates and slow currents.

The Project Area consists of developed land, including roadway and railway, wetlands, and mixed forest. No suitable habitat (large rivers) is present within the Project Area to support the yellow sandshell. Therefore, the Project would have ***no impact*** on this species.

Threatened

Black Buffalo (*Ictiobus niger*)

Suitable habitat for the black buffalo, a freshwater fish, includes sloughs, impoundments, and rivers with fast or slow currents, including the Mississippi River. Depths in which they can occur range from one to eight meters and water velocity ranges from zero to 0.57 meters per second.

The Project Area consists of developed land, including roadway and railway, wetlands, and mixed forest and does not contain suitable habitat for this species (sloughs, impoundments, or rivers). Therefore, the Project would have ***no impact*** on the black buffalo.

Blanding's Turtle (*Emydoidea blandingii*)

Blanding's turtle requires wetland complexes with adjacent sand uplands to sustain viable populations. Calm, shallow waters, including wetlands associated with rivers and streams with rich aquatic vegetation are preferred. This turtle occurs on a variety of wetland and riverine types throughout Minnesota. In the southern part of the state, it prefers deeper marshes, backwater pools, and bottomland wetlands in summer and winter, and ephemeral wetlands are preferred in spring and early summer. Female Blanding's turtles prefer to nest in open sandy uplands. Although they prefer undeveloped land, they have been known to nest in agriculture fields, residential property (low density suburb housing), gardens, under power lines, and in road shoulders (especially dirt roads). Females may travel up to 1.6 kilometers (1 mile) overland from their resident marsh to their nest site at which time they are vulnerable to predators and road mortality. Hatchlings leave the nest from mid-August through early October. Because eggs are laid far

from water, hatchlings are vulnerable to predators, automobiles, and desiccation while traveling from the nest to a wetland.[28]

The Project Area includes wetlands as well as some sandy soils according to a wetland delineation performed in October 2022. Additional wetlands are present in the vicinity of the Project Area with some being associated with the Minnesota Valley National Wildlife Refuge and Minnesota River located approximately 0.5 miles to the north. As such, suitable habitat in the form of a wetland complex is present within and around the Project Area for the Blanding's turtle. Therefore, the Project ***may impact*** the Blanding's turtle.

Butterfly Mussel (*Ellipsaria lineolata*)

Suitable habitat for the butterfly mussel consists of large rivers with either sand or gravel substrates and fast currents.

The Project Area consists of developed land, including roadway and railway, wetlands, and mixed forest. No suitable habitat (large rivers) is present within the Project Area to support the butterfly mussel. Therefore, the Project would have ***no impact*** on this species.

Edible Valerian (*Valeriana edulis var. ciliata*)

General features of suitable edible valerian habitat include moist, sunny, and calcareous environments with either loam, rock, or peat soils. Therefore, this species can be found in wet meadows, calcareous fens, and moist prairies, and along railroad ROWs. In southeastern Minnesota, the species can also be found in moist areas of cliff ledges.

The Project Area consists of some loamy sand and peat soils according to a wetland delineation completed in October 2022. A railroad ROW is also present in the northwest portion of the Project Area. As such, suitable habitat is present to support the edible valerian and the Project ***may impact*** this species.

Mucket (*Actinonaias ligamentina*)

Suitable habitat for the mucket mussel consists of medium to large rivers with coarse sand and gravel substrate.

The Project Area consists of developed land, including roadway and railway, wetlands, and mixed forest. No suitable habitat (medium to large rivers) is present within the Project Area to support the mucket. Therefore, the Project would have ***no impact*** on this species.

Pugnose Shiner (*Notropis anogenus*)

The pugnose shiner inhabits small to medium-sized streams with minimal current as well as clear glacial lakes with sand, gravel, mud, marl, or detritus substrates. This species is almost always found among muckgrass (*Chara* spp.) or other rooted aquatic plants. Finally, the pugnose shiner occupies the littoral zone of lakes and rivers. By mid-May they can be located at a depth of approximately 1.2-1.8 meters, while from mid-summer to late July they can be located at 0.9-1.2 meters before returning to deeper waters.

[28] MDNR Division of Ecological Resources. 2008. Endangered, Threatened, and Special Concern Species of Minnesota: Blanding's Turtle (Emydoidea blandingii). Environmental Review Fact Sheet Series. Accessed October 2022.

The Project Area consists of developed land, including roadway and railway, wetlands, and mixed forest. No suitable habitat (small to medium streams or glacial lakes) is present within the Project Area to support the pugnose shiner. Therefore, the Project would have ***no impact*** on this species.

Spike (*Eurynia dilatata*)

The spike mussel inhabits small to large rivers, reservoirs, and lakes. They are associated with sand and gravel substrates and can be found at depths ranging from 0.6-7.3 meters. When present in reservoirs and lakes, they are associated with outlet habitats with fast currents.

The Project Area consists of developed land, including roadway and railway, wetlands, and mixed forest. No suitable habitat (rivers, reservoirs, or lakes) is present within the Project Area to support the spike. Therefore, the Project would have ***no impact*** on this species.

Wartyback (*Quadrula nodulata*)

The wartyback mussel inhabits large rivers with fine or coarse substrates and slow to moderate currents.

The Project Area consists of developed land, including roadway and railway, wetlands, and mixed forest. No suitable habitat (large rivers) is present within the Project Area to support the wartyback. Therefore, the Project would have ***no impact*** on this species.

Special Concern

American Eel (*Anguilla rostrata*)

Suitable habitat for the American eel ranges from medium to large rivers, lower reaches of tributaries, backwaters, tailwater zones of dams, main channel borders, and side channel borders. Additional requirements include continuous water flow, water depths ranging from 0.8-3.1 meters, mud or rock substrate, and daytime cover such as boulders or log jams.

The Project Area consists of developed land, including roadway and railway, wetlands, and mixed forest. No suitable habitat (medium to large rivers, tributaries, or channels) is present within the Project Area to support the American eel. Therefore, the Project would have ***no impact*** on this species.

Big Brown Bat (*Eptesicus fuscus*)

Summer foraging habitat for the big brown bat consists of forested systems near water sources, namely fire-dependent forest, mesic hardwood forests, and floodplain forests. Roosting habitat includes hollow trees with loose bark, cracks, or crevices, as well as human structures like buildings and bridges. During the winter, the big brown bat roosts in hibernacula such as caves and mines, but will also utilize buildings, cellars, and tunnels. No matter which site is used for hibernation, they prefer constant, colder temperatures, high humidity, and minimal airflow.

The Project Area is located approximately 0.5 miles south of the Minnesota River and consists of mixed forest as well as floodplain wetlands identified in the October 2022 wetland delineation. As such, suitable foraging and roosting habitat for the big brown bat is present within the Project Area and in the vicinity of the Project Area. Therefore, the Project ***may impact*** the big brown bat.

Black Sandshell (*Ligumia recta*)

The black sandshell inhabits riffles and runs of medium to large rivers and is associated with sand or gravel substrate.

The Project Area consists of developed land, including roadway and railway, wetlands, and mixed forest. No suitable habitat (medium to large rivers) is present within the Project Area to support the black sandshell. Therefore, the Project would have ***no impact*** on this species.

Little Brown Myotis (*Myotis lucifugus*)

Summer foraging and roosting habitat for the little brown myotis consists of forested systems near water sources, namely fire-dependent forests, mesic hardwood forests, and floodplain forests. Maternity colonies prefer to roost in hot and humid sites with old-growth forest where tree snags and decomposing trees with loose bark, cavities, and crevices are more available. Males, not restricted by the temperature requirements for raising pups, roost alone. During the winter, this species utilizes hibernacula that have high humidity levels, minimal airflow, and constant temperatures. Preferred sites for hibernation include underground features such as caves, cellars, and tunnels.

The Project Area is located approximately 0.5 miles south of the Minnesota River and consists of mixed forest as well as floodplain wetlands identified in the October 2022 wetland delineation. As such, suitable foraging and roosting habitat for the little brown myotis is present within the Project Area and in the vicinity of the Project Area. Therefore, the Project ***may impact*** the little brown myotis.

Northern Long-eared Bat (*Myotis septentrionalis*)

The species description and determination for the northern long-eared bat is described in the Federally-Listed Species section below.

Federally – Listed Species

The USFWS Information for Planning and Consultation (IPaC) tool[29] was reviewed to identify federally listed species within the Project Area. Four species were identified that have the potential to occur within the Project Area: the higgins eye pearlymussel (*Lampsilis higginsii*; endangered), rusty patched bumble bee (RPBB) (*Bombus affinis*; endangered), northern long-eared bat (NLEB) (*Myotis septentrionalis*; endangered), and monarch butterfly (*Danaus plexippus*; candidate). Determination keys were evaluated through IPaC. Appendix G provides the consistency letters generated through the IPaC determination keys.

Higgins Eye Pearlymussel

This freshwater mussel is found in large rivers with deep water and moderate currents. The Higgins eye buries itself in sand and gravel river bottoms with the edge of its partially opened shell exposed. They utilize the current of the river to siphon water for microorganisms such as algae and bacteria, which they use for food.

The Project Area consists of developed land, including roadway and railway, wetlands, and mixed forest. No suitable habitat (large rivers) is present within the Project Area to support the Higgins eye

[29] USFWS. 2022a. IPaC – Information for Planning and Consultation. Available at: http://ecos.fws.gov/ipac/. Accessed October 2022.

pearlymussel. Therefore, the Project would have ***no effect*** on the species.

Northern Long-Eared Bat

Suitable roosting, forage, and travel habitat for NLEB in the summer consists of a wide variety of forested and wooded habitats. While roosting, NLEB is generally found in deep crevices in areas such as forests and woodlots (i.e., live trees and/or snags greater than or equal to three inches diameter at breast height that have exfoliating bark, cracks, crevices, and/or cavities) as well as linear features such as fence rows, riparian forests, and other wooded corridors. NLEB roosts in both live trees or snags. (Sasse and Perkins 1996[30]; Foster and Kurta 1999[31]; Owen et al. 2003[32]). During winter months, NLEB hibernate in caves or abandoned mines (Foster and Kurta 1999[3]).

Dakota County is not listed as a county with documented white nose syndrome (WNS), but it is documented as being positive for *Pseudogymnoascus destructans* (Pd) according to the White Nose Syndrome Response Team (WNSRT) individual spread maps.[33] According to the NHIS database, an NLEB record exists approximately 1,500 feet outside of the Project Area.

The Project Area contains contiguous mixed forest, thus suitable summer roosting/foraging habitat for NLEB is present. Additionally, the Project Area is within a Pd positive county, but wholly outside of a WNS zone. Finally, no known, occupied maternity roost trees or hibernacula were identified in the MDNR and USFWS joint document, but a NLEB record was identified in the NHIS review. Construction of the Project would require the removal of up to 75 mature trees adjacent to the existing South Junction Structure and along the proposed alignment of the temporary conveyance pipeline. Tree removals have been minimized to the extent possible by shifting the temporary conveyance southward. Tree removals would occur during the inactive season for the NLEB (November 15 to March 31) to avoid impacts to the extent possible. As such, the Project ***may affect, but is not likely adversely affect*** the NLEB.

Rusty Patched Bumble Bee

The RPBB can be distinguished from other members of the *Bombus* genus by a rusty-orange patch on the top edge of the second abdominal segment, as well as a black "thumb tack" hair pattern on the thorax. The queens lack both the rusty patch and thumb tack pattern. Instead, her first and second abdominal segments are completely yellow with the rest being completely black (University of Minnesota Bee Lab 2022)[34]. This species is known as a habitat generalist but needs adjust with the various aspects of their life history.

Their habitat needs can be broken down to include overwintering habitat, nesting habitat, spring foraging habitat, and summer and fall foraging habitat. Overwintering habitat consists of woodland edges, as well as upland forest and woodland interiors. Woodland types generally consist of even-aged maple-basswood or oak-hickory, and the overwintering queens can be found in shady areas with loose soils, little vegetation, and leaf litter. Nesting habitat (colonies) includes grasslands and shrublands, upland forest, and woodland edges extending approximately 30 meters into the woodland. Loose soils and leaf litter in these areas can provide nest building sites.[35]

[30] Sasse, D.B., and P.J. Pekins. 1996. Summer roosting ecology of northern long-eared bats (*Myotis septentrionalis*) in the White Mountain National Forest. Bats and forests symposium. British Columbia Ministry of Forests Working Paper 23:91-101.
[31] Foster, R.W. and A. Kurta. 1999. Roosting ecology of the northern bat. (*Myotis septentrionalis*) and comparisons with the endangered Indiana bat (*Myotis sodalis*). Journal of Mammalogy 80:659-672.
[32] Owen et al. 2003. Homerange size and habitat use by the northern Myotis (*Myotis septentrionalis*). American Midland Naturalist 150: 352-359.
[33] WNSRT. 2021. 2006-2021 Spread Map. Available at: https://www.whitenosesyndrome.org/. Accessed October 2022.
[34] University of Minnesota Bee Lab. 2022. Rusty-patched bumble bee identification. Available at: https://beelab.umn.edu/rusty-patched-bumble-bee. Accessed October 2022.
[35] USFWS. 2021. Rusty Patched Bumble Bee (Bombus affinis) Endangered Species Act Section 7(a)(2) Voluntary Implementation Guidance. Version 3.1.

Spring foraging habitat and summer and fall foraging habitats are similar and can be found in areas with nectar and pollen sources, including plants such as goldenrods (*Solidago* spp.), coneflowers (*Echinacea* spp.), and gentians (*Gentiana* spp.). These areas can include woodland edges, upland forest, upland grassland and shrubland, palustrine wetlands, flower gardens, and agricultural land[36] Spring ephemeral species and upland forest and woodland interiors that contain nectar and pollen sources are also used for spring foraging.

The Project Area consists of developed land, wetlands, and forested/wooded wetlands. The Project Area falls within a high potential zone (HPZ) for the RPBB. Limited suitable overwintering and nesting habitat for the RPBB is present within the Project Area (woodland edges and upland forest) The MN-WI determination key was evaluated for the RPBB which indicated a ***may affect*** determination. Although it is generally recommended to avoid ground disturbance during the RPBB overwintering season (October 11 to April 10), this avoidance measure conflicts with avoidance measures for the northern long-eared bat. Given the occurrence of NLEB within a mile of the Project Area, it is recommended to conduct tree removal during the inactive season for the NLEB (November 15 to March 31). Correspondence with USFWS confirmed that no further consultation under Section 7 of Endangered Species Act (ESA) is required.

Monarch Butterfly

The monarch butterfly is a migratory butterfly that exists in two main populations within the United States divided by the Rocky Mountains: the eastern population that overwinters in the mountains of Mexico, and the western population that overwinters along the southern pacific coast of California (United States Department of Agriculture [USDA] Forest Service undated)[37]. This species generally occurs in areas with high densities of nectar sources, preferably native prairies with nectar species such as black-eyed Susan (*Rudbeckia hirta*), narrow-leaved coneflower (*Echinacea angustifolia*), and rough blazing star (*Lastris aspera*) that are utilized for feeding by adults (MDNR 2022b)[38]. However, the presence of Milkweed (*Asclepias* spp.) is required for breeding habitat as it is the only plant on which the larvae can feed (National Wildlife Federation undated)[39]. The monarch butterfly is a candidate for federal listing due to habitat loss, relating mainly to the loss of milkweeds and native prairies.

The Project Area consists primarily of developed land, wetlands, and mixed forest. No large populations of milkweed or native prairie were observed during field surveys that would support the monarch butterfly. Therefore, the Project would have ***no effect*** on this species.

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

Rare plant species occurring near or adjacent to the Project occupy unique ecological niches or with

USFWS, Bloomington, MN. 31 p.

[36] USFWS. 2017. Plants Favored By Rusty Patched Bumble Bee. Available at: https://www.fws.gov/media/plants-favored-rusty-patched-bumble-bee. Accessed October 2022.

[37] United States Department of Agriculture [USDA] Forest Service undated. Migration and Overwintering. Available at: https://www.fs.fed.us/wildflowers/pollinators/Monarch_Butterfly/migration/. Accessed November 2021.

[38] MDNR. 2022b. Butterfly Gardens. Available at: https://www.dnr.state.mn.us/gardens/butterfly/index.html. Accessed March 2022.

[39] National Wildlife Federation. undated. Monarch Butterfly. Available at: https://www.nwf.org/Educational-Resources/Wildlife-Guide/Invertebrates/Monarch-Butterfly. Accessed December 2021.

specific habitat requirements. Soils are thick buoyant peat likely derived from herbaceous species like grasses and forbs. Calcareous rich groundwater discharge is another element required by many of the species documented in the Nicols Fen located west of the Project. No calcareous discharge, pools, marl, or sedge dominated plant communities were identified during botanical surveys conducted during the spring, summer and fall of 2023. Several occurrences of rare plants were documented within or near the Project. Sterile sedge and stream parsnip were found at isolated locations during the botanical surveys of 2023.

Sterile sedge occurs where peat is exposed by continual use by deer or other animals that create paths and limit competition by non-native species. Affects to sterile sedge are unlikely to be affected directly by the project. Hydrologic influences would be short-term and isolated to where construction intersects lateral conveyance of groundwater as it flows north towards the Minnesota River. Sterile sedge occurs west of the current Project disturbance area. The plants are currently competing for space within the existing undeveloped land with non-native grasses, forbs, and shrubs. Successional changes to the plant communities are diminishing space where this species could persist. These successional influences are greater than current engineering or construction impacts.

Affects to stream parsnip are more difficult to assess. If grading intersects populations located in the existing road ditch, one population would be directly affected by construction. However, if installation of conveyance pipe avoids direct impacts to the plants or influences groundwater flow, impacts could alter habitat conditions where water may be conveyed along the newly installed pipe or where ground water flow might be curtailed by placement of material for a roadbed or fill. Removal of this groundwater flow would diminish the presence of stream parsnip where groundwater flow is diminished, removed, or redirected.

Climatological effects are just as difficult to assess. Regional and local conditions affected by an increase or decrease in rainfall would likely have the largest influence on groundwater flow to this area. An increase in groundwater flow may provide additional discharge points or increased flow at existing discharge points affecting the plant communities surrounding those sites. Conversely, diminishing groundwater flow may simulate or lengthen droughty conditions which would limit areas where calciphiles or groundwater discharge associates occur. A reduction of available habitat would reduce the likelihood that calciphiles might persist. Climatological conditions aside, no increase in likelihood of droughty or pluvial conditions would accompany the Project as currently planned.

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

The Project design was modified based on the rare plant survey findings. The proposed disturbance limits have been shifted to avoid direct impacts to known rare plant locations. Instead of constructing the new 7030 forcemain within the existing 7030 alignment through wetland habitat, the plan was revised to construct 7030 under Nicols Road. MCES would also consult with the Minnesota DNR to identify measures that can be implemented during construction and finalize design of the replacement 7030 forcemain to avoid or diminish impacts to rare species.

15. Historic Properties

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

will be taken to avoid, minimize, or mitigate adverse effects to historic properties.

Historic properties are defined as any precontact or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places (NRHP). To identify potential historic properties within the Project Area, a literature review of previously documented cultural resources within a one-mile area (Study Area) and a Phase I archaeological reconnaissance survey was conducted. No historic properties were identified during the investigation, therefore there would be no impact to cultural resources for the Project as planned.

The following sections present the results of the literature review and Phase I archaeological survey for the Project Area and management measures for inadvertent discoveries in the Project Area. Management discussions within each section outline a suggested process where MCES may conduct additional resource identification efforts and, should a resource be identified, work with State agencies and the SHPO to resolve questions of importance. MCES would work with State agencies and the SHPO to resolve questions of significance and mitigation if necessary.

Desktop Review

In January 2023, a review of the online Office of the State Archaeologist (OSA) database was conducted and an in-person records search at the Minnesota SHPO office in St. Paul was performed. The literature search focused on previously conducted archaeological surveys and previously identified archaeological sites and architectural resources within the Study Area, defined as a one-mile buffer from the Project Area centerline. In addition, a review of the archival resources, including General Land Office (GLO) maps and historical aerial imagery, was completed to identify potential cultural features in the APE.

Previously Conducted Archaeological Surveys

No previous conducted archaeological surveys are within the Project Area. Nine previously conducted archaeological surveys are recorded within the Study Area.

Previously Identified Archaeological Sites

No previously recorded archaeological sites were identified within the Project Area. Six previously recorded archaeological sites are within the Study Area. There are no NRHP eligible archaeological sites within the Project or Study Area. One previously recorded burial site is located within approximately 300 feet of the Project Area.

Previously Identified Cemeteries

No cemeteries are present within the Project Area. Two known burial sites are located within one mile of the Project Area. Both burial sites date to the Historic Euro-American period and are protected under the Minnesota Private Cemeteries Act (MS 307.08). The first site is located approximately 0.34 miles from the Project Area and the second site is located approximately 0.80 miles away from the Project Area. Consultation with tribes was initiated early in the Project design process and will continue through construction.

Previously Identified Architectural Resources

One historic architectural resource (Fort Snelling State Park [HE-FSR-0107]) is located within a small portion of the Project Area, and two additional historic architecture resources are located within the Study Area. There are no NRHP eligible architectural resources within the Project or Study Area.

Archaeological Survey

In September 2023, a Phase I archaeological reconnaissance survey was conducted in order to identify potential historic properties within the Project Area. No new cultural resources were identified as a result of the survey.

Impacts and Mitigative Measures

No historic properties have been identified within the Project Area. Six archaeologically significant sites were documented within the one-mile buffer by the Minnesota Office of State Archaeologist Online Portal.

MCES understands that archaeological sites or material may still exist within the Project Area. MCES consulted with the eleven federally recognized tribes of Minnesota in May 2023. Two Dakota tribes expressed interest in the area and have been involved in preparation of a Tribal Monitoring and Inadvertent Discoveries Plan (MP/IDP). The MP/IDP integrates a training, monitoring, and discovery procedures into construction bid documents should unanticipated cultural resources or human remains be encountered during construction within the Project Area. The plans outline the framework for handling such discoveries in an efficient and legally compliant manner. The plan may include the following topics: construction contractor training, construction monitoring by a professional archaeologist in specific locations along the Project Area, procedures for identification and protection of resources in the field, contact information for parties to address a discovery, and procedures for avoidance and associated tasks in the event of work stoppage in a construction area. With regard to human remains, Project-specific procedures are outlined to ensure that the appropriate authorities could be activated in accordance with State statutes (Minn. Stat. § 307).

Construction and operation of the Project is expected to have no effect on known historic architectural or archeological sites within the Project Area. If construction activities encounter previously unidentified archeological sites, MCES would consult with the SHPO and/or Office of the State Archeologist to determine if they are eligible for listing in the National Register of Historic Places. The Phase I report was submitted to the Minnesota SHPO on January 16, 2024 for review and to obtain concurrence that the Project will have no effect on historic properties.

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.

The Project Area currently consists of a MCES lift station and three siphon outlet structures, a railroad ROW, Nicols Road, wetlands, and mixed forest. No designated scenic views or vistas are present adjacent to the Project. The Minnesota River, Minnesota Valley National Wildlife Refuge, and Fort Snelling State Park lands are within 0.5 miles of the Project. The landscape immediately surrounding the site consists of a calcareous fen to the west, a residential/commercial area to the south, mixed forest and floodplain wetlands to the east, and additional wetlands to the north.

The visual of the surrounding area would not be altered given that the Project is focused around replacing and maintaining current subsurface structures. There would be temporary visual changes mainly associated with construction equipment and vehicle staging within portions of the Project Area. Trees south of the Project Area would act as a visual buffer during construction. The Project is not expected to include industries that would emit vapor plumes or intense light. The Project Area is zoned by the City of Eagan as business park,

public facility, and park. A ROW is also present within the Project Area, and portions of the Project Area fall within a shoreland district boundary. (Eagan 2022a)[40]. The Project would be required to adhere to the City of Eagan's Land Use Regulations (Chapter 11) located in the City's Code of Ordinances (Eagan 2022b)[41].

17. Air

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

The Project would not produce stationary source emissions.

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

The only vehicle emissions would occur during the construction phase of The Project. Item 18 describes greenhouse gas emissions associated with construction vehicles. The Project would have no impact on existing traffic operations or volumes.

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

The Project would not produce dust or significant odors during its operation. Temporary dust and odors may be generated during construction. Potential construction odors would likely be associated with exhaust from diesel engines and potentially from exposing buried sewer components. During operation, the only potential odor source would be from the L-13 lift station ventilation system. The lift station does employ odor control systems. The L-13 lift station is an existing facility and is not being altered by the Project.

18. Greenhouse Gas (GHG) Emissions/Carbon Footprint

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

The GHG emissions for the proposed project are calculated using the Simplified Greenhouse Gas

[40] Eagan. 2022a. Zoning Information & Permit. Available at: https://www.cityofeagan.com/zoning-information. Accessed November 2022.
[41] Eagan. 2022b. Code of Ordinances. Available at: https://library.municode.com/mn/eagan/codes/code_of_ordinances?nodeId=13070. Accessed November 2022.

Emissions Calculator (SGEC) tool and are based on the methodologies for developing a carbon footprint described in Minnesota Environmental Quality Board's (EQB's) Revised EAW Guidance (July 2023). Table 12 shows the emission categories for project carbon footprint calculations, as provided in the EQB Guidance.

Table 12. Emission Categories for Carbon Footprint

Category	Scope	Project Phase	Type of Emissions
Direct Emissions	Scope 1	Operations	Combustion (Stationary, Area, Mobile Sources)
	Scope 1	Operations	Non-Combustion Processes
	Scope 1	Construction	Combustion (Mobile Sources)
	Scope 1	Construction	Land-Use
Indirect Emissions	Scope 2	Operations	Off-site Electricity/Steam Production (Market-Based and Location-Based)
	Scope 3	Operations	Off-site Waste Management
Atmospheric Removal of GHGs	Scope 1 (Sinks)	Construction/ Operations	Land-Use (CO_2 removals to terrestrial storage)

For the Project, the GHG emission sources include only construction emissions from mobile on-road and offroad sources. There would be no operational emissions associated with this Project. There are no land use changes associated with this Project.

The planned construction schedule was provided in Item 6. GHG emissions from construction are associated with fuel combustion in the mobile construction equipment and on-road vehicles. For on-road vehicles (commuting construction workers and truck deliveries), emissions are calculated by estimating the number of vehicles, miles traveled, gallons of fuel used (using default mileage rates), and emission factors from the U.S. EPA's Emission Factors Hub (https://www.epa.gov/climateleadership/ghg-emission-factors-hub, updated April 2022).

It is estimated that workers (8 total vehicles) would commute to the site for 100 miles total per vehicle per day. Delivery trucks are assumed to travel 100 miles round trip per day.

For off-road vehicles, there would be one large loader, one large backhoe, and one standard sized dump truck. Emissions were calculated assuming an 8-hour work day and up to 210 days per year of operation. Similar to the on-road vehicles, emission factors from the Emission Factors Hub are used to calculate GHG emissions.

A summary of GHG emissions is provided in Table 13.

Table 13. Total Project GHG Emissions

Category	Scope	Project Phase	Type of Emissions	Total Project GHG Emissions (short tons CO_2e)
Direct Emissions	Scope 1	Construction	Onroad Mobile Sources	131.1
	Scope 1	Construction	Off-Road Mobile Sources	217.2
Total				**348.3**

Per EQB Guidance, "to include construction emissions in the footprint, emissions should be annualized by dividing total construction GHG releases to the atmosphere by project life". Over the Project lifetime (estimated at fifty (50) years per EQB Guidance), the annualized emissions are approximately 7.0 tons of CO_2e per year.

b. GHG Assessment

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

Mitigation of GHG emissions from construction may be achieved through limiting idling time of the construction equipment and/or encouraging carpooling by commuting workers.

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

Implementation of the mitigation measures for construction equipment mentioned above would help minimize GHG emissions from the Project but were not explicitly quantified in this analysis.

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

The GHG emissions from this Project would be limited to the construction phase, as presented in Table 13. These emissions are small compared to state-wide GHG emissions and would take place over a short time period. Thus, the emissions from this Project would not affect achievement of the Minnesota Next Generation Energy Act goals.

19. Noise

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

1) Existing noise levels/sources in the area

Current sources of noise within and in the vicinity of the Project Area consist of minimal traffic on Nicols Road, traffic from Highway 13 and 77, and activity associated with the railroad ROW. The existing lift station also produces some noise associated with the operation of pumps, emergency generators, odor control, and HVAC system.

2) Nearby sensitive receptors

The Project is located approximately 0.10 miles north of a residential neighborhood. The residential homes within the surrounding area make up the sensitive receptors in the vicinity of the Project. According to the MPCA Minnesota Noise rules, Minn. R. ch. 7030 (Minnesota Administrative Rules

2017)[42], these residential receptors are included in Noise Area Classification Zone 1 and the Project is subject to the applicable state noise standards during construction and operation.

3) Conformance to State noise standards

Minnesota's noise pollution rules (MPCA 2015)[43] are based on statistical calculations that quantify noise levels over a one-hour monitoring period. The L_{10} calculation is the noise level that is exceeded for 10 percent, or 6 minutes, of the hour, and the L_{50} calculation is the noise level exceeded for 50 percent, or 30 minutes, of the hour. There is no limit on maximum noise.

The statutory limits for a residential location are L_{10} = 65 dBA and L_{50} = 60 dBA during the daytime (7:00 a.m. – 10:00 p.m.) and L_{10} = 55 dBA and L_{50} = 50 dBA during the nighttime (10:00 p.m. – 7:00 a.m.). This means that during the one-hour period of monitoring, daytime noise levels cannot exceed 65 dBA for more than 10 percent of the time or 60 dBA more than 50 percent of the time. These limits are detailed in Table 12.

Table 8. Noise Area Classifications

NAC	Common land use associated with the Noise Area Classification	Daytime (dBA) L_{10}	Daytime (dBA) L_{50}	Nighttime (dBA) L_{10}	Nighttime (dBA) L_{50}
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) Quality of life

During construction, the primary source of noise would be from construction vehicles entering and leaving and during operation of heavy construction equipment. Construction equipment would have factory-installed mufflers or their equivalent, in good working order during the life of the construction contracts. Noise impacts from construction equipment would be controlled by restricting the hours of operation to daylight hours, or those permitted by local ordinances. The construction noise impacts would be temporary and would generally be confined to the immediate vicinity of the Project Area.

Given that this is a maintenance and improvement Project on existing infrastructure, noise levels during the operation of the Project are not anticipated to be greatly altered from current conditions. Tree clearing in the southern portion of the Project Area may raise noise levels as this would decrease the natural noise and visual buffer between the residential neighborhood and the Project. Remaining vegetative buffer,

[42] Minnesota Administrative Rules. 2017. Noise Area Classification. Available at: https://www.revisor.mn.gov/rules/7030.0050/. Accessed November 2022.
[43] MPCA. 2015. A Guide to Noise Control in Minnesota. Available at: https://www.pca.state.mn.us/sites/default/files/p-gen6-01.pdf. Accessed November 2022.

along with the continued use of mufflers on generators, would keep noise levels in compliance with state noise standards.

By state law, the Project must comply with state noise standards. There is no expected reduction to quality of life based on Project-generated noise.

20. Transportation

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

The Project would not increase or alter existing trip generation. Traffic patterns will be altered due to lane or road closures; these are addressed in Part b below. No formal parking areas are present near the Project Area. Facility-related traffic would be limited to occasional visits by maintenance vehicles.

It is estimated that up to eight employee vehicle visits per day would occur during peak construction periods. Construction would occur during daylight hours, up to six days a week. Employee vehicles would park within closed traffic lanes, road ROW, or other designated off-road areas. Delivery vehicles would visit the site on a daily basis during construction, but the likely number of visits is not known at this time.

Minnesota Valley Transit Authority (MVTA) provides bus transit service connections from the southern Twin Cities Metropolitan Area to the Cities of Minneapolis and St. Paul.[44] Two MVTA routes (Route numbers 442, 472, 495) extend along Highway 77 and Highway 13 west and south of the Project Area, respectively. Route No 442 provides service from Burnsville Center to the Mall of America. Route No. 472 provides service from the City of Rosemount to downtown Minneapolis. Route 495 provides service from the City of Shakopee to the Mall of America. Construction of the Project would not impact traffic operations on Highway 77 and Highway 13. Therefore, no impacts to transit would occur as a result of the Project.

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

During construction, lane closures, full road closures, and traffic detours would be needed. For installation of the temporary conveyance pipes from March to May 2024, the northbound lane of Nicols Road would be closed. Traffic control plans have been prepared and would be reviewed and approved by City of Eagan prior to construction.

Full road closure and traffic detouring would be required for the installation of the new MH 1 and South Junction Structure replacement between December 2024 and April 2025 and construction of the new 7030 forcemain between December 2025 and April 2026. The closure of Nicols Road would extend from Silver Bell Road to Black Dog Road. Duration of the road closures is not known at this time and the traffic control plan has not been finalized.

[44] MVTA. Routes. Accessed November 30, 2023. https://www.mvta.com/routes/

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

Prior to construction, traffic control plans would be developed by the Proposer and subject to review by City of Eagan and other relevant entities.

Closure of Nicols road may inhibit access to a Minnesota River boat launch and the Cedar Nicols Trailhead, which provides access to the Minnesota Greenway trail. The boat launch would likely be closed during portions of the construction periods due to winter conditions. The Minnesota River Greenway Trail and Cedar Nicols Trailhead remain open all year. If it is not possible to maintain access to the Cedar Nicols Trailhead during throughout construction, alternate trailheads would need to be used for access to the trail system. The nearest alternate trailhead is Minnesota Riverfront Park in Burnsville, approximately 3.7 miles southwest of the Cedar Nicols Trailhead. Closure of Nicols Road would be minimized to the extent possible and occur during the winter season. Preparation of the traffic control plan and detour routing would require advance coordination with Xcel Energy, Dakota County, City of Eagan, City of Burnsville, and MDNR.

Access to residences located near the intersection of Nicols Road and Silver Bell Road would be maintained throughout construction.

21. Cumulative Potential Effects

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

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

The Project Area encompasses a relatively small area (4.5 acres), and approximately 1.5 acres have been previously disturbed by road and utility construction activities. The Project disturbance area is approximately 1.4 acres and is occurring within previously disturbed areas. The Project would result in a net environmental benefit over current conditions, as the Project seeks to replace degrading sanitary services that are currently at risk. The Project would be completed over three winter construction seasons plus final restoration.

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

A CFMP is being prepared by MCES for Nicols Fen in relation to operations of the nearby Seneca WWTF. The Metropolitan Council is required to monitor the water levels in Nicols Fen and Kennaley's Creek as a requirement of DNR permit 91-6073 for dewatering at the Seneca WWTP, as outlined in the Nicols Fen Monitoring Plan.

The Minnesota River Greenway Trail extends west from the Interstate 35W bridge in the City of Burnsville to Cedar Nicols Trailhead near Highway 77. Dakota County plans to extend the Minnesota River Greenway from the Cedar Nicols Trailhead through Fort Snelling State Park to Interstate 494.

Based on a review of the City of Eagan's current development projects mapping tool[45], development

[45] City of Eagan. Current Development Projects. Accessed November 30, 2023. https://cityofeagan.com/development

project, Nicols Pointe-Dakota County CDA, is proposed approximately one-half mile south of the Project Area at the southeast corner of Nicols Road and Cedar Grove Parkway. This project proposed a 24-unit apartment building, which currently consists of a vacant lot that includes wooded areas. It is anticipated that development of this site would require tree removal and increased impervious surface. The Proposer would be required to comply with all state and local regulations and permit requirements and identify mitigation measures for potential impacts as part of the permitting process.

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

There is limited potential for significant cumulative environmental effects. The Project impacts are expected to be temporary over the construction period. The Project would result in no new permanent disturbance and would result in improved environmental protection. Environmental effects of the Project are minimal. Tree removal would occur during winter months when NLEB would not be present. Three of the dewatering activities would each occur as separate activities during winter months, when groundwater should be at lower and more stable levels. The temporary conveyance dewatering would occur in the spring but over a very short time period. The potential future projects mentioned above are generally not within the geographic scale of the Project and likely would not result in significant adverse environmental impacts taken individually or together.

22. Other Potential Environmental Effects

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

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

RGU CERTIFICATION

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

I hereby certify that:

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

Signature: Date: January 16, 2024

Title: Engineering Assistant Manager, MCES