# 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

3M Oakdale Surface Water Diversion Project

## 2. Proposer

*Contact person:* Kevin Madson, 3M
*Title:* Senior Environmental Engineer
*Address:* 3M Center, Building 225-1N-22
*City, State, ZIP:* St. Paul, Minnesota, 55144
*Phone:* 651.381.2583
*Email:* kmadson@mmm.com

## 3. Responsible Government Unit (RGU)

*Contact person:* Becky Horton, Minnesota Department of Natural Resources
*Title:* EAW Project Manager
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*Fax:* NA
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## 4. Reason for EAW Preparation

*(check one)*

| *Required:* | *Discretionary:* |
|---|---|
| ☐ *EIS Scoping* | ☐ *Citizen petition* |
| ☒ *Mandatory EAW* | ☐ *RGU discretion* |
| | ☐ *Proposer initiated* |

*If EAW or EIS is mandatory give EQB rule category subpart number(s) and name(s):* Minnesota Rules 4410.4300 Subpart 27, Public waters, public water wetlands, and wetlands.

## 5. Project Location

- *County*: Washington County
- *City/Township*: City of Oakdale
- *PLS Location (¼, ¼, Section, Township, Range)*: Sections 17 and 18, Township 29 North, Range 21 West.
- *Watershed (81 major watershed scale)*: Lower St. Croix River #37
- *GPS Coordinates:*
    1. Latitude (NAD83): 44.996782
    2. Longitude (NAD83): -92.967921

*Tax Parcel Number:* See Table 1.

**Table 1 Parcels within the Project Area**

| Parcel ID | Parcel ID | Parcel ID |
|---|---|---|
| 1702921310009 | 1802921410012 | 1802921420001 |
| 1702921320003 | 1802921410037 | 1802921420002 |
| 1702921320004 | 1802921410039 | 1802921430001 |
| 1702921320005 | 1802921410040 | 1802921430002 |
| 1702921330012 | 1802921410041 | 1802921430003 |
| 1802921130003 | 1802921410042 | 1802921430005 |
| 1802921130083 | 1802921410043 | 1802921440001 |
| 1802921410002 | 1802921410044 | 1802921440003 |

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

- *County map showing the general location of the project*; see Figure 1.

- *U.S. Geological Survey 7.5 minute, 1:24,000 scale map indicating project boundaries (photocopy acceptable)*; see Figure 2.
- *Site plans showing all significant project and natural features. Pre-construction site plan and post-construction site plan*; see Appendix A and Appendix F, Figures 3, 8, and 10.
- *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)*;


1. Minnesota Department of Natural Resources. Minnesota Climate Explorer. [Online] [Cited: July 31, 2024.] https://arcgis.dnr.state.mn.us/climateexplorer/main/historical.

2. Fuchs, Brian. Palmer Drought Severity Index (PSDI and scPDSI). May 2012. Presentation at Caribbean Drought Workshop May 22-24, 2012.

3. Intergovernmental Panel on Climate Change. Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of Intergovernmental Panel on Climate Change. [ed.] Rajendra K. Pachauri, Leo Meyer and Core Writing Team. s.l., Geneva, Switzerland : IPCC, 2014. p. 151.

4. Minnesota Department of Natural Resources. Climate Explorer Metadata. [Online] [Cited: November 14, 2023.] https://www.dnr.state.mn.us/climate/climate-explorer-metadata.html.

5. U.S. Environmental Protection Agency. Climate Resilience Evaluation and Awareness Tool (CREAT) Risk Assessment Application for Water Utilities. [Online] [Cited: January 3, 2023.] https://www.epa.gov/crwu/climate-resilience-evaluation-and-awareness-tool-creat-risk-assessment-application-water.

6. First Street Technology, Inc. Does Washington County have Flood Risk? [Online] [Cited: November 14, 2023.] https://firststreet.org/county/washington-county-mn/27163_fsid/flood?from=riskfactor.com.


## 6. Project Description

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

3M Chemical Operations, LLC is proposing a project to collect surface water upstream of the Abresch Disposal Site to reduce polyfluoroalkyl substances in stormwater discharge from the site. The Abresch Disposal Site is the largest of three former disposal sites that comprise the Oakdale Disposal Site, a state and federal superfund site. 3M is working with the Minnesota Pollution Control Agency to remediate soil and groundwater at the site. The project is proposed to further reduce PFAS impacts to stormwater discharge from the site.

The proposed project would collect surface water upstream of the site and divert it in a 0.74-mile-long surface water conveyance pipe to a three-acre flood retention basin, where water would then be re-introduced into the natural flow of the watershed. The conveyance pipe would bypass the Abresch Disposal Site, thus bypassing PFAS detected within the site. This would reduce the discharge of PFAS in surface water and improve downstream surface water quality in the Twin Cities east metropolitan area.

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*

**Project Background**

The Site is located approximately 11 miles east of downtown St. Paul, in the City of Oakdale, Minnesota. The Site is approximately 55 acres in size and consists of undeveloped open space, wetlands, County Road 14 right-of-way (ROW), and a groundwater treatment building and associated facilities. The inferred limits of the Site are depicted on Figure 3. The Site was used as a waste burial and drum reclamation site from the mid-1940s until 1961. Scrap materials, plastics, resins, and solvents were disposed in drums and other smaller containers in trenches in upland and wetland areas. The remedial history of the Site spans over 40 years and consists of numerous investigations, agreements, and remedial actions. A brief history is provided in this document.

In 1980, 3M began environmental investigation at the Site and in 1983 signed an Administrative Order by Consent and Response Order by Consent (Consent Order) and began voluntary remedial actions that, at the time, primarily targeted volatile organic compounds (VOCs) in groundwater. Remedial actions included excavation of concentrated wastes at the Site, abandonment of water supply wells in the neighborhood, installation of monitoring wells, and implementation of a groundwater pump-out system in 1985 to remove and contain impacted shallow groundwater beneath the Site and prevent movement laterally and vertically into deeper aquifers. The completed response actions were determined by U.S. Environmental Protection Agency (EPA) to have controlled the VOC risks at the Site.

In 2004, 3M began initial investigations regarding PFAS at the Site. In 2007, 3M entered into a Settlement Agreement and Consent Order with the MPCA for remedial investigations and response actions to address the presence of PFAS. In accordance with the 2007 Agreement, 3M prepared a Feasibility Study to evaluate response action alternatives to address PFAS in groundwater and soil at the Site. In 2008, the MPCA issued the Minnesota Decision Document for the Oakdale Disposal Site and 3M began the implementation of the remedies that were selected by the MPCA.

In 2010, 3M submitted a plan for site-wide groundwater and surface water sampling that continues today with annual reporting to MPCA. In 2020, the MPCA requested additional information to determine

whether the previously selected remedies were effective. Specifically, the MPCA required 3M to "address the continued migration of PFAS from the Site via the surface water pathway".

In response to the MPCA requests, 3M proposed a work plan to help refine the conceptual site model and to allow for further assessments of potential remedial efforts; the work plan was approved by the MPCA in July 2020. As those assessments began, 3M also submitted an addendum to the 2020 work plan in March 2022 to specifically address the concern about PFAS migration in surface water. This work plan addendum is when the Project was initially proposed to MPCA.

**Project Overview**

The purpose of this Project is to collect surface water upstream of the Site at a surface water control structure and convey it into a diversion pipe so the water can be diverted around the Site where PFAS is present in both soil, groundwater, and sediment. Figure 4 depicts the subwatersheds in the Project Area and specifically identifies the north subwatershed (185 acres) that the surface water control structure would capture and divert.

The 0.74-mile-long surface water conveyance pipe would transport water to the east and discharge the water downstream of the Site to a proposed flood retention basin. The flood retention basin would be constructed adjacent to an existing wetland that is hydrologically connected to the ditch which currently transports surface water from the Site. Downstream of Interstate 694, the ditch becomes Raleigh Creek, which is one of the creeks that is part of the Project 1007 flood control project. Originally constructed in 1987 by the Valley Branch Watershed District to control flooding, Project 1007 is a system of stormwater pipes, open channels, catch basins, and two dams that direct the flow of water from Jane, Olson, and DeMontreville Lakes to the St. Croix River.

By implementing this Project, 3M would collect stormwater, bypass the PFAS detected at the Site, and return non-PFAS impacted surface water to the watershed. This would in turn improve water quality for downstream stakeholders and communities including the Project 1007 system which spans the East Metro to the St. Croix River. The benefits of the Project would complement existing and ongoing investigation and remediation efforts that the MPCA and the DNR are leading in this area under the 2018 Settlement Agreement and Order.

*Surface Water Control Structure*

Currently, water flows from Wetland L (PWI 82-394W) through an existing culvert under Granada Avenue North before entering the Site as shown on Figure 3. A surface water control structure is proposed east of Granada Avenue North in the road ROW to capture the water from the culvert and convey it into a surface water conveyance pipe. The structure would consist of a precast concrete manhole. The surface water control structure would divert flows into the surface water conveyance pipe that includes up to the 100-year 24-hour storm event. Surface water flows that exceed the 100-year 24-hour storm event would not be diverted and would continue into the Site.

The surface water control structure would be located within the existing 30" reinforced concrete pipe (RCP) culvert. Construction would occur in an open excavation eastward of the existing sidewalk. There would be no modifications to the existing flared-end sections on either end of the existing 30" RCP. The excavated area under the surface water control structure would be regraded to match existing grades in the 30" RCP. The final grading of the ground surface would be re-graded to its pre-existing contours and seeded with a native seed mix. No fill would be required as part of the construction of the surface water control structure.

*Surface Water Conveyance Pipe*

The proposed surface water conveyance pipe is approximately 0.74 miles long and would be made of reinforced concrete pipe. The conveyance pipe would consist of either a 48-inch diameter pipe or an alternative such as dual pipes or arch pipe with the same capacity to accomplish soil cover or utility conflicts. The surface water conveyance pipe would begin at the surface water control structure, travel south to the intersection of Granada Avenue North and County Road 14, turn east and cross under the ditch just south of Wetland H (PWI #82-401W), and continue on the north side of County Road 14 to Hadley Avenue North. At Hadley Avenue North, the pipe would travel north and cross Hadley Avenue, the pipe would continue south where it would cross County Road 14 on the east side of Hadley Avenue North, and discharge water to the proposed flood retention basin as shown on Figure 3. Water would move through the surface water conveyance pipe using gravity flow from the surface water control structure to the proposed flood retention basin. The Project would not require the construction of a lift station or pump house.

The surface water conveyance pipe would be installed using an open trench method with revegetated soil cover over the pipe. A trench box would be used to reduce the size of the excavation. The contractor would begin construction by removing vegetation within the construction limits and strip topsoil to a minimum depth of 12 inches. Excavating in uplands typically occurs using a backhoe excavator or a rotary wheel ditching machine. Soil that is excavated from the limits of the Site would be transported to an approved offsite landfill. The soil excavated for the surface water conveyance pipe outside of the limits of the Site would be used to back fill the surface water conveyance pipe trench, and any excess soil would be transported offsite for disposal.

*Flood Retention Basin*

Prior to submitting this EAW, 3M acquired the vacant land where the flood retention basin is proposed for construction. This land includes Wetland U, an existing wetland area, which would be expanded by 1.53 acres to construct the proposed flood retention basin (Figure 3). The flood retention basin would have a maximum depth of three feet and would accommodate peak flows for events up to 100-year 24-hour storm. The surface water conveyance pipe would outlet in the northwest corner of the flood retention basin. The surface water conveyance outlet would be constructed in an upland location and consist of a flared-end section and riprap energy dispersion apron. Surface water would discharge from the flood retention basin through an RCP manhole outlet structure located south of the flood retention basin. The

outlet structure would include a 48-inch RCP gravity storm sewer pipe with an RCP flared-end section and a riprap energy dispersion apron.

Construction of the flood retention basin would include excavation of the upland area around Wetland U and grading along the edge of the existing wetland (Figure 3). The excavated soil from the construction of the flood retention basin that cannot be used on-site for grading would be transported off-site for disposal. After construction is complete, the flood retention basin would be inspected annually for debris and sediment accumulation. Significant sediment accumulation is not anticipated, but sediment cleanout could be necessary every 10-20 years.

*Fence*

3M is also proposing to construct a fence extension along a portion of the property boundary of the Site (Figure 3). The purpose of the fence is to maintain land use controls (LUCs) which limit public access to the Site for protection of human health and the environment. The expectation to reduce exposure to onsite contaminated soil and groundwater media is established via the Site's enrollment in the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) cleanup program in addition to a Consent Order between the EPA, MPCA, and 3M.

Approximately 0.74 mile of fence would be constructed across a wetland as depicted in Figure 3. The fence would consist of a galvanized chain link fence approximately 6 feet tall with 2-inch galvanized steel posts. The posts would be driven 72 inches below the ground surface and spaced a maximum of 10 feet apart. There would be a 10-foot-wide gap at the ditch crossing to allow the ditch to flow unimpeded.

During construction, the fence work area would be accessed via an existing access road through the property to minimize disturbances to wetland areas. The fence would be installed during frozen ground conditions to minimize disturbance. Additionally, all equipment would be staged outside of wetland areas. Before installing the fence, the vegetation within a 10-foot buffer of the fence centerline would be mechanically removed using a mower or chainsaw. After the vegetation has been cleared, the contractor would install the fence posts using a skid loader with a mounted post driver. Approximately 92 posts would be installed within the wetland boundary. No generation of excess soil is anticipated, and no fill would be placed within the wetland as part of fence installation activities. After the posts have been set, the chain link would be attached to the posts. Construction of the fence through the wetland area is anticipated to last 1 week.

**Schedule**

It is anticipated that construction would begin in 2026. Construction of the surface water control structure, surface water conveyance pipe, and flood retention basin is estimated to be completed by the end of 2026. The fence would be constructed in February 2026 during frozen ground conditions.

c. Project magnitude:

**Table 2 Project Magnitude**

| Description | Number |
|---|---|
| Total Project Area Acreage | 98.79 acres |
| Flood Retention Basin Acreage | 3 acres |
| Fence Length | 0.15 miles |
| Diversion Pipe Length | 0.74 miles |

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

The purpose of the Project is to improve surface water quality downstream and east of the Site, including Raleigh Creek and Project 1007. The Project would complement existing and ongoing investigation and remediation efforts that the MPCA and the DNR are leading in this area under the 2018 Settlement Agreement and Order.

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

There are no future stages of development planned within the Project Area, and it is anticipated the Project would remain in place for the foreseeable future to allow long-term reductions of the Site discharge and the associated benefits for the East Metro.

As previously discussed, the Project would be completed to meet the objectives identified by the MPCA. The MPCA's 2008 Minnesota Decision Document included a Response Action Objective to reduce PFAS concentrations in the surface water. This Project would help meet this Response Action by diverting surface water away from the Site thereby reducing PFAS concentrations downstream.

In response to this request 3M would evaluate additional remedial measures that could be conducted at the Site however the scope and timing of any future projects is currently unknown.

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

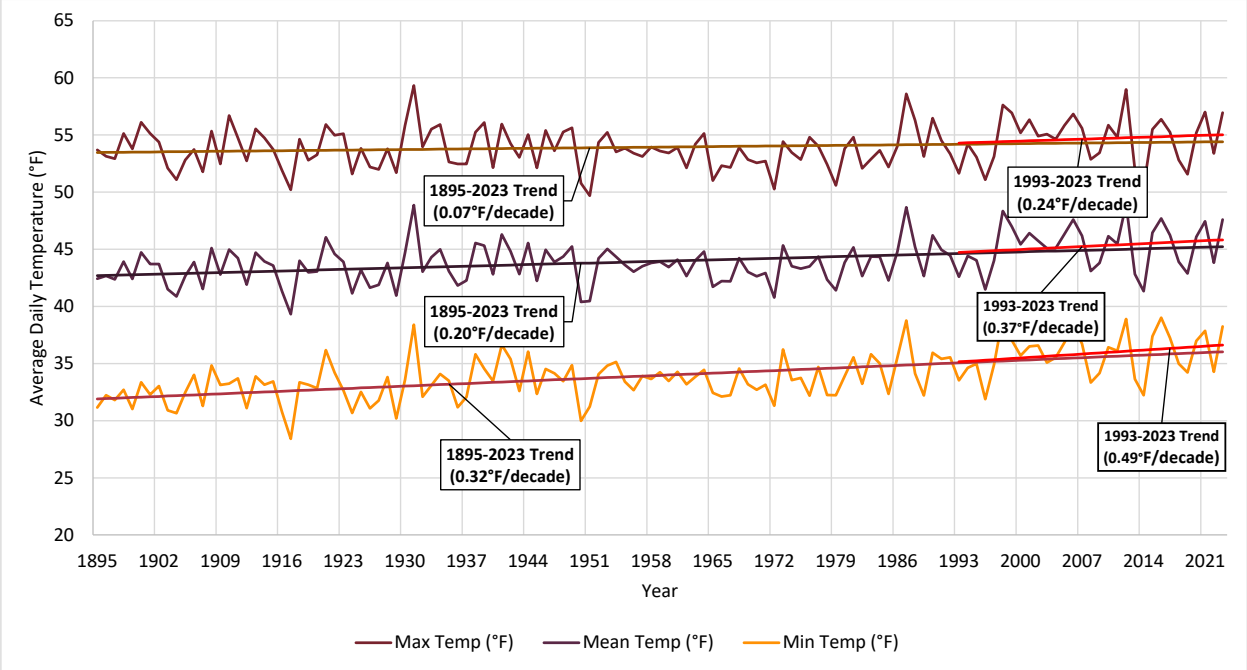
This Project is not a subsequent stage of an earlier project.

## 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.*

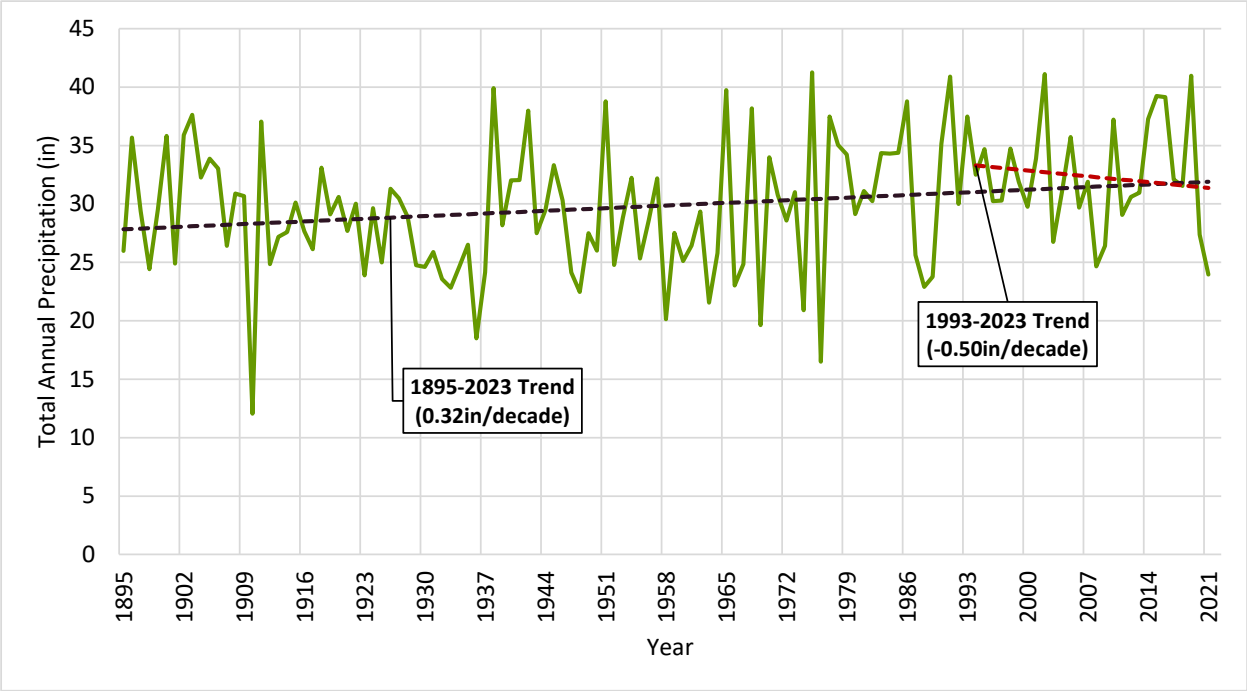
**Historical Climate**

The Minnesota Climate Explorer tool provides a summary of historical and projected climate conditions for the state of Minnesota. The historical climate data that is presented in this tool was collected from nationally available sources, the National Oceanic and Atmospheric Administration (NOAA) National Centers for Environmental Information and the Parameter-elevation Regression on Independent Slopes Model Climate Group. Historical climate data was summarized for Washington County, Minnesota. Graphic 1 summarizes the mean, maximum, and minimum average daily temperature from 1895-2023 for Washington County, Minnesota. The temperature trends are shown per decade from 1895-2023 and from 1993-2023; this represents the full record of data and the most recent 30-year climate normal period, respectively. In each temperature statistic, Washington County exhibited an increase in daily temperature from 1895-2023. The annual average minimum daily temperature has increased at the largest rate of the three temperature statistics at 0.49 degrees per decade for the period 1993-2023.



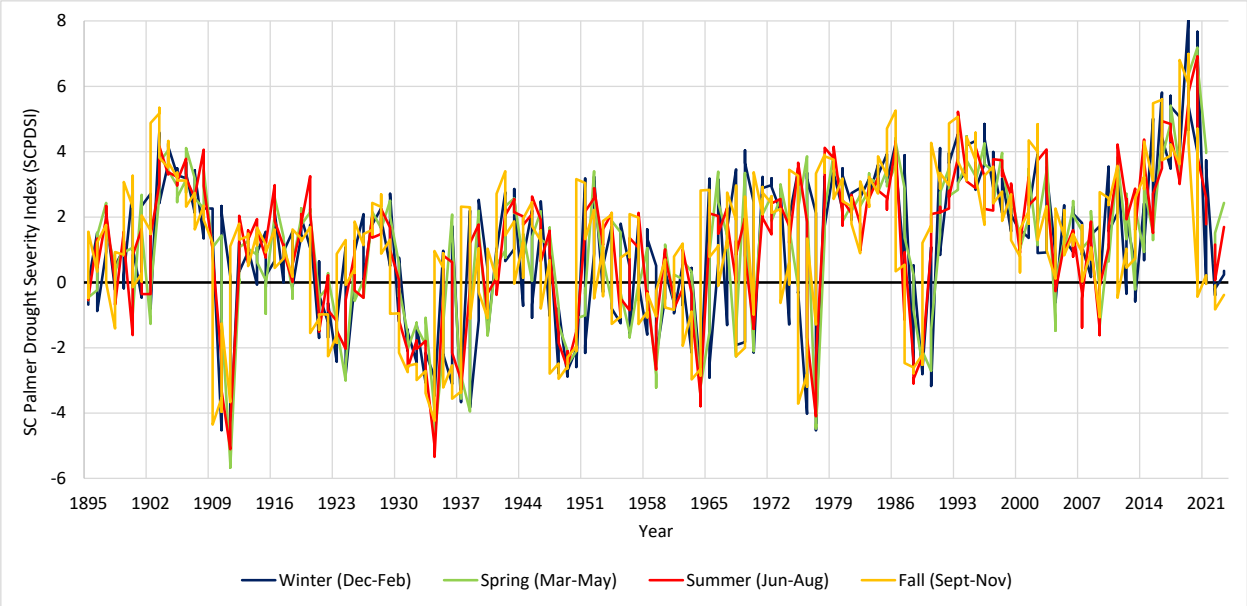

**Graphic 1 Historical Annual Mean, Maximum, and Minimum Daily Air Temperature (F) for Washington County, Minnesota from 1895 to 2023**

Graphic 2 shows the total annual precipitation for Washington County from 1895-2023. Total annual precipitation has increased from 1895-2023 by a rate of 0.32 inches/decade and decreased from 1993-2023 by a rate of 0.50 inches/decade.




**Graphic 2** **Historical Total Annual Precipitation (inches) for Washington County, Minnesota from 1895 to 2023**

Graphic 3 shows the seasonal drought severity for Washington County from 1895-2023 using the Self-Calibrated Palmer Drought Severity Index (scPDSI). The scPDSI is a meteorological drought index that measures the lack of moisture. Negative scPDSI values indicate drought conditions, positive values indicate wet conditions, and values near zero indicate normal conditions. Washington County experienced more frequent drought episodes from 1910-1964. From 1965-2023, seasonal wet conditions have been more frequent.

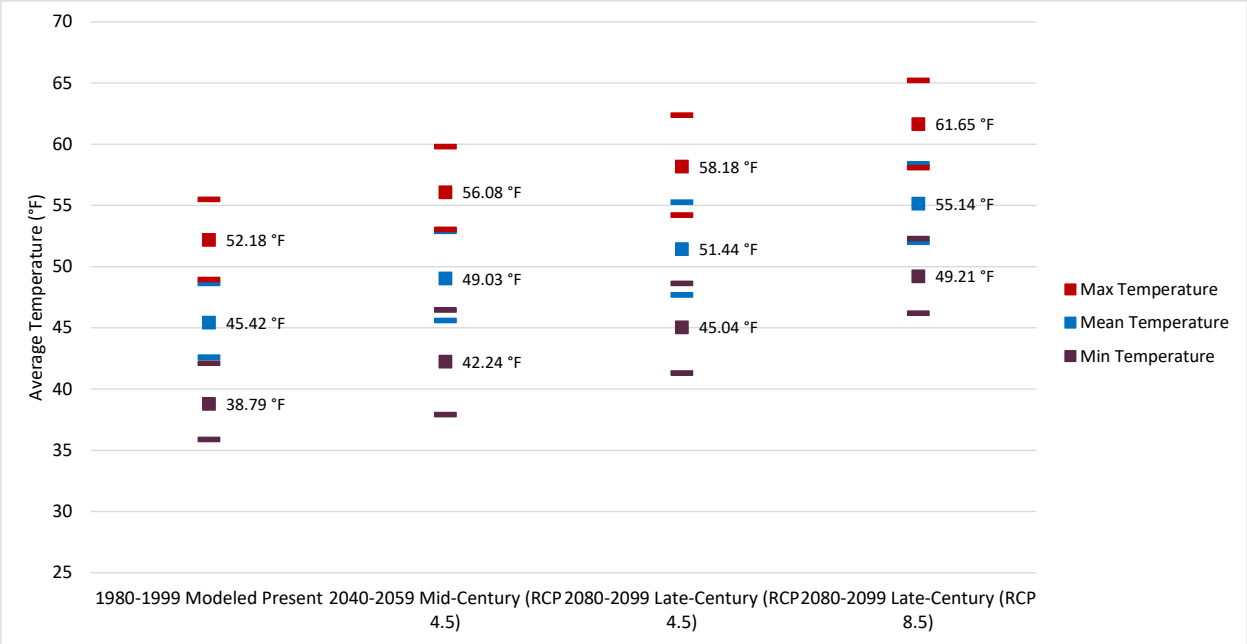



**Graphic 3 Historical Drought Severity for Washington County, Minnesota from 1895 to 2023**

**Future Projected Climate**

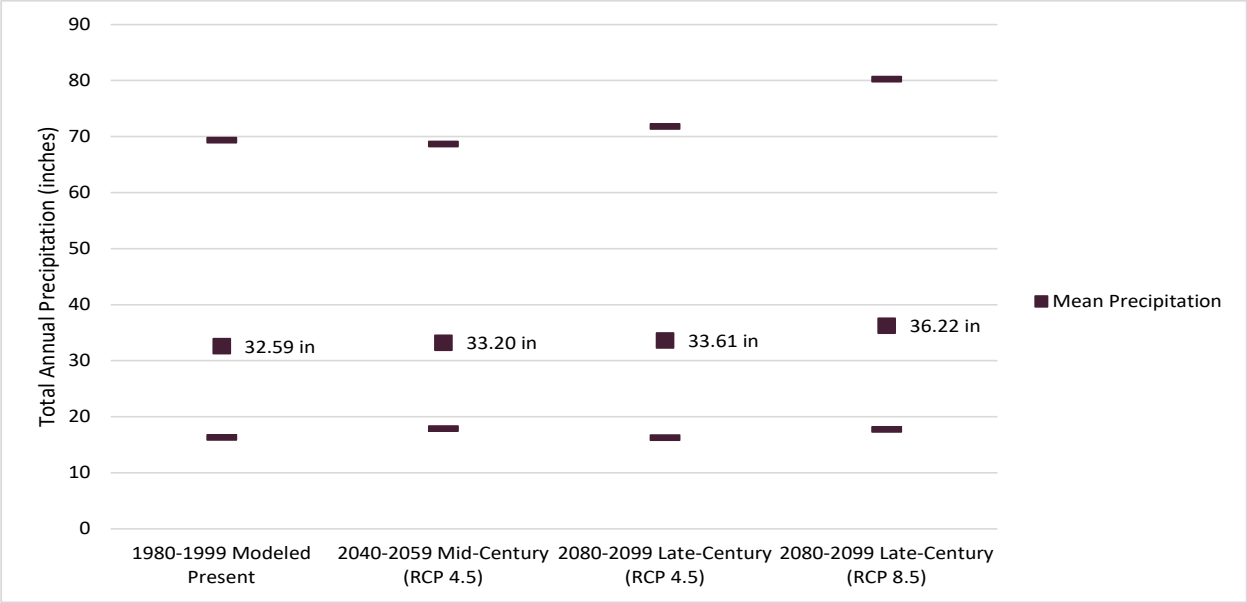
Future projections are based on the dynamically downscaled global climate model datasets developed by the University of Minnesota and are summarized in two scenarios, Representative Concentration Pathway (RCP) 4.5 and RCP 8.5. RCP is a measure adopted by the Intergovernmental Panel on Climate Change to represent various greenhouse gas concentration pathways. The numbers (i.e., 4.5 and 8.5) represent the amount of net radiative forces the earth receives in watts per meter squared, where a higher RCP signifies a more intense greenhouse gas effect resulting in a higher level of warming. RCP 4.5 represents an intermediate scenario where emissions begin to decrease around 2040 and RCP 8.5 represents a scenario with no emissions reductions through 2100.

Graphic 4 shows the modeled upper limit, average, and lower limit annual mean, maximum, and minimum modeled historical and projected air temperature for Washington County. The climate models predict the average temperature for Washington County to increase by approximately 4°F by Mid-Century (2040-2059) compared to modeled Current (1980-1999) conditions under the RCP 4.5 scenario. For Late-Century (2080-2099), air temperature is projected to increase by approximately 6°F under RCP 4.5 and approximately 10°F under the RCP 8.5 scenario. For maximum temperature, the models predict an increase by approximately 4°F by Mid-Century (2040-2059) compared to modeled Current (1980-1999) conditions under the RCP 4.5 scenario. For Late-Century (2080-2099), the models predict an increase of approximately 6°F under RCP 4.5 and approximately 9°F under the RCP 8.5. For minimum temperature, the models predict an increase by approximately 3°F by Mid-Century (2040-2059) compared to modeled Current (1980-1999) conditions under the RCP 4.5 scenario. For the Late-Century (2080-2099), the models predict an increase of approximately 6°F under RCP 4.5 and approximately 10°F under the RCP 8.5 scenario.




**Graphic 4** **Historical and Projected Annual Mean, Maximum, and Minimum Temperature for Washington County, Minnesota**

Graphic 5 shows the modeled upper limit, mean, and lower limit historical and projected total annual precipitation for Washington County. The model mean shows that from the modeled Present to Mid-Century (2040-2059) under RCP 4.5 conditions, there may be a slight increase in average precipitation of 0.61 inches. For Late-Century (2080-2099), the model mean shows an increase of 1.02 inches (RCP 4.5) and 3.63 inches (RCP 8.5).




**Graphic 5** **Historical and Projected Total Annual Mean Precipitation (inches) for Washington County, Minnesota**

**Climate Hazard Projections**

The EPA Climate Resilience Evaluation and Awareness Tool anticipates an increase in 100-year storm intensity of 2.4 (Not as Stormy future) to 13.6 (Stormy future) percent in 2035 and 4.7 (Not as Stormy future) to 26.5 (Stormy future) percent in 2060 for the Project Area. The risk assessment and map tool was used to create a city-wide risk assessment for Oakdale, Minnesota to help identify current and future climate change risks. Over the next 30 years, 8 percent of all the properties in Oakdale would have a greater than 26 percent chance of being severely affected by flooding. Oakdale has a minor risk from heat and temperatures over 99 degrees Fahrenheit would increase from 7 days to 14 days. Oakdale has a minimal wind factor, and a very low likelihood that hurricane, tornado, or severe storm winds would impact the area. There is a minor risk of wildfire over the next 30 years, with 4 percent of all properties having some risk of being affected by wildfire.

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

**Table 3 Climate Trends and Project Activities**

| Resource Category | Project Information | Adaptations |
|---|---|---|
| Land Use | Climate change risks and vulnerabilities identified include flood retention. | The Project would not increase the flood potential within the Project Area or surrounding parcel. The flood retention basin is designed to accommodate 100-year 24-hour storm event and the 100-year 10-day snowmelt event. |
| Water Resources | Addressed in Section 12. | Addressed in Section 12. |
| Contamination/ Hazardous Materials/Wastes | Climate change risks and vulnerabilities identified include water transport. | The Project would reduce contact between contaminated media and surface water within the Site. This would help reduce contaminant migration offsite during periods of high precipitation. |
| Fish, wildlife, plant communities, and sensitive ecological resources (rare features). | Addressed in Section 14. | Addressed in Section 14. |

## 8. Cover Types

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

Table 4 identifies the current land cover within the Project Area based on the 2015 land cover dataset and the anticipated land cover once construction is complete. Figure 5 depicts the existing land cover types within the Project Area. The Project would not result in an increase in impervious surface. Based on the preliminary project design, construction of the flood retention basin would convert 1.53 acres of upland to wetland.

**Table 4 Land Cover Types within the Project Area**

| Land Cover Types | Before (acres) | After (acres) |
|---|---|---|
| Wetlands/Lakes/Ponds | 31.94 | 30.93[1] |
| Stormwater Management Features | 0 | 1.53[2] |
| Buildings | 3.52 | 3.52 |
| Grass/Shrub/Tree Canopy | 42.4 | 41.88 |
| Roads/Paved Surfaces/Bare Soil | 20.93 | 20.93 |
| TOTAL | 98.79 | 98.79 |

[1] The loss in wetland area is a result of indirect wetland impacts as discussed in EAW Item 12.
[2] The total land coverage of wetlands increases due to the installation of the flood retention basin. This does not include stormwater management features for the adjacent commercial developments.

**Table 5 Green Infrastructure within the Project Area**

| 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 | 1.53[1] |
| Constructed green roofs | 0 | 0 |
| Constructed permeable pavements | 0 | 0 |
| Other (describe) | 0 | 0 |

[1] Includes construction of the flood retention basin.

**Table 6 Tree Removal within the Project Area**

| Trees | Percent | Number |
|---|---|---|
| Percent tree canopy removed or number of mature trees removed during development | n/a | Unknown[1] |
| Number of new trees planted | n/a | 0 |

[1] Minor tree clearing would occur along the surface water conveyance pipe alignment. Trees that would be removed would be counted at the time of removal.

## 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 7 Permits and Approvals**

| Unit of Government | Type of Application | Status |
|---|---|---|
| United States Army Corps of Engineers | • Section 404 | • To be obtained, if needed |
| United States Fish and Wildlife Service | • Section 7 consultation (required for Section 404 process) | • To be obtained, if needed |
| State Historic Preservation office | • Section 106 consultation (required for Section 404 process) | • To be obtained, if needed |
| Minnesota Pollution Control Agency | • Project Review<br>• NPDES/SDS Construction Stormwater Permit<br>• Section 401 Water Quality Certification | • To be obtained<br>• To be obtained<br>• To be obtained |
| Minnesota Department of Natural Resources | • Work in Public Waters<br>• Water Appropriation Permit (for construction dewatering) | • To be obtained |
| Metropolitan Council Environmental Services (MCES) | • Special Discharge Permit (for trench dewatering) | • To be obtained |
| Valley Branch Watershed District | • Valley Branch Watershed District Permit Application<br>• Wetland Conservation Act Permitting | • To be obtained<br>• To be obtained |
| Washington County | • Detour Coordination<br>• DOT Review<br>• ROW Permit | • To be obtained<br>• To be obtained<br>• To be obtained |
| City of Oakdale | • ROW Permit<br>• Grading and Filling Permit | • To be obtained<br>• To be obtained |

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

All potential cumulative impacts are discussed in EAW Item 21, Cumulative Potential Effects.

## 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 is located in the City of Oakdale in an urban setting (Figure 6). The primary landowner within the Project Area is 3M, which includes the Site and is currently used by 3M for their groundwater treatment system. Washington County is the second largest landowner in the Project Area and owns the County Road 14 ROW. The remaining Project Area is used for commercial purposes and includes the Hadley Business Center, Menards, Holiday, and Kwik Trip.

Tilsen Park II is located north of Wetland H (PWI #82-401W) and extends further east outside of the Project Area (Figure 6). The Project would not affect Tilsen Park II or interrupt use of the park. There are no cemeteries, or prime and unique farmland within the Project Area. Saint Paul's Priory Cemetery is the closest cemetery and is located one mile west of the Project Area in Maplewood. There is a recreational trail that runs parallel along the south side of County Road 14. This trail spans Granada Avenue North and Hadley Avenue North in the Project Area.

The land use north and south of the Project Area includes single family residential. The eastern boundary of the Project Area is adjacent to Menards, a Kwik Trip, and Interstate 694. The western boundary of the Project Area is bordered by additional 3M property and the ICU Medical Center, which is located south of County Road 14 and west of Granada Avenue North.

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.*

**United States Environmental Protection Agency**

The Site is part of the Oakdale Disposal Site which is a CERCLA site as designated by the EPA. The EPA conducts a five-year review to evaluate the Oakdale Disposal Site to determine if the existing mitigation measures would continue to be protective of human health and the environment. The most recent evaluation for the Oakdale Disposal Site was completed in 2024.

**Minnesota Pollution Control Agency**

The Site is under an Environmental Covenant and Easement under the Uniform Environmental Convents Act (Minn. Stat. Chap. 114E) with the MPCA. Under this covenant, the property is subject to activity and use limitations and associated terms and conditions as identified in the Environmental Covenant. Use of the property for residential, school, day care, or any other non-commercial purposes is prohibited without prior approval by the MPCA. In addition, there shall be no disturbance or alteration of soils on the Site of any nature whatsoever, specifically including, but not limited to, grading, excavation, boring, drilling or construction except with prior notification to the MPCA and under a MPCA-approved document (e.g.,

Response Action Plan (RAP) or Work Plan) or to perform periodic maintenance of the groundwater extraction system that may require disturbance of soil in a localized area.

Except as required as part of the MPCA-approved environmental response project, there shall be no extraction of ground water from beneath the Property for any purpose and no installation of any wells, borings, trenches or drains which could be used to extract such ground water. The Site is also located within an MPCA-designated Special Well and Boring Construction Area under Minnesota Rules Part 4725.3650.

**City of Oakdale**

The Project is located in the City of Oakdale in Washington County and falls under the City of Oakdale's 2040 Comprehensive Plan. Preserving and improving the environmental quality of the surface waters in the City of Oakdale is a key priority within the comprehensive plan. In the surface waters portion of the water resources chapter, Goal 1 explains that a priority of the City of Oakdale is to improve water quality, minimize erosion, and protect wetlands and groundwater resources through the Surface Waters Management Plan. The Surface Waters Management Plan identifies the following goals that would apply to the Project:

- Water Quality - maintain or improve water quality to meet established standards consistent with the intended use and classification.
- Water Quantity - control flooding and protect property while minimizing public expenditures necessary to control volumes and rates of runoff.
- Wetlands - preserve and improve wetlands acreage, functions and values and achieve no net loss of wetlands in conformance with the Minnesota Wetland Conservation Act and associated rules.
- Erosion Control - minimize soil erosion and sedimentation.
- Groundwater - protect the quality and quantity of groundwater resources and promote groundwater recharge.

The latest iteration of the Storm Water Management Plan for the City of Oakdale was approved by the City Council in 2019. The purpose of the plan is to provide a guide and framework for the City of Oakdale to manage their water resources.

**Valley Branch Watershed District**

The Project Area is within the Valley Branch Watershed and more specifically in the Raleigh Creek watershed. The VBWD has developed the VBWD 2015-2025 Watershed Management Plan to manage the waters within the VBWD; the Raleigh Creek Watershed Management Plan is included as Section 5.11. The mission of the VBWD is to "manage and protect our water resources within the limits of VBWD jurisdiction: lakes, ponds, creeks, streams, wetlands, drainages, and ground water." The VBWD supports this mission by "improving and protecting the quality of surface water and groundwater resources." The VBWD passed revised rules and regulations in February 2023 that apply to lakes, ponds, streams,

wetlands, and groundwater within the watershed. The Project would comply with these revised rules and regulations for stormwater, erosion control, and wetlands.

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

**Zoning**

The zoning classifications within the Project Area include community commercial (CC), industrial/office (IO), neighborhood commercial (NC), and low density residential (R3) (Figure 7).

According to the City of Oakdale Code Book, the CC district is intended to provide retail and service outlets. The developments in this district are intended to provide goods and services on a community market scale. The IO district was established to provide for light manufacturing, office, research and development, warehousing, and other permitted uses. The NC district is intended for the establishment of local centers for convenient retail or service outlets. The R3 district was established to provide for single-family and two-family housing and related uses. The project would not directly disturb any of the R3 zoned properties.

**Special Districts**

The Federal Emergency Management Agency (FEMA) map shows the Project Area is not located within a Special Flood Hazard Area or regulated floodway. The Raleigh Creek Watershed Management Plan also identifies that the Project Area is not within the 100-year flood level.

There are no designated wild and scenic rivers or agricultural preserves in the Project Area. While there are parcels that are classified as wetland land use areas, there are no wetland zoning districts within the Project Area. The closest parcels zoned as wetland districts are adjacent and south of the Project Area.

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 would not increase the flooding potential within the Site or any of the surrounding properties.

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

**United States Environmental Protection Agency**

The Project would align with the EPA institutional controls identified in the five-year review report for the Oakdale Disposal Site. 3M would continue to operate the groundwater treatment system at the Site, the Site would remain a CERCLA site, and the EPA would continue to conduct reviews of the site every five years.

**Minnesota Pollution Control Agency**

The Project would align with the MPCA Environmental Covenant and Easement. The Project would not convert the land use within the Oakdale Disposal Site to a residential, school, daycare, or non-commercial use. In addition, the Project would not require the extraction of groundwater and would not disrupt the current groundwater treatment system. 3M developed a work plan which identified the Project and proposed to explore the feasibility of the Project. This work plan was submitted to the MPCA on September 23, 2022. The MPCA provided comments on the work plan in November 2022. MPCA will provide review as permitting and design advances.

**City of Oakdale**

The Project would be compatible with the current zoning designations within the City of Oakdale Comprehensive Plan. After construction, the majority of the Project Area would remain in its current land use. The surface water conveyance pipe would be located underground and would not result in a change of land use. The flood retention basin would require the expansion of the existing wetland by 1.53 acres. As a result, the property where the flood retention basin would be located would not be available for future commercial or industrial development.

In addition, the Project would align with the goals identified within the City of Oakdale Surface Waters Management Plan. The Project would improve downstream water quality by limiting surface water contact with the contaminated Site.

**Valley Branch Watershed District**

The Project would be coordinated with VBWD to ensure that the Project is in compliance with their applicable revised rules and regulations. It is anticipated that the Project would require avoidance and minimization measures to address potential indirect wetland impacts associated with diverting water from the Oakdale Disposal Site. These measures are addressed in Section 12.

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

With the required permitting, the Project would be compatible with the City of Oakdale Comprehensive Plan.

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

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

Bedrock in the Project Area includes the Platteville and Glenwood Formations in the western part and Decorah Shale in the eastern part. The Platteville Formation consists of fossiliferous limestone and dolostone, while the underlying Glenwood Formation is sandy shale. The combined thickness of the Platteville and Glenwood Formations is 30 to 35 feet. Decorah Shale consists of shale interbedded with thin beds of fossiliferous limestone and has a maximum thickness of 40 feet. Depth to bedrock in the Project Area is up to 100 feet below ground surface.

Surficial geology consists of the Cromwell Formation, which ranges from fine-grained sand, silt, and clay to gravel. The unconsolidated sediments consist of a mixed fill material associated with previous waste disposal activities at the Site and the sands, silts, and clays of the Cromwell Formation that are associated with the Superior lobe advancement of the Wisconsinan glaciation. Typically, the upper 10 to 30 feet of unconsolidated sediment consists of silty sand with interbedded sandy clay. A discontinuous clay till, up to 30 feet thick, is often present below these sediments and above coarser-grained sand and gravel. The upper silty sand and lower sand and gravel have historically been referred to a "upper alluvium" and "lower alluvium", however, the depositional setting of these deposits is not certain. Pumping wells at the Site are typically screened in the coarser-grained sediments at depth. The uppermost bedrock across the Project Area consists of Decorah Shale and/or Platteville Formation limestone. Underlying the Platteville Formation is the Glenwood Shale, a regional confining unit. Below the Glenwood Shale is the St. Peter Sandstone which is a regionally extensive aquifer, although not used for municipal water supply.

No karst features or other geologically sensitive features are known to occur in the vicinity of the Project Area.

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

Topography in the Project Area ranges from 992 to 1,020 feet above mean sea level (amsl).

Soil information for the Project Area was obtained from the U.S. Department of Natural Resources (USDA)-Natural Resource Conservation Service (NRCS) Soil Survey Geographic (SSURGO) Database. A total of 16 soil map units have been mapped within the Project Area, eight of which are present in the construction limits (Table 8). The non-hydric Santiago silt loam, 2 to 6 percent slopes and the predominantly hydric Barronett silt loam, sandy substratum, and are the most dominant soil types in the Project Area and construction limits (Table 8). Additionally, historical knowledge and soil investigations conducted at the Abresch Disposal Site have identified areas of fill materials from historical waste disposal activities.

**Table 8 Soils within the Project Area**

| Soil Map Unit | Map Unit Symbol | Hydric rating | Acres in and (% of Project Area[1]) | Acres in and % of Construction Limits[1] |
|---|---|---|---|---|
| Santiago silt loam, 2 to 6 percent slopes | 153B | 0% (non-hydric)) | 18.6 acres (18.8) | 4.6 acres (35.3%) |
| Barronett silt loam, sandy substratum | 1847 | 90% (predominantly hydric) | 16.3 acres (16.5) | 5.2 acres (40.2%) |
| Aquolls and Histosols, ponded | 1055 | 100% (hydric) | 11.5 acres (11.6) | 0 |
| Poskin silt loam | 507 | 3% (predominantly non-hydric) | 10.3 acres (10.4) | 1.3 acres (9.8%) |
| Seelyeville muck | 540 | 100% (hydric) | 7.2 acres (7.3) | 0 |
| Brill silt loam | 120 | 5% (predominantly non-hydric) | 6.5 acres (6.6) | 0 |
| Urban land-Kingsley complex, 3 to 15 percent slopes | 861C | 1% (predominantly non-hydric) | 6.6 acres (6.7) | 1.6 acres (12.2%) |
| Freer silt loam | 266 | 5% (predominantly non-hydric) | 3.9 acres (4.0) | 0 |
| Water | W | Not applicable | 3.6 acres (3.6) | 0.1 acres (0.7%) |
| Markey muck | 543 | 95% (predominantly hydric) | 3.5 acres (3.6) | <0.1 acres (0.3%) |
| Rosholt sandy loam, 2 to 6 percent slopes | 302B | 0% (non-hydric) | 3.2 acres (3.3) | 0 |
| Udorthents, wet substratum | 1027 | 0% (non-hydric) | 2.7 acres (2.8) | 0 |
| Freeon silt loam, 2 to 6 percent slopes | 264 | 5% (predominantly non-hydric) | 2.5 acres (2.6) | 0 |
| Mahtomedi-Kingsley complex, 3 to 12 percent slopes | 896C | 0% (non-hydric) | 1.2 acres (1.2) | 0.1 acres (1.1%) |
| Santiago silt loam, 6 to 15 percent slopes | 153C | 0% (non-hydric) | 1.1 acres (1.1) | 0 |
| Antigo silt loam, 2 to 6 percent slopes | 49B | 0% (non-hydric) | 0.1 acres (0.1) | <0.1 acres (0.4%) |
| Not applicable | Not applicable | Total | 98.1 acres | 13.0 acres |

[1] Acreages and percentages may not sum due to rounding.

Permanent impacts to soil resources within the construction limits would occur during excavation to accommodate the surface water control structure, surface water conveyance pipe, and flood retention basin. Excavated soil would be sampled and depending on the analytical results, the soil would either be

reused or disposed of at an approved facility. Temporary impacts to soil resources would occur during ground disturbing activities associated with installation of the surface water conveyance pipe. Topsoil would be stripped to a minimum depth of 12 inches. Ground disturbance would be limited to the extent possible to minimize the potential for erosion. Temporary erosion and sediment control best management practices (BMPs) would be installed and designed to minimize erosion onsite and to prevent construction-related sediment from migrating offsite. Areas of temporary disturbance would be restored to pre-construction conditions following construction activities.

**Fence**

Construction of the fence would be limited to driving 2-inch steel posts through the soil surface. No soil excavation or earthwork would be required. Construction would be completed during frozen ground conditions.

## 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.*

Stantec Consulting Services, Inc. (Stantec) conducted a field wetland delineation for the Project on May 13, 2021, October 27, 2022, June 22, 2023, and August 31, 2023. The wetland delineations were completed for a 164-acre wetland survey area, which extends outside of the Project Area. A total of 65.24 acres of aquatic resources were delineated within the wetland survey area; 32.19 acres were delineated within the Project Area (Figure 8). Table 9 identifies the aquatic resources delineated within the wetland survey area and the Project Area. The wetland boundaries were approved by the Technical Evaluation Panel (TEP) on December 3, 2023. There are no floodways/floodplains, trout stream/lakes, wildlife lakes, migratory waterfowl feeding/resting lakes, or outstanding resource value waters located within the Project Area.

The wetlands located within the Project Area are connected through a ditch that bisects the Project Area. The ditch ranges in width from 2 to 6 feet at the top of bank. The ditch is frequently dry and has been observed flowing during the spring snowmelt and following rain events. The channel was observed through a majority of the Project Area but loses its channel appearance when entering into Wetland A (PWI #82-404W N) south of 34$^{th}$ Street. The channel resumes in the southern lobe of Wetland A (PWI #82-404W N) and continues to the east, crossing Hadley Avenue North and traversing Wetland T. This ditch is not classified as a public water; however, Raleigh Creek is designated as a public water.

**Table 9 Summary of Delineated Aquatic Resources**

| Wetland / Waterbody ID | Wetland[1] or Waterbody Type | Wetland or Waterbody Types in the Wetland Survey Area (Acres) | Wetland or Waterbody Types in the Project Area (Acres) |
|---|---|---|---|
| Wetland A (PWI #82-404W N) | Fresh Wet Meadow (Type 2) / Shallow Marsh (Type 3) / Shallow, Open Water (Type 4) | 14.18 | 14.18 |
| Wetland B | Sedge Meadow (Type 2) | 0.22 | 0 |
| Wetland C (PWI #82-404W S) | Fresh Wet Meadow (Type 2) / Shallow Marsh (Type 3) | 31.67 | 0 |
| Wetland D | Sedge Meadow (Type 2) | 0.08 | 0 |
| Wetland E | Fresh Wet Meadow (Type 2) | 0.48 | 0.48 |
| Wetland F and F2 | Seasonally Flooded Basin (Type 1) / Shallow, Open Water (Type 4) | 0.65 | 0 |
| Wetland G | Seasonally Flooded Basin (Type 1) / Fresh Wet Meadow (Type 2) | 0.34 | 0.34 |
| Wetland H (PWI #82-401W) | Shallow, Open Water (Type 4) / Deep Water Habitat Open Water Wetland (Type 5) | 5.30 | 5.30 |
| Wetland I | Shallow, Open Water (Type 4) / Deep Water Habitat (Type 5) | 1.66 | 1.66 |
| Wetland J | Fresh Wet Meadow (Type 2) / Shallow Marsh (Type 3) | 0.20 | 0.20 |
| Wetland K | Stormwater Pond / Shallow Marsh (Type 3) | 0.39 | 0 |
| Wetland L (PWI #82-394W) | Deep Water Habitat (Type 5) | 0.19 | 0 |
| Wetland M | Wet Ditch (Type 2) / Fresh Wet Meadow (Type2) | 0.02 | 0.02 |
| Wetland N | Wet Ditch (Type 2) / Fresh Wet Meadow (Type2) | 0.07 | 0.07 |
| Wetland O | Wet Ditch (Type 2) / Fresh Wet Meadow (Type 2) | 0.04 | 0.04 |
| Wetland P | Wet Ditch (Type 2) / Shallow Marsh (Type 3) | 1.02 | 1.01 |
| Wetland Q | Wet Ditch (Type 2) / Fresh Wet Meadow (Type 2) | 0.02 | 0.02 |
| Wetland R | Wet Ditch (Type 2) / Fresh Wet Meadow (Type 2) | 0.01 | 0.01 |
| Wetland S | Wet Ditch (Type 2) / Shallow Marsh (Type 3) | 0.04 | 0.04 |

| Wetland / Waterbody ID | Wetland[1] or Waterbody Type | Wetland or Waterbody Types in the Wetland Survey Area (Acres) | Wetland or Waterbody Types in the Project Area (Acres) |
|---|---|---|---|
| Wetland T | Wet Ditch (Type 2) / Shallow Marsh (Type 3) | 5.74 | 5.73 |
| Wetland U | Shallow Marsh (Type 3) | 2.04 | 2.04 |
| Wetland 1 (SEH) | Wet Ditch (Type 2) | 0.20 | 0.20 |
| Stream 1 | Ditch | 3,072 linear ft | 3,072 linear ft |
| Pond A | Excavated Pond | 0.68 | 0.68 |
| Pond B | Excavated Pond | 0.17 | 0.17 |
| Not applicable | **Total** | **65.41** | **32.19** |

[1] Wetland community type.

In addition, Wetland A (PWI #82-404W N), C (PWI #82-404W S), H (PWI #82-401W), and L (PWI # 82-394W) are classified by the DNR as public waters. The DNR completed an Ordinary High Water Level (OHWL) survey of the wetlands during the 2023 growing season. The PWI wetlands located within the wetland survey area are summarized in Table 10; Wetlands C (PWI #82-404W S) and L (PWI #82-394W) are not located within the Project Area. The OHWLs are identified on Figure 8.

**Table 10 Public Waters Located within the Wetland Survey Area**

| Wetland ID | PWI ID | OHWL[1] | Area within Wetland Survey Area (Acres) |
|---|---|---|---|
| Wetland A | 82-404W North ((PWI #82-404W N)) | 994.1 | 9.73 |
| Wetland C | 82-404W South (PWI #82-404W S) | 994.9 | 21.93 |
| Wetland H | 82-401W | 1006.5 | 4.45 |
| Wetland L | 82-394W | 994.3 | 0.19 |
| Not applicable | Not applicable | **Total** | **36.11** |

[1] The OHWL was surveyed by the DNR and provided to 3M on September 26, 2023. Elevations are provided in NAVD88.

**Surface Water Quality**

According to the MPCA impaired waterbodies list, there are no impaired lakes, streams, or wetlands located within one mile of the Project Area. However, surface waters within the Project Area are impacted by PFAS from the historic nature of the Site (see Item 6 for more information). Eagle Point Lake is the nearest listed impaired waterbody located approximately 2.1 miles southeast and downstream from the Project Area. Eagle Point is listed as impaired for elevated levels of perfluoroctanesulfonic acid (PFOS).

Surface water samples have been collected to identify PFAS concentrations within the Site and downstream within Raleigh Creek. The samples were collected from August 2020 and are ongoing. The

surface water samples collected from the Site and downstream in Raleigh Creek exceeded the PFAS water quality criteria established by the MPCA for this watershed. The water quality criteria was exceeded for PFOS, perfluorobutanesulfonic acid (PFBS), perfluorobutanoic acid (PFBA), perfluorohexane sulfonate (PFHxS), perfluorohexanoic acid (PFHxA), and perfluorooctanic acid (PFOA) at most of the sample locations within the Site. The sampling also confirmed that PFAS concentrations in surface water generally increase as water flows through the Site, which periodically contributes to PFAS surface water discharges at the Site outfall. Reducing this discharge is a primary objective of the diversion project.

A statistical summary of PFAS sampling results from 2020-2023 for monitoring locations SW01 and SW30 is presented in Table 11 below. Monitoring location SW01 is located at Hadley Avenue and is representative of surface water quality leaving the Site under existing conditions. Monitoring location SW30 is located at Granada Avenue and is representative of water entering the Site under existing conditions, and where the diversion for the Project would occur. As shown in Table 11, for many PFAS, the concentration of surface water increases one to two orders of magnitude as it flows through the Site.

In 1987, the VBWD constructed Project 1007, a large flood control project for the Tri-Lakes Area (Jane, Olson, and DeMontreville lakes), located approximately 1.3 miles northeast of the Project Area in Lake Elmo, Minnesota. The 1007 project connects the ditch which flows through the Project Area to the St. Croix River. In 2021, the MPCA conducted an assessment to understand how the Project 1007 area may be contributing to the PFAS contamination in the east metro area of the Twin Cities. Project 1007 identified that PFOS concentrations are the highest closest to the Oakdale Disposal Site and decrease steadily moving away from the source area. Under low flow conditions, there is no direct surface water connection to Raleigh Creek from the Site. Under high flow conditions, there is a continuous flow from the Site through the ditch into Raleigh Creek which allows for the transport of PFAS-impacted waters downstream into other water bodies.

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.*

The Project Area is located within two wellhead protection areas (WHP; Figure 12), The eastern portion of the Project Area is within Oakdale South WHP (82901). The western portion of the Project Area is within the North Saint Paul WHP (104801) (Minnesota Department of Health, 2019). The City of Oakdale has rated the drinking water supply management area vulnerability as moderate. The Project is not expected to have an adverse effect on groundwater quality.

Groundwater at and downgradient of the Site is impacted by VOCs and PFAS. Municipal water supplies in the area, including Oakdale and North St. Paul are monitored for these contaminants through routine sampling reported to the Department of Health. The City of Oakdale municipal water is treated for PFAS as part of previous remedies associated with the Site. Ongoing remediation at the Site, including this Project, is under the MPCA and EPA oversight.

Groundwater levels for the Project Area are typically 0 to 6 feet below ground surface. A groundwater monitoring network associated with the Site consists of 60 monitoring wells, 8 piezometers, and 20 active pump-out wells (Figure 9 and Figure 12). These wells and piezometers have been monitored since the early 1980s as part of on-going groundwater remediation at the Site. The pump-out wells run 24 hours per day at a combined rate of approximately 60 gallons per minute. The capture zone for these wells includes the portion of the Project Area that crosses the Abresch Disposal Site. The amount of capture from the pump-out system is monitored and reported annually to the MPCA. Outside of 3M property there are two active wells (Well 235516 and Well 652406) located within 500 feet of the Project Area (Figure12).

An evaluation for the Project Area included mapping of groundwater levels, measurement of vertical hydraulic gradients below the watercourse and wetlands, continuous monitoring of surface water stage and groundwater level response, and groundwater modeling. Groundwater contours for the upper alluvium represent the local water table (Figure 9). The groundwater flow direction on the Site is generally from north to south. Groundwater flow directions are controlled by surface water features and remedial pumping at the Oakdale Disposal Site. Interpretation of hydrologic data associated with monitoring at the Site indicate that the main watercourse and most of the associated wetlands are losing to groundwater across the central and southeast part of the Site. This is most apparent in areas immediately south of County Road 14 where the main watercourse crosses the groundwater cone of depression that has developed from the pumping wells. Data collected in 2022 using data logging pressure transducers in shallow wells near the watercourse show rapid rise in groundwater levels when water from the watercourse and wetlands infiltrates immediately after a storm event, when prior to the storm event the wetlands and watercourse were dry.

Interpretation of shallow groundwater contours for areas of the Oakdale Disposal Site north of County Road 14 indicates several areas where groundwater has the potential to discharge to surface water. These areas include the ditch immediately north of County Road 14 and along the northwest shoreline of Wetland I.

The potential for groundwater to discharge into the roadway ditch along the north side of County Road 14, along the surface water conveyance pipe alignment, was evaluated by Barr. That evaluation reviewed long-term groundwater level data from two monitoring wells located immediately north of the roadway ditch: W22 and W26R. These data were compared to recent elevation surveys, which show that the northern invert of the 88-inch RCP pipe that conveys the drainage ditch underneath County Road 14 is at 1,000.99 feet NAVD88. The roadway ditch elevation east of the 88-inch RCP pipe is typically higher and between 1,002.1 feet to 1,002.5 feet NAVD88. The roadway ditch elevation west of the 88-inch RCP pipe is typically higher and between 1,005.1 feet to 1,005.5 feet NAVD88. Data from the monitoring wells showed increasing water level trends since approximately 2010, and water levels in these two wells reached record or near record levels in late 2019 and early 2020. Measured water levels at W22 and W26R peaked in October 2019 at 1,003.30 feet and 1,005.44 feet, respectively. In 2022, water levels measured at W26R were 1,002.28 feet and 998.06 feet and at W22 were 1,000.94 feet and 997.51 feet in June and November of 2023, respectively. The November water levels at these wells were the lowest measured since 2015. The higher water levels in 2019 and 2020 appear consistent with responses due to climate conditions.

Continuous water level monitoring at another nearby well, W522, in 2022 showed that downward hydraulic gradients were present between the ditch and groundwater. During wet periods, groundwater may discharge to the surface near the existing 88-inch RCP pipe and in low areas of the roadway ditch in this area. However, weather conditions over the last several years have resulted in lower groundwater levels, and groundwater discharge has not been observed.

Construction methods, pipe bedding materials, and groundwater barriers would be designed and placed at appropriate intervals to prevent the lateral migration of contaminated groundwater along the exterior of surface water conveyance pipe.

Vertical hydraulic gradients across the unconsolidated sediments are downward across most of the Site. The downward vertical gradients are driven by both the regional groundwater flow system and remedial pumping. Much of this groundwater is ultimately captured by the pump-out wells across the Site.

Groundwater at the Site is impacted by VOCs and PFAS and is being monitored and remediated under the MPCA and EPA oversight. For more information, see Items 6 and 14.

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

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

No wastewater would be produced or treated as part of this Project. The Project would not affect the existing groundwater treatment system. As previously discussed, groundwater is pumped from the Site and treated for VOCs and PFAS prior to discharging to Metropolitan Council Environmental Services (MCES) sanitary sewer. This activity is approved under an existing discharge permit. The water treated by the existing groundwater treatment system is not considered wastewater.

The Project would require temporary dewatering during construction activities. Additional information on the temporary dewatering is provided in Section 6 (b.iii).

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

Not applicable.

*2) If the wastewater discharge is to a subsurface sewage treatment systems (SSTS), describe the system used, the design flow, and suitability of site conditions for such a system. If septic systems are part of the project, describe the availability of septage disposal options within the region to handle the ongoing amounts generated as a result of the project. Consider the effects of current Minnesota*

*climate trends and anticipated changes in rainfall frequency, intensity, and amount with this discussion.*

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 mitigate impacts. Discuss any effects to surface or groundwater from wastewater discharges, taking into consideration how current Minnesota climate trends and anticipated climate change in the general location of the project may influence the effects.*

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

There are two primary flow paths for water to enter the Project Area: 1) the south subwatershed (146 acres), which collects runoff from the southern residential area; and 2) the central subwatershed (92 acres) which collects runoff from the residential area (Figure 4). Runoff from the south subwatershed is collected by storm sewer and is discharged to Wetland C (PWI #82-404W S) by four outlet pipes, thereby entering the Project Area. The south subwatershed would not be diverted by the Project. The Project would not change the amount of stormwater received for discharge from the south subwatershed.

Currently stormwater runoff from the central subwatershed is collected by storm sewer and discharged the ditch and Wetland H (PWI #82-401W). The ditch flows through Wetland H (PWI #82-401W) and is conveyed via an open channel and stormwater pipes to Wetland A (PWI #82-404W N). The direct drainage from the central subwatershed would not be diverted by the Project.

After water enters the Project Area through the south or central subwatersheds, runoff flows through the wetland complex in the Project Area and enters a ditch through the eastern portion of Wetland A (PWI

#82-404W N). The outflow of Wetland A (PWI #82-404W N) is conveyed via two culverts under Hadley Avenue North to the Wetland T. Runoff from Wetland T is transported by three stormwater pipes under Interstate 694 and continues east. East of Interstate 694, the ditch becomes Raleigh Creek and generally flows southeast and discharges to Eagle Point Lake. After Eagle Point Lake, stormwater travels through a series of water bodies such as Lake Elmo, Horseshoe Lake, and West Lakeland Storage Area before it enters a stormwater pipe near Interstate 94 and eventually discharges to the St. Croix River.

The Project would not alter the land cover of the Project Area and would not increase the impervious surface area, so changes in drainage pattern would be solely the result of the Project. The Project would alter the existing drainage pattern from the north subwatershed by routing runoff that would enter the wetland complex south of County Road 14 and west of Hadley Avenue North to Wetland T, therefore bypassing Wetland H (PWI #82-401W) and Wetland A (PWI #82-404W N). The drainage pattern after stormwater leaves Wetland T would not be changed by the Project. The Project Area, in the proposed condition, would continue to receive water after large rain events from the central and south subwatersheds, outflow from Wetland H (PWI #82-401W), runoff from a section of 34$^{th}$ Street, and direct runoff from the Project Area. The existing and proposed drainage pattern and areas are shown in Figure 4.

Although the Project would change the stormwater routing near the Project Area, the Project would not increase the runoff peak rates or total volume that flows under Interstate 694 (head waters of Raleigh Creek) due to the Project complying with VBWD rules. The VBWD design standards state that the existing peak flow rate cannot be exceeded in the proposed condition for the 2-, 10-, and 100-year, 24-hour storms and the 100-year, 10-day snowmelt event. In addition, the VBWD design standards require applicants to analyze the stormwater runoff volumes. In order to meet these requirements, a flood retention basin woudl be constructed for a permanent stormwater management. The purpose of the flood retention basin is to store and slowly release the diverted runoff thereby maintaining the existing peak flow rates, peak elevations, and discharge volumes in the Project Area. In terms of water quality, the Project would improve the water quality of Raleigh Creek and downstream waterbodies. As part of the Project, water quality would be monitored downstream of the Project.

The Project would consider current Minnesota climate trends and anticipated changes in rainfall frequency, intensity, and amount. The surface water conveyance pipe would include an overflow to bypass storm events that exceed the 100-year storm event. The overflow system, during large and intense rainfall events, would route water along the proposed surface water conveyance pipe but would also allow runoff to flow through Wetland H (PWI #82-401W) and Wetland A (PWI #82-404W N), mimicking the existing direct drainage from the north subwatershed (Figure 4). The inclusion of the overflow system would help prevent the surface water conveyance pipe and proposed flood retention basin from being over capacity during large storm events.

The Project would result in land disturbance along the surface water conveyance pipe and for grading for the proposed flood retention basin. At this time, the total area of disturbance is unknown but would most likely be over an acre and require an NPDES construction stormwater permit. The proposed Project would include necessary best management practices for erosion control such as silt fence, inlet protection, erosion control blanket, bioroll logs, etc. The proposed Project would meet the erosion control

requirements of VBWD and the MPCA. In addition, the Project would use wildlife friendly erosion control measures and reseed with native species of grasses and forbs to reduce impacts to sensitive wildlife species. The Project would also avoid hydro-mulch products that contain any materials with synthetic (plastic) fiber additives, as the fibers can re-suspend and flow into waterbodies.

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

Construction of the surface water conveyance pipe may require temporary dewatering. Excavation dewatering would need to be managed appropriately and discharged to the sanitary sewer, treated, or disposed of through other options. A Water Appropriation Permit from the DNR would be obtained if more than 10,000 gallons of water per day or 1 million gallons of water per year are appropriated. In addition, the contractor would obtain a MCES special discharge permit for discharging water to the sanitary sewer produced during excavation dewatering. Barr and 3M would assist the contractor with permitting by providing available groundwater data.

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.*

**Direct Wetland Impacts**

No direct, permanent wetland impacts would occur from installation of the surface water conveyance pipe, grading for the flood retention basin, or associated outfalls.

**Temporary Wetland Impacts**

Approximately 1.01 acres of Wetland P would be temporarily impacted under the Wetland Conservation Act from excavation for the surface water conveyance pipe (Figure 10). Wetland P is located within the County Road 14 ditch and would not be regulated under the Clean Water Act or the Public Waters Work Permit Program. After the surface water conveyance pipe is installed, Wetland P would be re-graded to its pre-existing contours and seeded with a native seed mix. Therefore, construction of the surface water conveyance pipe would not result in permanent loss of wetland, so no additional minimization measures are proposed.

**Indirect Wetland Impacts**

The Project Area currently receives stormwater runoff from approximately 423 acres, including drainage from the north side of the Project Area (north of 34th Street), south side of the Project Area (south of 30th Street), and direct runoff from the on-site wetlands (Figure 10). With the implementation of the diversion system, 185 acres of drainage area would be diverted around the Site, which is approximately 44 percent of the total drainage area. The remaining 238 acres of drainage area within the Project Area would continue to drain to the Site (Figure 10). Eight wetlands (located in the ditches of County Road 14) and two stormwater ponds would not be affected by the Project since they are not connected to the ditch going through the Site. Seven wetlands were evaluated for indirect wetland impacts since the ditch either passes through them (A (PWI #82-404W N), H (PWI #82-401W), N and T), the wetlands are adjacent to the ditch (E and I), or water is diverted to Wetland U. Potential indirect wetland impacts were assessed for the Project and the results are presented in Appendix B.

Wetlands A (PWI #82-404W N), E, H (PWI #82-401W), I, N, U and T were evaluated to determine if the Project would reduce the wetland area (acreage), result in a change in wetland type, or result in a loss of wetland function. This evaluation was conducted using a revised XPSWMM model for the Raleigh Creek watershed and the 0.5-inch, 1-inch, 1-year, and 2-year Atlas 14, 24-hour design storm events. The design storm events were simulated using the XPSWMM model for the existing and proposed conditions scenarios.

Under the proposed scenarios, the wetlands on the Site would continue to receive runoff from their immediate subwatersheds, as well as the central and south subwatersheds (238 acres total that would not be diverted by the Project). However, the wetland areas currently receiving runoff from the ditch would have a change (reduction) in surface water inflow, resulting in a change (reduction) in inundation duration and maximum water surface elevations. The change in the duration and depth of inundation could potentially affect the wetland function. However, the proposed conditions model indicates that the wetland areas would still be inundated after the modeled rain events. The majority of the modeled conditions would result in less than a five-day change in inundation conditions compared to the existing

conditions. However, some of the model events would result in more than a 0.1-foot change in maximum water surface elevation (MWSE) throughout the simulated 20-day duration.

**Based on the modeling results:**

- The Project would have no indirect impact to Wetland E and Wetland I since these wetlands are not connected through surface water flows to the ditch and would not experience a change in the maximum surface water elevation based on the modeling data.
- There would be no changes to the volume of surface water received by Wetland N and therefore no indirect impacts are anticipated.
- Indirect impacts to Wetland U would be avoided by construction of the flood retention basin which would reduce the effects of the diverted surface water to the wetland area. The surface water that would be diverted around the Site could have an indirect impact on Wetland A (PWI #82-404W N), Wetland H (PWI #82-401W), and Wetland T:

    1. Wetland A (PWI #82-404W N) - The model results indicate that subwatershed RLE_800a would have a maximum 0.23-foot reduction in the MWSE during the 1-inch event under Scenario 2. This would correspond with a 0.53 acre reduction in the inundation area (Table 3 in Appendix B).

    2. Wetland H (PWI #82-401W) - The model indicates that subwatershed RLE_910 would have a maximum 0.5-foot reduction in the MWSE during the 2-year event under Scenario 2. This would correspond with a 0.48 acre reduction in the inundation area (Table 3 in Appendix B).

    3. Wetland T – The model indicates that subwatershed RLE_720 would have a maximum 0.1-foot reduction in the MWSE during the 2-year event under Scenario 2. This would correspond with a 0.34 acre reduction in the inundation area (Table 3 in Appendix B).

While the modeling results are helpful to evaluate the indirect wetland impacts associated with the Project, the results are not considered conclusive due to the limitations of the model and the uncertainty in the modeled storm events. The evaluated storm events are helpful to determine what would occur during a specific rain event however, they do not evaluate the long-term effects of the Project during a variety of storm events. If wetland monitoring would be required to evaluate the long-term effects of the stormwater diversion on the affected wetlands, 3M would coordinate with the DNR and VBWD on future monitoring requirements.

3M would work with the DNR, VBWD, and USACE (as needed) to ensure that the Project is in compliance with the Public Waters Work Permit Program, Wetland Conservation Act, VBWD Rules and Regulations, and the Clean Water Act. A Joint Permit Application would be submitted to agencies detailing the Project, alternatives, wetland impacts, and wetland mitigation. 3M would work with the DNR, VBWD, and USACE to determine if wetland mitigation would be required for the Project.

**Fence**

The fence would require 96 fence posts to be installed within Wetland A (PWI #82-404W N). To minimize soil compaction, construction of the fence would occur during frozen ground conditions. Vegetation removal would be limited to a 10-foot wide corridor centered on the fence alignment, After construction is complete, the vegetation would be allowed to regrow.

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

The Project would divert surface water from the ditch in the Project Area. The diverted surface water would reconnect with the ditch in the property adjacent and south of Parcel B. The Project would not physically alter the ditch channel. The ditch would continue to convey water from the central and south subwatersheds which is not diverted as part of the Project and during large rain events. In addition, the Project would not reduce surface water flows in Raleigh Creek on the east side of Interstate 694.

**Fence**

The fence would include a 10-foot gap at the proposed ditch crossing. The fence gap would allow surface water to flow through to the ditch unimpeded.

## 13. Contamination/Hazardous Materials/Wastes

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

As previously discussed in Section 6, the Site is part of a Superfund site. Contamination within the Site includes VOCs and PFAS as described in Section 6. Because of the contaminated soils, 3M would follow MPCA soil management guidance to minimize the risk associated with earthwork activities, including transporting contaminated soil excavated from the Site to the landfill.

The MPCA's "What's in My Neighborhood" database and federal regulatory databases were reviewed to determine if any additional sites with regulatory listing of the contamination such as dumps, landfills, storage tanks, or hazardous liquids are and/or were located within the Project Area (Figure 11). The following sites were identified within the Project Area:

- Site 28663: Kwik Trip is located to the west of the proposed flood retention basin, and a gasoline release was previously reported at the Kwik Trip site. Closure documentation for the Kwik Trip site indicates that free gasoline product was observed at closure and groundwater contamination was indicated, however, the records identify that no additional investigation or cleanup was needed as the remaining contamination did not pose a threat to public health or the environment. The Kwik Trip also contains a stormwater site (143308).
- Site 20964: Kmatic has a record for Hazardous waste Application/Notification/Registration in 1985 and it is not currently active.
- Site 108909: This site includes the Holiday gas station which contains underground tanks that contain petroleum products. A leak was reported at the property in November 2021. The site was referred to the MPCA Site Assessment Program on August 10, 2023.
- Site 185391: This is the Abresch Disposal Site and a summary of the previous contamination at the Site is provided in Section 6.
- Site 41540: This site is a hazardous waste located along Granada Avenue North. This site is not currently active.
- Site 22286: This site is the location of a small waste generator. A voluntary investigation and clean up was completed at this site in April 2020. The investigation was closed in May 2020.

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

The Project would not generate or store solid waste.

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

Hazardous material storage would include secondary containment of fuels during construction of the Project. Fuels, oils, lubricants, and other materials typically used by construction equipment would be used

during construction. No other chemicals or hazardous materials would be needed for or generated by the Project.

Refueling spills and equipment failures, such as a broken hydraulic line, could introduce hazardous materials into soil and surface waters during construction. A spill could result in potentially adverse effects to on-site soils and surface waters. However, the amounts of fuel and other lubricants and oils would be limited to that needed by the equipment onsite. Supplies and equipment needed to quickly limit any spills or equipment failure would also be located onsite.

To minimize the likelihood of potential spills and leaks of petroleum and hydraulic fluids during project construction, equipment would be inspected daily for spill or leaks, fuels for construction would be stored at staging areas in upland locations, and equipment refueling and maintenance would be performed in locations away from the three lagoons. In addition, the contractor would be required to use double-walled tanks or secondary containment for single-walled tanks used to store petroleum products onsite. Any bulk lubricants would also be stored with secondary containment protection. All petroleum and lubricant storage containers would be inspected on a weekly basis and the inspections would be documented.

*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.*

Earthwork in the Project Area is expected to result in the displacement of 27,000 cubic yards (CY) of soil for installation of the surface water conveyance pipe and excavation of the flood retention basin. A total of 9,600 CY of soil would be excavated for the construction of the flood retention basin and 19,300 CY of soil would be excavated for installation of the pipe. The soil excavated along the surface water conveyance pipe alignment within the limits of the Abresch Disposal Site is likely contaminated and approximately 8,300 CY of contaminated soil would be transported to an approved landfill for disposal. Soils outside of the limits of the Abresch Disposal Site would be reused on site to backfill the stormwater conveyance pipe trench and any excess soil on the project would be taken to the landfill.

Once completed, the Project would not generate or store hazardous waste.

## 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 Project Area contains both natural landscapes and highly developed commercial areas. The natural landscape within the Project Area consists of upland areas as well as open and forested wetland areas. County Road 14 crosses the northern portion of the Project Area. A drainage ditch flows through the Project Area and flows into what becomes Raleigh Creek east of Interstate 694. Wildlife species that may occupy the Project Area and its vicinity are likely accustomed to human activity and disturbance and

include deer, fox, coyote, racoon, rabbits, skunk, rodents, amphibians, and birds. Herons, swans, egrets, and other waterfowl are often observed feeding in nearby wetlands. Crayfish, minnows, and small bullheads have been documented in the headwaters of Raleigh Creek and associated nearby wetlands. Historical monitoring in Raleigh Creek documented minnows, green sunfish red ear sunfish (small bullheads, tadpoles, green frogs, and crayfish within the stream channel.

b. *Describe rare features such as state-listed (endangered, threatened, or special concern) species, native plant communities, Minnesota Biological Survey Sites of Biodiversity Significance, and other sensitive ecological resources on or within close proximity to the site. Provide the license agreement number (LA2022-008) and/or correspondence number (MCE 2024-00318) from which the data were obtained and attach the Natural Heritage Review letter from the DNR. Indicate if any additional habitat or species survey work has been conducted within the site and describe the results.*

**Federal Species**

An official list of federally listed species that could potentially be present in the vicinity of the Project Area was requested through the U.S. Fish and Wildlife Service (USFWS) online Information, Planning, and Consultation (IPaC) program on September 24, 2024 (Appendix C). According to the IPaC results, no federally designated critical habitat is present in the Project Area; the USFWS defines critical habitat as the habitat necessary to support the special needs of federally threatened or endangered species. IPaC identified three federally endangered species as potentially being present in the vicinity of the Project Area; these are summarized in Table 12.

IPaC also identified one proposed endangered species and one proposed threatened species, (Table 12). Federal proposed endangered and threatened species are species that the USFWS has determined are in danger of extinction and has proposed a draft rule to list as endangered or threatened; proposed endangered and threatened species are not protected by the take prohibitions of the Endangered Species Act (ESA) until the rule to list is finalized.

IPaC also identified one candidate species: the monarch butterfly as potentially occurring within the Project Area. Federal candidate species are species for which the USFWS has sufficient information to propose listing them as endangered or threatened under the ESA; candidate species have no federal protection under the ESA.

**Table 11 Federal species identified in IPaC**

| Common Name | Scientific Name | Federal Status[1] | State Status[1] | Habitat in Minnesota2 | Habitat Present in Project Area |
|---|---|---|---|---|---|
| Higgins eye pearly mussel | *Lampsilis higginsii* | END | END | Found only in the Mississippi River and the lower portion of some of its large tributaries. | No |
| Winged mapleleaf | *Quadrula fragosa* | END | END | Found only in the St. Croix River. | No |

| Common Name | Scientific Name | Federal Status[1] | State Status[1] | Habitat in Minnesota2 | Habitat Present in Project Area |
|---|---|---|---|---|---|
| Salamander mussel | *Simpsonaias ambigua* | Proposed END | END | Historically it occurred in the Mississippi River but it is currently restricted to the lower St. Croix River. | No |
| Rusty patched bumble bee[3] | *Bombus affinis* | END | NL | Open areas with abundant flowers, nesting sites (underground and abandoned rodent cavities or clumps of grasses), and undisturbed soil for overwintering sites. | Yes, marginal |
| Monarch butterfly | *Danaus plexippus* | Candidate | NL | Areas with a high number of flowering plants. Presence of milkweed (*Asclepias* spp.) to complete the caterpillar life stage. | Yes, marginal |
| Whooping Crane | *Crus americana* | EXPN | NL | Large, open wetlands and lakeshores. | Yes, marginal |
| Western Regal Fritillary | *Argynnis idalia occidentalis* | Proposed THR | NL | Native prairie habitat. | Yes, marginal |

[1] Federal or state status: END = endangered; THR=threatened; SPC=special concern; NL=not listed; EXPN = Experimental, non-essential

[2] With the exception of monarch butterfly and whooping crane, all habitat information obtained from the MnDNR Rare Species Guide.

IPaC also identified the bald eagle (*Haliaeetus leucocephalus*) and golden eagle (*Aquila chrysaetos*) as potentially occurring within the vicinity of the Project Area (Appendix C). Although these species are not protected under the ESA, they are protected by the Bald and Golden Eagle Protection Act (BGEPA) and Migratory Bird Treaty Act (MBTA). Bald eagles typically inhabit forested areas near large lakes or streams where they can find fish, their staple food. Suitable bald eagle habitat is present within and adjacent to the Project Area. Golden eagles are typically found in open country in the vicinity of hills, cliffs, and bluffs; they are known to be sensitive to human activity and avoid developed areas. The Project Area does not provide suitable habitat for golden eagles; as such, impacts to this species are not anticipated.

**State Species**

The DNR's Natural Heritage Information System (NHIS) database was reviewed to determine if any Minnesota state-listed species have been documented within one mile of the Project Area. The DNR reviewed the NHIS to assess if the project has the potential to impact any rare species or other significant features (Appendix D). According to the DNR NHIS database two state-listed threatened species have been documented within one mile of the Project Area; these are summarized in Table 13.

**Table 12 Species identified in the Natural Heritage Information System Database within one mile of the Project Area**

| Common Name | Scientific Name | Federal Status[1] | State Status[1] | Habitat in Minnesota[2] | Habitat Present in Project Area |
|---|---|---|---|---|---|
| Blanding's turtle | *Emydoidea blandingii* | NL | THR | Wetland complexes and adjacent sandy uplands. | Yes |
| Clinton's bulrush | *Trichophorum clintonii* | NL | THR | Mesic/wet prairie or savannah; sometimes openings or edges in oak forests. | Possibly |

[1] Federal or state status: END = endangered; THR=threatened; NL=not listed
[2] Habitat information obtained from the MnDNR Rare Species Guide.

No DNR native plant communities, Minnesota Biological Survey (MBS) Sites of Biodiversity Significance, or DNR Scientific and Natural Areas are present within or adjacent to the Project Area.

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

**General Impacts**

As discussed in the Project 1007 Baseline Ecological Risk Assessment, organisms potentially exposed to PFAS associated with the aquatic habitats include aquatic plants, water column invertebrates, benthic invertebrates, fish, amphibians and reptiles, birds, and mammals. These organisms may be exposed to PFAS either through direct contact with abiotic media (e.g., sediment, surface water, foam) or through consumption of aquatic plants, invertebrates, or other dietary items (e.g., amphibians, fish). The Project would reduce the concentrations of PFOS and other PFAS downstream of the Site, which would benefit organisms and associated foodwebs in these aquatic habitats.

The Project may have minor temporary indirect impacts on wildlife within and adjacent to the construction limits. Temporary indirect impacts on wildlife may include increased noise and human activity during construction. Many species, even those accustomed to human proximity, could temporarily abandon habitats within and near the construction limits until the work is completed. These temporary impacts are not expected to irreparably harm wildlife individuals or populations. Direct impacts on wildlife, such as ground nesting birds, could occur should they be residing in the surface water conveyance pipe corridor or flood retention basin area during Project construction.

Permanent impacts to vegetation/habitat would occur for construction of the flood retention basin. Temporary impacts to vegetation/habitat within a 50-foot corridor along the surface water conveyance pipe would occur during construction.

As discussed in Section 7, future climate trends in the area indicate that temperature is generally increasing. Projections for precipitation suggest a slight increase in annual precipitation, an increase in 100-year storm intensities, and more drought events. These changes in temperature and/or precipitation could potentially alter habitats in the Project Area and the species that rely on those habitats. Warmer temperatures and more frequent drought events could lead to altered hydrology in wetlands already impacted by the Project; this could affect species that depend on these wetland habitats. As discussed in Section 12, the surface water conveyance pipe would include an overflow to bypass storm events that exceed the 100-year storm event. The overflow system, during large and intense rainfall events, would route water along the proposed surface water conveyance pipe but would also allow runoff to flow through Wetland A (PWI #82-404W N), mimicking the existing surface water flow path. The inclusion of the overflow system would help prevent the surface water conveyance pipe and proposed flood retention basin from being over capacity during large storm events; however, it would allow potentially contaminated water to enter into nearby habitats.

**Federal Species**

Because suitable habitat for Higgins eye pearly mussel, winged mapleleaf, salamander mussel, and golden eagle is not present in the Project Area, impacts to these species are not anticipated from the Project. The Minnesota-Wisconsin Endangered Species Determination Key was completed in IPaC, and a no effect determination has been concluded for these species (Appendix C).

Although marginal whooping crane habitat is present in the vicinity of the Project Area, given the rarity of whooping cranes in Minnesota and their tendency to avoid areas of human disturbance, impacts to the species are not anticipated from the Project. The Minnesota-Wisconsin Endangered Species Determination Key was completed in IPaC, and a no effect determination has been concluded for this species (Appendix C).

The construction area contains marginal habitat suitable for monarch butterflies, consisting primarily of mowed vegetation and an absence of milkweed plants. As such, impacts to monarch butterflies are not anticipated from the Project. The Minnesota-Wisconsin Endangered Species Determination Key was completed in IPaC, and a no effect determination has been concluded for this species (Appendix C).

The construction limits are located within the USFWS "high potential zone" for rusty-patched bumble bees. The high potential zone represents areas where the species is likely to be present. Given the mowed nature of the construction limits, marginal habitat suitable for rusty-patched bumble bees is present in the area where ground disturbance would occur. As such, impacts to rusty-patched bumble bees are not anticipated from the Project. The Minnesota-Wisconsin Endangered Species Determination Key was completed in IPaC, and a no effect determination has been concluded for this species (Appendix C).

The construction area contains marginal habitat suitable for western regal fritillary consisting primarily of mowed vegetation. As such, impacts to western regal fritillaries are not anticipated from the Project. The Minnesota-Wisconsin Endangered Species Determination Key was completed in IPaC, and a no effect determination has been concluded for this species (Appendix C).

Suitable bald eagle habitat is present within and adjacent to the Project Area. There are no known nests present within the project area, or within ½ mile.

**State Species**

Because suitable habitat for Foster's tern is not present in the Project Area, impacts to this species are not anticipated from the Project.

Habitat suitable for Clinton's bulrush may be present within and adjacent to the construction limits. Potential impacts to Clinton's bulrush individuals could occur should they be present in areas of ground disturbance.

Habitat suitable for Blanding's turtle is present within and adjacent to the construction limits and depending upon season, active or hibernating Blanding's turtles could be present. If construction occurs when Blanding's turtles are active, direct impacts could occur should any be present within the construction limits. There would be no direct water level impacts on wetlands that would be considered suitable Blanding's turtle overwintering habitat and construction would not directly disturb these wetlands. Potential impacts to Blanding's turtles would be minimized by conducting construction activities in the winter months when Blanding's turtles are hibernating in wetlands and ponds outside of the project area. Construction would be limited to the road ROW and construction of the flood retention basin.

**Invasive Species**

Given the disturbed nature of portions of the Project Area, invasive species are likely present. In order to minimize the spread of non-native invasive species, construction equipment would be cleaned prior to arriving on site and cleaned again upon leaving the site. In addition, areas disturbed during construction, such as the surface water conveyance pipe corridor, would be seeded with native vegetation.

*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.*

Measures that would be taken to avoid, minimize, or mitigate adverse effects on fish, wildlife, and vegetation are discussed below.

- To minimize impacts to vegetation/habitat, following installation of the surface water conveyance pipe, the 50-foot corridor would be seeded with an approved native seed mix.
- Potential impacts to bald eagles would be minimized by maintaining a 660 foot buffer between the Project construction activities and any active nests. If construction or disturbance must be performed closer than a 660 feet from an active nest, activity would be restricted to outside the nesting season (i.e., August through mid-January).
- To demonstrate avoidance of potential impacts to Clinton's bulrush, a qualified surveyor would need to determine if suitable habitat exists within the activity impact area including areas with hydrological impacts and, if so, conduct a survey prior to any project activities.

If the species is determined to be present, the proposer would need to obtain an approved avoidance plan for this species or acquire a Take permit from the DNR.

- To minimize potential impacts to Blanding's turtles, the following avoidance measures would occur, due to DNR requirements:
    - Check bare ground within construction areas for turtles before the use of heavy equipment or any ground disturbance.
    - Check pits and trenches for turtles every morning before construction activities begin and immediately prior to pits/trenches being backfilled.
    - Upon completion, pits and trenches must be filled. Ideally restored to pre-construction contours and re-vegetated with native species suitable to the local habitat.
    - Install and maintain a temporary turtle proof barrier, such as a silt fence, to keep turtles out of soil stockpiles, gravel pads, and other areas of exposed soil/sand/sediment during nesting season, May 15 to July 15. The turtle proof barrier must be buried a minimum of 10 inches and removed once project is complete.
    - Avoid wetland and aquatic impacts during hibernation season, between September 15 and April 15, if the area is suitable for hibernation.
    - Limit erosion and sediment control to wildlife friendly erosion control to avoid the inadvertent take of Blanding's turtles.
    - Avoid hydro-mulch products that contain any materials with synthetic (plastic) fiber additives, as the fibers can re-suspend and flow into waterbodies.
    - The Blanding's turtle flyer must be given to all contractors working in the area.
    - Report any sightings using the *Quick Species Observation Form*.
    - If turtles are in imminent danger, move them by hand out of harm's way; otherwise, they are to be left undisturbed. Directions on how to move turtles safely can be found at *Helping Turtles Across the Road*.
- To minimize potential impacts to federally and/or state listed bat species, tree removal would avoided from June 1 through August 15.
- To minimize potential impacts to rusty patched bumble bees, disturbed soils would be reseeded with native species of grasses and forbs using BWSR seed mixes or MnDOT seed mixes.
- To minimize impacts to ground nesting birds, surveys would be conducted prior to ground disturbing activities or project construction would occur outside of the breeding season.

## 15. Historic Properties

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

Barr completed a review of available cultural resources data by accessing the Minnesota Office of the State Archaeologist (OSA) Portal for archaeological sites on October 13, 2023, and March 1, 2024. Information regarding documented historic architectural resources in proximity to the Project Area was obtained by accessing the Minnesota Statewide Historic Inventory Portal (MnSHIP) on February 29, 2024. In addition, Barr also reviewed parcel data available through the Washington County Property Viewer to determine whether properties over 50 years in age were present in and around the Project Area.

The OSA Portal indicates that one previously documented cultural resource, consisting of alpha site 21WAab, is partially located within the Project Area boundary. Alpha sites have not been confirmed by a formal archaeological survey, but generally represent locations where an archaeological site is anticipated based on some level of historic documentation. Alpha site 21WAab represents the location of the potential ghost town of Oak Dale Station. No site records or additional information regarding this resource is available. However, due to the amount of commercial and residential construction in the area containing the alpha site, there is very low likelihood for intact components of this cultural resource to be present within the Project Area. In addition, one archaeological site (21WA0028) and one historic cemetery (St. Paul's Priory Cemetery) have been recorded within a mile of the Project Area.

A review of MnSHIP indicates that no documented historic architectural resources are located within the Project Area. Within one mile surrounding the Project Area, 30 historic architectural resources have been documented (Table 14). These include railroads, trunk highways, bridges, houses, a church complex, and an industrial building. Twenty-one of these resources are located more than .5 miles from the Project Area, closer to North St. Paul. The remaining nine resources are located between 0.1 and 0.48 miles from the Project Area. Two of the 30 resources have been determined eligible for the National Register of Historic Places (NRHP) including St. Paul's Priory (RA-MWC-00050) and the Saint Paul, Stillwater & Taylors Falls/Chicago, Saint Paul, Minneapolis & Omaha Railroad Corridor (XX-RRD-CNW001). Neither of these NRHP-eligible resources would be affected by the Project.

**Table 13 Documented Historic Architectural Resources within 1 Mile of the Project Area**

| Inventory Number | Property Name | Property Type | NRHP Eligibility | Distance from Project (miles) |
|---|---|---|---|---|
| RA-MWC-00050 | St. Paul's Priory | Building | Eligible | 0.62 |
| RA-NPC-00005 | House | Building | Unevaluated | 0.85 |
| RA-NPC-00007 | Dobbins Manufacturing Co. | Building | Unevaluated | 0.99 |
| RA-NPC-00010 | House | Building | Unevaluated | 0.55 |

| Inventory Number | Property Name | Property Type | NRHP Eligibility | Distance from Project (miles) |
|---|---|---|---|---|
| RA-NPC-00017 | House | Building | Unevaluated | 0.77 |
| RA-NPC-00023 | House | Building | Unevaluated | 0.89 |
| RA-NPC-00024 | House | Building | Unevaluated | 0.87 |
| RA-NPC-00036 | House | Building | Unevaluated | 0.95 |
| RA-NPC-00037 | House | Building | Unevaluated | 0.93 |
| RA-NPC-00150 | House | Building | Unevaluated | 0.99 |
| RA-NPC-00151 | House | Building | Unevaluated | 0.99 |
| RA-NPC-00155 | House | Building | Unevaluated | 0.99 |
| RA-NPC-00156 | House | Building | Unevaluated | 0.99 |
| RA-NPC-00157 | House | Building | Unevaluated | 0.99 |
| RA-NPC-00161 | House | Building | Unevaluated | 0.99 |
| RA-NPC-00236 | House | Building | Unevaluated | 0.99 |
| RA-NPC-00237 | House | Building | Unevaluated | 0.99 |
| RA-NPC-00246 | House | Building | Not Eligible | 0.98 |
| WA-OKC-00001 | Farmhouse | Building | Unevaluated | 0.54 |
| WA-OKC-00002 | Farmhouse | Building | Unevaluated | 0.48 |
| WA-OKC-00004 | Bridge 82804 | Structure | Unevaluated | 0.18 |
| WA-OKC-00008 | Bridge 82805 | Structure | Unevaluated | 0.18 |
| WA-OKC-00009 | Bridge 82806 | Structure | Unevaluated | 0.10 |
| WA-OKC-00010 | Bridge 82807 | Structure | Unevaluated | 0.10 |
| WA-OKC-00011 | Bridge 82808 | Structure | Unevaluated | 0.48 |
| WA-XXX-00001 | Trunk Highway 212: Stillwater to the Washington/ Ramsey County Line | Structure | Not Eligible | 0.48 |
| XX-ROD-00051 | Trunk Highway 5 | Structure | Not Eligible | 0.52 |
| XX-ROD-00098 | Trunk Highway 120 | Structure | Not Eligible | 0.52 |
| XX-RRD-CNW001 | Saint Paul, Stillwater & Taylors Falls/Chicago, Saint Paul, Minneapolis & Omaha Railroad Corridor Historic District | District | Eligible | 0.12 |
| XX-RRD-CNW003 | Minneapolis and St. Louis Railway Company/Chicago and North Western Railway Company | Structure | Unevaluated | 0.12 |

A review of the Washington County Property Viewer indicates that there are residential and commercial properties unevaluated in MnSHIP that are located within approximately 0.15 mile of the Project Area boundary, though none are located within the Project Area. The commercial properties are each less than 50 years old and include gas stations, a strip mall, a trampoline park, a Menards, a medical facility, and a 3M facility. Residential properties located within 0.15 miles of the Project Area were generally constructed between the late 1970s and the early 2000s; however, a handful of properties were also constructed between the 1940s and the 1960s. The residential properties that are over 50 years in age all appear to be located behind thick tree lines and none are located immediately adjacent to the proposed work extents or the Project Area; therefore, they have low potential to be impacted by Project activities.

In addition, the construction limits for the Project are located adjacent to County Road 14 and an interchange for Interstate 694. Soils within the construction limits appear to be entirely disturbed and therefore have no potential to contain intact archaeological deposits. No effects to historic properties are anticipated as a result of the Project; therefore, no avoidance, minimization, or mitigative measures are proposed for the Project.

## 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 setting consists primarily of undeveloped greenspace adjacent to commercial and residential properties, as well as County Road 14 and Interstate 694. There are no scenic views or vistas in or near the Project Area. Visual effects from the Project would likely consist of temporary changes during construction due to the presence and use of construction equipment and materials staging. In addition, because the Project would primarily occur underground, the permanent viewshed is not anticipated to change as a result of the Project. Due to the lack of impacts, no avoidance, minimization, or mitigative measures for visual effects are proposed for the Project.

## 17. Air

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

The Project would involve the construction of a surface water conveyance pipe that is gravity powered; therefore, no operational stationary combustion sources are anticipated with the Project. A discussion of the on- and off-road mobile source emissions associated with construction is provided in Section 17.b.

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

Construction of the Project would result in intermittent and temporary on- and off-road mobile source emissions of criteria pollutants. These emissions generally include combustion emissions from construction machinery engines, land clearing activities, excavation using a backhoe excavator or rotary wheel ditching machine, construction vehicle emissions, and various off-road mobile source emissions. These emissions would be dependent upon weather conditions, the amount of equipment at any specific location, and the period of operation required for construction at that location.

Air pollutants from the construction equipment would be limited to the immediate vicinity of the construction area and would be temporary. Measures would be taken to reduce vehicle idling to reduce emissions. Therefore, it is not anticipated that construction activities would independently cause or significantly contribute to an emission level that alters the air pollution score (including for sensitive groups) or attainment status for any of the national ambient air quality standards (NAAQS).

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

Fugitive particulate emissions would be generated from the use of paved roads during construction. Additionally, dust generated from soil disturbing activities, such as earthmoving and wind erosion associated with ROW clearing, topsoil removal, and construction would occur. The amount of dust generated would be a function of construction activity, soil type, soil moisture content, wind speed, precipitation, vehicle traffic, vehicle types, and road surface characteristics. Emissions would be greater during dry periods and in areas where fine-textured soils are subject to surface activity. If construction activities generate problematic dust levels, 3M may employ construction-related practices to control fugitive dust such as application of water on unpaved areas subject to frequent vehicle traffic, reducing the speed of vehicular traffic on unpaved roads, and covering open-bodied haul trucks and stockpiles.

Temporary emissions of VOCs and odors are anticipated at areas of the Project near the Site and would be addressed through monitoring and controls during construction in a plan to MPCA. The following mitigation techniques may be implemented individually or combined to control VOC and particulate emissions in the event that they are found to be leaving the Project are during construction activities:

- Limit the duration and quantity of exposed contaminated impacted soil
- Backfill excavated areas with clean fill as soon as possible following the excavation
- Limit work during unfavorable wind conditions (e.g. high winds, receptors downwind)

- Wet excavations or exposed soil stockpiles to suppress dust
- Load excavated soil and waste materials directly into trucks and cover for transport to the disposal facility or temporarily stockpile and cover or wet excavated materials when direct hauling is not practical
- Move work to another area of the site downwind or further from potential receptors
- Adjust locations such as excavations or truck hauling routes based on wind direction or proximity to potential receptors
- Cover excavations and stockpiles with odor suppression products or materials such as foam, mulch, clean soil, or plastic
- Pause or stop work until action levels are met, or develop alternative mitigation techniques

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

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

Identified GHG emissions consist of direct emissions generated from mobile equipment during the construction of the Project and those related to land use change. Fuel use, horsepower, and vehicle miles were estimated from similar projects. Emissions were calculated for construction equipment for both on-road and off-road use. On-road vehicle emissions are generated from haul trucks, and construction pick-up vehicles. Off-road vehicle emissions are those generated by construction equipment that would remain on the project site for the duration of the construction, including earthmoving equipment such as excavators and loaders, and the equipment necessary for fence construction (chainsaw, mower, and skid steer with mounted pole driver). GHG emissions associated with mobile source combustion during construction (including fence installation) is approximately 449 metric tons carbon dioxide equivalent ($CO_2e$) for the duration of the construction timeframe. Emission factors used to calculate emissions from construction equipment are based on the EPA Center for Corporate Climate Leadership (CCCL) Emission Factors for Greenhouse Gas Inventories. Contaminated soil would be landfilled as part of the project. GHG emissions associated with the landfilling of the contaminated soil is approximately 249 metric tons $CO_2e$.

The Project would generate minimal GHGs during operations. Annual inspection and maintenance emissions are estimated to generate less than 1 metric tons/year for the visit, inspection, incidental maintenance, and removal/disposal of sediment and debris.

The Project would convert grasslands to wetlands and forest lands to grasslands. The conversion to wetlands and grassland would reduce the natural carbon sink in the area. GHG emissions associated with temporary land use change during construction is approximately 14 metric tons $CO_2e$, while the GHG emissions associated with the land use change is approximately 0.8 metric tons $CO_2e$/year. Emission

factors were calculated for GHG emissions from land use change based on $CO_2e$ flux estimates from the EPA Draft U.S. Inventory of Greenhouse Gas Emissions and Sinks: 1990-2022.

Table 15 and Table 16 summarize the GHG emissions for the Project. Appendix E provides the detailed calculations.

**Table 14 Construction Emissions**

| Emission Source | GHG Emissions (metric tons CO2e) |
|---|---|
| Mobile Source Combustion | 448.42 |
| Fence (mobile source combustion) | 1.31 |
| Land Use Change | 14.30 |
| Off-site Waste | 249.00 |
| TOTAL | **713.04** |

**Table 15 Operations Emissions**

| Emission Source | GHG Emissions (metric tons $CO_2e$/year) |
|---|---|
| Combustion | 0.48 |
| Land Use Change | 0.81 |
| TOTAL | **1.29** |

*a. GHG Assessment*

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

3M is not proposing $CO_2e$ mitigation for this project. However, 3M Company would consider adaptive mitigation for the construction site such as:

- Reduce any unnecessary clearing and grubbing
- Maintain tree canopy when feasible
- Practice vehicle and equipment maintenance
- Carpool when possible and turn off equipment when not in use

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

The possible mitigation measures above could result in a small decrease of GHG emission. These mitigation measures were selected based on typical construction protocols.

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 anticipated operational GHG emissions from the project is 1.29 tons/year, which is less than 0.001% of the total $CO_2e$ emissions that were emitted in Minnesota in 2018. The net annual lifetime GHG emissions from the Project are very small compared to the state total, and therefore the effects from the Project on achieving the Next Generation Energy Act goals are negligible. Nonetheless, the Project is proposing a net increase in overall GHG emissions which would slightly impact Minnesota's GHG reduction goals.

## 19. Noise

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

Existing noise in the vicinity of the Project Area is typical of an industrial suburban setting. Surrounding areas consist of commercial buildings, residences, and roadways. Noise is generated primarily by local roadway traffic and Interstate 694.

Construction noise is expected to be temporary and limited to the noise generated by equipment and workers accessing the construction area. The equipment associated with the proposed Project is anticipated to include general earthmoving equipment (dozers, loaders, excavators, skid-steers, etc.), chainsaws, and trucks used to haul materials to and from the construction area. In accordance with the City of Oakdale Municipal Code Chapter 19 Section 19-4, construction activities would be conducted between the hours of 7:00 a.m. and 7:00 p.m. on weekdays or between 9:00 a.m. and 5:00 p.m. on Saturdays; no work would occur on Sundays or public holidays.

## 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 alternative transportation modes.*

Several parking spaces are located in the Project Area that area associated with commercial developments within and surrounding the Project Area. The Project would not include construction of additional parking spaces.

Daily traffic volumes on County Road 14, Geneva Avenue North, and Hadley Avenue North are estimated at 12,200, 3,150, and 12,500 average vehicles per day, respectively (based on 2017-2018 data. It is

anticipated that construction activities would generate less than 30 trips per day during peak construction activities. Generated traffic would include construction workers going to and from the job site and haul trucks transporting excavated soil to landfills. Once construction is complete, the Project would not generate additional traffic.

The Project is accessible by public transit with one bus route serving the area as well as alternative transportation modes, including walking and biking. The Project is not expected to impact public transit.

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

The Project is not anticipated to affect traffic congestion or warrant traffic improvements. However, in order to facilitate Project construction, County Road 14 and Granada Avenue North would need to be temporarily closed. County Road 14 would be closed between Granada Avenue North and Interstate 694. Granada Avenue North would need to be closed at the intersection of County Road 14 and Granada Avenue North. The bike path south of County Road 14 would also need to be temporarily closed during Project construction.

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

The Project would generate small, temporary increases in traffic for the duration of construction activities. It is expected that the contractor would follow local load restrictions and speed limits. A detour would be used to bypass County Road 14 between Granada Avenue North and Interstate 694. 3M would coordinate with the City and County to develop a detailed detour plan. The detour would be clearly marked and is anticipated to last for approximately 2 weeks.

## 21. Cumulative Potential Effects

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

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

The proposed project impact area includes the immediate vicinity surrounding the Project Area, including downstream watercourses and waterbodies. It is anticipated that construction would begin in 2026. Construction of the surface water control structure, surface water conveyance pipe, and flood retention basin is estimated to be completed by the end of 2026. The fence would be constructed in February 2026 during frozen ground conditions.

Environmental effects from the proposed project are listed below, and discussed in detail within the relevant topic areas of the EAW, avoidance, minimization, and mitigation measures are also discussed within each topic.

- Cover types: The Project would permanently convert grasslands to wetlands and forest lands to grasslands.
- Geology, soils topography, and land forms: Permanent and temporary impacts to soil resources within the construction limits during construction would occur.
- Water resources: The Project would permanently alter the existing drainage pattern from the north subwatershed by routing runoff that would enter the wetland complex south of County Road 14 and west of Hadley Avenue North to Wetland T. The drainage pattern after stormwater leaves Wetland T would not be changed by the Project. The project would result in permanent and temporary wetland impacts. During construction, there is the potential for temporary water quality/stormwater pollution due to construction. In addition, post construction, the project would reduce the discharge of PFAS in surface water from the Site which would improve the surface water quality downstream, which is the purpose of the project.
- Contamination/hazardous Materials/Wastes: The Site is part of a Superfund site. Contamination within the Site includes VOCs and PFAS. Contamination from soil disturbance during construction could result; 3M would follow MPCA soil management guidance to minimize the risk associated with earthwork activities, including transporting contaminated soil excavated from the Site to the landfill. Additional new contamination from construction could occur from spills from fuels from construction equipment.
- Fish, wildlife, and plant communities, and sensitive resources: Generally, impacts to fish, wildlife, and plant communities would be expected to be negligible. Impacts to state-protected Clinton's bullrush may occur if the species is detected onsite; impacts to the state-protected Blanding's turtle is not expected due to timing of the project.

Impacts to historic properties, visual, air, greenhouse gas emissions, noise, and transportation are expected to be negligible.

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

Several sources of information were reviewed to identify reasonably foreseeable future projects within the geographic assessment area; these include MnDOT's Metro District construction projects, plans and studies, Washington County's Five-Year Transportation Capital Improvement Plan, MetroTransit projects, VBWD projects, and the environmental review projects listed on the Minnesota Environmental Quality Board website. In addition, staff from MnDOT, the City of Oakdale, and Washington County were contacted to inquire about current planned projects within the same geographic area and timeframe as the proposed project. No reasonably foreseeable future projects for which a basis of expectation has been laid were identified at the time of publication.

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

There are no reasonably foreseeable future projects for which an expectation has been laid that could combine with the environmental effects from the proposed project within the same geographic scales and timeframe of the proposed project to create potential effects greater than those from the proposed project.

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

The Project is not anticipated to cause any additional environmental effects beyond those discussed in items 1-20.

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

**I hereby certify that:**

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

Signature Becky Horton Date May 20, 2025

Title: Project Manager