



Independent Environmental Monitor Staffing Plan

Enbridge Energy, Limited Partnership • Line 3 Replacement Project

October 2020



TABLE OF CONTENTS

INTRODUCTION	1
1.0 CONTRACTUAL ARRANGEMENTS	1
2.0 QUALIFICATIONS	2
3.0 DAILY ACTIVITIES	4
3.1 DAILY MONITORING	5
3.2 MONITORING REPORTS	6
4.0 STAFFING PLAN	7
4.1 ENBRIDGE STAFFING RECOMMENDATION.....	9
4.2 AGENCY STAFFING NEEDS	10
4.3 STAFFING CHANGES	16
4.4 DEPLOYMENT SCHEDULE	17
4.5 PERIODIC STAFFING REVIEW	17
4.6 CONSTRUCTION SCHEDULE OVERVIEW	17
4.6.1 Site Preparation and Clearing	17
4.6.2 Trench Excavation, Pipe Installation, and Backfilling.....	17
4.6.3 Waterbody Crossings and Tie-Ins	18
4.6.4 Cleanup, Final Grading, Restoration, and Mainline Hydrostatic Testing.....	18

LIST OF TABLES

Table 4.0-1	Land Use and Resources by Construction.....	8
-------------	---	---

LIST OF FIGURES

Figure 3.1-1	Example Independent Environmental Monitoring Report (2 pages)
Figure 4.0-1	Line 3 Replacement Project Spread Overview Map

ACRONYMS AND ABBREVIATIONS

Agencies	Minnesota Department of Commerce, Energy Environmental Review and Analysis; Minnesota Department of Agriculture; Minnesota Department of Natural Resources; and the Minnesota Pollution Control Agency
Agency Monitors	Lead Independent Environmental Monitors and Independent Environmental Monitors
BMP	Best Management Practice
CSW	Construction Stormwater
EI	Environmental Inspector
EMCP	Environmental Monitor Control Plan
Enbridge	Enbridge Energy, Limited Partnership
EPM	Environmental Project Manager
ESR	Environmentally Sensitive Resources
HDD	horizontal directional drill
IEM	Independent Environmental Monitor
IWP	Industrial Wastewater Permit
LEI	Lead Environmental Inspector
LIEM	Lead Independent Environmental Monitor
MDNR	Minnesota Department of Natural Resources
NHIS	Natural Heritage Information System
NPDES / SDS	National Pollutant Discharge Elimination System / State Disposal System
Project	Line 3 Replacement Project
TSS	total suspended solids
WQC	Water Quality Certification

INTRODUCTION

Enbridge Energy, Limited Partnership (“Enbridge”) developed this Line 3 Replacement Project (“Project”) Independent Environmental Monitor (“IEM”) Staffing Plan in coordination with the Minnesota Department of Commerce, Energy Environmental Review and Analysis; Minnesota Department of Agriculture; Minnesota Department of Natural Resources (“MDNR”); and the Minnesota Pollution Control Agency (collectively referred to as the “Agencies”).

The staffing plan discusses Lead Independent Environmental Monitors (“LIEMs”) and IEMs (collectively referred to as “Agency Monitors”) and provides an overview of the Agency Monitor education/experience and qualification requirements, hiring process, deployment schedule, and day-to-day responsibilities and describe the interactions and communication protocols with the Agencies; Enbridge’s Environmental Compliance Management Team; and Enbridge’s Construction Team¹ associated with the Project. Enbridge’s Avoidance and Implementation Monitoring Plan describes the roles and responsibilities of Tribal Monitors; therefore, the role of the Tribal Monitors will not be discussed further in this document. This plan covers the portion of the Project within Minnesota.

On each construction spread a LIEM will supervise an IEM team.² LIEMs, in coordination with the Agencies, will direct IEM monitoring activities. Agency Monitors will report directly to the Agencies. Agency Monitors will work in a review function to verify environmental compliance is being achieved and to assess the success of Enbridge’s compliance program. Agency Monitors act as the “eyes and ears” of the Agencies during all phases of construction through final restoration.

This Staffing Plan covers the following topics:

- **Section 1.0: Contractual Arrangements** – outlines the terms governing the employment of Agency Monitors and their dismissal/removal from the Project, and the process to hire additional IEMs.
- **Section 2.0: Qualifications** – describes the educational and experience requirements and qualifications needed to be employed as an Agency Monitor on the Project.
- **Section 3.0: Daily Activities** – defines the role of an Agency Monitor and describes the day-to-day activities required to satisfy this role. Also describes scenarios using the resolution process and how issues will be documented in the monitoring reports.
- **Section 4.0: Staffing Plan** – outlines the number of Agency Monitors by construction spread required by the Agencies and provides a schedule for Agency Monitor deployment.

1.0 CONTRACTUAL ARRANGEMENTS

The Agency Monitors will be funded by Enbridge, work independently, be under the control of the Agencies and report directly to the Agencies, not to any individual employed by Enbridge.

¹ Enbridge’s Construction Team is meant to include all Enbridge and contractor staff employed to construct the Project (pipeline and associated facilities), including the Project Director, Spread Project Managers, Construction Managers, Chief Utility Inspectors, Utility Inspectors, and contractors.

² As used in this document “construction spread” refers to 6 construction spreads (1A/1B, 2, 3, 4, and 5) unless specifically noted.

Enbridge will utilize Environmental Resources Management (ERM) as the single service provider to employ the Agency Monitors. ERM will also provide an office-based Agency Monitor coordinator, based in Minneapolis, to provide general administrative functions as well as any specific work tasks requested by the Agencies. ERM will not have any management responsibilities for the Agency Monitors. Utilizing a local, service provider with experience in agency monitoring programs will allow for an efficient hiring process to ensure IEMs can be deployed to the Project quickly prior to the start of construction and if additional staff resources are determined to be needed during construction.

LIEMs and IEMs will be selected from a pool of candidates from across the United States. Preference will be given to candidates who have worked as environmental inspectors or independent monitors in Minnesota previously and on energy sector projects. Knowledge and experience requirements for prospective candidates will be considered as set forth in Section 2.0. Once candidates are selected by Enbridge, Enbridge will provide the resumes of each candidate to the Agencies for review and concurrence. The Agencies may delegate this function to the LIEMs. Once Agency concurrence is obtained, the candidates will be employed through ERM and onboarding of Agency Monitors will be scheduled with priority given LIEMs. This onboarding will include general Enbridge health and safety training, environmental orientation, Project site-specific training, and any additional Agency training requirements.

IEMs will be added to the Project as needed should additional resources be needed to provide adequate capacity to monitor the various construction activities taking place (Section 4.0). The decision to add monitors will be made at the construction spread level by the LIEM with input from the IEMs and the Agencies. This decision will be made in consultation with Enbridge. IEM additions will be implemented by Enbridge's Environmental Project Manager ("EPM") (refer to Section 2.1 of the Environmental Monitor Control Plan ["EMCP"]). The intent of this plan is to ensure an adaptive approach whereby the Agencies have the necessary number of IEMs throughout the various stages of construction through final restoration.

LIEMs and IEMs may be removed from the Project by Enbridge's EPM should they be unable to meet the Agencies' performance expectations. IEMs will be dismissed from the Project by Enbridge's EPM when the LIEM determines that construction work areas within the construction spread are constricted to the point that IEM coverage areas significantly overlap. All such removals and dismissals must be approved the Agencies.

2.0 QUALIFICATIONS

To be considered for employment on the Project, Agency Monitors must meet the following minimum requirements and qualifications except that LIEMs shall have a commensurate level of education and experience to Lead Environmental Inspectors ("LEIs"). All Agency Monitors must successfully complete Enbridge safety, environmental, cultural awareness, and human trafficking prevention training and required drug and alcohol testing requirements prior to employment.

Minimum Qualifications

- Bachelor's degree in environmental science, natural sciences, biology, ecology, geology, soils, or other related science degree and minimum one (1) year of work experience in a similar capacity on a pipeline/utility construction project OR an equivalent combination of education and work experience in a similar capacity on a pipeline/utility construction

project. Ability to read, analyze, and interpret general technical procedures and governmental regulations.

- Ability to write detailed reports and business correspondence.
- Ability to effectively communicate verbally and present information and respond to questions from agencies, contractors, and general public.
- Ability to apply basic mathematical concepts.
- Ability to define problems, collect data, establish facts, and draw valid conclusions.
- Ability to interpret an extensive variety of technical instructions and deal with several abstract and concrete variables simultaneously.
- Ability to communicate with diverse Project stakeholders in a positive, constructive manner.
- Ability to perform field work under all field conditions, including, but not limited to, wet, cold, snowy, icy, muddy conditions in all seasons and all types of terrain.
- Knowledge of word processing, internet browsers, photo management software, and email.

Preferred Qualifications

- Training and knowledge of Minnesota's National Pollutant Elimination System ("NPDES") / State Disposal System ("SDS") Construction Stormwater ("CSW") General Permit requirements, Section 401 Water Quality Certification ("WQC"), and Minn. R. 7050.0210, Subp. 2, Nuisance Conditions Prohibited, and Minnesota Statutes 115.061 Duty to Notify; Avoiding Water Pollution.³
- Training and knowledge of agricultural drainage technology and related work experience.
- Certifications, such as state-specific wetland delineator, stormwater inspection training, and Occupational Safety and Health Administration 30.

Prior to deployment, Agency Monitors will be trained by Enbridge as described in Section 5.2 of the EMCP, and will become familiar with their roles and responsibilities, the roles and responsibilities of Enbridge's Environmental Compliance Management Team (see Section 2.0 of the EMCP), the organizational structure, reporting responsibilities, and chain of communication. The Agency Monitors will also become familiar with Enbridge's environmental compliance program by reviewing environmental plans, permits, certifications, and authorizations, including, but not limited to, the Construction Environmental Control Plan, Stormwater Pollution Prevention Plan, detail drawings, and construction alignment sheets. LIEMs will meet with the Agencies to become familiar with Agency expectations and monitoring priorities.

³ <https://www.pca.state.mn.us/sites/default/files/wq-strm2-105.pdf>

3.0 DAILY ACTIVITIES

Section 3.2 of the EMCP describes the roles and responsibilities of the IEM. The IEM's main responsibility is to monitor construction with respect to compliance with all relevant environmental permits, certifications, authorizations, and plan requirements. IEMs will work on the construction right-of-way to observe and document implementation of the required environmental control measures on behalf of the Agencies.

The Agencies have determined that a LIEM shall be deployed for each construction spread. LIEMs are not discussed as part of the EMCP; however, LIEMs will serve a similar function to the IEMs as the LEI does to the EIs (Section 2.4.1 of the EMCP). The IEMs will report directly to the LIEMs. The LIEMs shall report directly to the Agencies. The LIEMs will be responsible for providing interpretation and clarification to Enbridge's Environmental Inspection Team (see Section 2.4 of the EMCP) regarding specific, agency-related issues or conditions included in issued permits, certifications, and authorizations. Duties include but are not limited to:

- Assigning IEMs to appropriate construction areas or activities;
- Relaying Agency expectations and monitoring priorities to the IEMs;
- Communicate daily with Agencies and serve as the point of contact;
- Communicate daily with other LIEMs to assess the overall success of the Agency monitoring program;
- Synthesizing daily reports prepared by the IEMs into a "Daily Report to the Agencies (this report will highlight agency-specific issues found in the IEMs daily monitoring reports);
- Recommending IEM staffing changes to the Agencies to maintain an adequate capacity to cover their monitoring activities as detailed in Section 4.2; and
- Approving IEM candidates if so delegated by the Agencies.

Additionally, LIEMs will conduct IEM activities should time allow.

LIEMs will coordinate with Agency staff to direct IEMs monitoring activities. The LIEMs will also consider input from Enbridge's LEI when making this determination. Important factors in this determination include the construction activity taking place at the time of monitoring and follow-up locations based on previous monitoring or inspections by Agency Monitors or Enbridge's Environmental Inspection Team, respectively.

Agency Monitors and Enbridge's Environmental Inspection Team will coordinate with each other, either in person or via telephone, throughout the day to allow for real time exchange of information on the status of construction and discussion of construction events scheduled over the next 2 or 3 days. Agency Monitors may monitor construction activities independently or with members of Enbridge's Environmental Inspection Team. Agency Monitors will be able to access all construction workspace using currently identified access points and planned travel lanes. UTV or access by foot will be conducted in saturated/inundated areas as needed. If additional access or equipment is needed, the request will be evaluated on a case-by-case basis.

Agency Monitors may order the halt of a specific construction activity (stop work authority) that is not in compliance with relevant environmental plans, permits, certifications, and authorizations (see Section 5.0 of the EMCP). When an Agency Monitor observes a condition that is not in compliance with applicable permits, certifications, and authorizations, they will contact the LEI who will, in turn, immediately contact Enbridge Construction Management who will order the contractor to suspend activities until compliance is once again achieved. Otherwise, Agency

Monitors will have no authority to direct construction activities, except as a result of an urgent environmental situation in which an environmental resource is or has the potential to be harmed or contaminated in real time. In the unlikely event that an IEM is unable to reach the LEI, the IEM may contact any EI, who will then immediately contact Enbridge Construction Management as otherwise described above.

3.1 DAILY MONITORING

Agency Monitors will be responsible for preparing daily compliance monitoring reports via the Fulcrum Reporting System (as discussed in Section 5.3 of the EMCP). Daily reports include a summary of the work completed and any environmental compliance issues identified (see Figure 3.1-1). Additional documents such as, photographs, and minutes from agency field meetings (on-site meetings held at the request of Agency Monitors or Agency representatives) will be provided in addition to daily reports.

Agency Monitors are charged with monitoring, communicating, and reporting their activities and observations, as outlined below.

- On a daily basis, the Agency Monitor will monitor construction activities occurring in and around resources regulated by the Agencies for consistency with the applicable environmental plans, permits, certifications, and authorizations. The Agency Monitor will create the necessary number of reports in the Fulcrum Reporting System to best communicate monitoring activities that occurred throughout the day. The LIEM will create a daily report to the agencies highlighting the issues most relevant to the Agencies. Reporting is described in greater detail in Section 3.2.
- If the Agency Monitor identifies a potential compliance issue, the Agency Monitor will communicate and collaboratively work to resolve the issue with Enbridge's Environmental Inspection Team to avoid adverse effects to resources.
- If Enbridge's Construction Team is in the process of performing an action that may result in non-compliance, the Agency Monitor will communicate with Enbridge's Environmental Inspection Team who will direct the contractor accordingly. The Agency Monitor has the authority to order the halt of a specific non-compliance activity.
- At the Agencies' direction, the LIEM will contact the appropriate Agency to inform the Agency representative of the site conditions when compliance-related issues are identified. At minimum the LIEM will contact the Agency representative when a non-compliance is observed. The LIEM will use the Fulcrum Reporting System to document phone calls and necessary follow-up actions determined as a result of those communications.
- If a deviation from any of the Project's environmental plans, permits, certifications, or authorizations conditions appears to have occurred, or have the potential to occur, the Agency Monitors will immediately inform Enbridge's Environmental Inspection Team.
- The LIEM will facilitate the review and/or processing of field adjustments or modifications (as discussed in Section 6.0 of the EMCP) and will coordinate and work with other agency inspectors and/or agency representatives.

- Enbridge's Environmental Inspection Team will immediately communicate any non-compliance or potential non-compliance to the appropriate Agency Monitors.
- Enbridge's Environmental Inspection Team will immediately communicate any deviation from any of the Project's environmental plans, permits, certifications, or authorizations that appears to have occurred or has the potential to occur to the appropriate Agency Monitors.

3.2 MONITORING REPORTS

An example draft IEM reporting form is attached in Figure 3.1-1. Enbridge will revise this form as appropriate to ensure the final version satisfactorily addresses respective Agency needs. There are five basic report types that IEMs will generate in the Fulcrum Reporting System. These reports will assign a status level to activities observed in the field during monitoring activities. These status levels correspond to an issue resolution process, which is how IEMs will address compliance issues. The different status levels include:

- Acceptable
- Communication
- Problem Area
- Unacceptable
- Issue Resolution

Acceptable: When activities are observed ***to be in compliance*** with the Project's environmental plans, permits, certifications, and authorizations an "acceptable" report will be generated. No notifications are necessary for these observations.

Communication: When activities are observed that ***will not immediately result in an unacceptable condition*** and require minimal effort to resolve by the Enbridge's Construction Team, a "communication" report will be generated. For "communication" level issues, the IEM will notify the LIEM and Enbridge's LEI and provide the following information:

- Description and location of the issue;
- Corrective recommendation; and
- Description of the possible ramifications of issue not being addressed.

This information should also be included in the daily report.

Once the Enbridge Construction Team has implemented corrective actions, the issue will be detailed as addressed in an "acceptable" report assuming the corrective actions meet the Agency Monitor's expectations. Communication level issues can typically be handled by recommendations made at the field level. This category is expected to make up most of the issues an Agency Monitor will encounter daily.

In addition, meetings and/or discussions with Project personnel and stakeholders are also captured under the "communication" status level.

Problem Area: When activities are observed that ***will result in an unacceptable condition if not immediately addressed*** a "problem area" report will be generated. Problem area issues have not resulted in adverse impacts on environmental resources, but damage to an environmental resource would likely occur should corrective actions not be taken in the near

future. For “problem area” level issues, the IEM will immediately notify the LIEM and Enbridge’s LEI and provide the following information:

- Description and location of the issue;
- Corrective recommendation;
- Description of the possible ramifications of issue not being addressed; and
- Recommendations to prevent the issue from occurring in the future.

This information should also be provided in the IEMs daily report, and the LIEM’s daily report to the Agencies.

Problem area issues may require coordination with Enbridge’s Compliance Management and Construction teams. The IEM may also denote in their report that the issue has outstanding actions that require follow-up. If corrective actions have been completed by the time the IEM report is submitting their report, the IEM will verify and then close out the report by noting no further actions are required. If corrective actions remain outstanding, the IEM will identify the date the issue is expected to be resolved.

Unacceptable: When activities are observed that are ***out of compliance with a condition of any environmental plan, permit, certification, or authorization*** an “unacceptable” report will be generated. For “unacceptable” level issues, the IEM will immediately notify the LIEM and Enbridge’s LEI and stop work orders will be issued through the LEI and Enbridge Construction Management as necessary to prevent damage to environmental resources and to mitigate damages that have occurred prior to inspection. Should an Enbridge Environmental Inspector (“EI”) observe the unacceptable condition, they will immediately notify the LIEM who will visit the site and document the issue in the LIEM daily report to the agencies. The LEI and LIEM will confer to ensure the condition is being appropriately addressed. Unacceptable reports may be generated by IEMs or Enbridge EIs—depending on who discovers the unacceptable condition. Should the EI discover the unacceptable condition the LIEM will generate a communication report regarding the unacceptable report to ensure Agencies receive notice of all unacceptable reports. If corrective actions have been completed by the time the LIEM report is submitting their report, the LIEM will verify and then close out the report by noting no further actions are required. If corrective actions remain outstanding, the LIEM will identify the date the issue is expected to be resolved.

Issue Resolution: Once corrective actions are implemented the Agency Monitors will document the corrective action and date of closure by creating an “issue resolution” report type that links their original “problem area” or “unacceptable” report as a reference.

4.0 STAFFING PLAN

There are six construction spreads that will be constructed concurrently on this Project (refer to Figure 4.0-1). In determining the baseline number of IEMs to be deployed per construction spread, the Agencies—in consultation with Enbridge—have considered several factors including linear mileage from spread start to end, accessibility, land use activities, landownership, number of aboveground facilities, number of waterbody crossings and crossing techniques, mileage of wetlands and crossing techniques, number of sensitive waters⁴ crossed, number of surface waters

⁴ Sensitive Waters as identified in the MPCA spreadsheet provided to the company.

with site-specific restoration plans, and number of environmentally sensitive resources⁵ (ESR) crossed, which are described in Table 4.0-1. This baseline number of IEMs is to be considered a starting point. Staffing changes must occur at any time as recommended by the LIEMs and directed by the Agencies. Section 4.1 discusses Enbridge's staffing recommendations. Section 4.2 outlines Agency staffing needs.

**Table 4.0-1
Land Use and Resources by Construction Spread**

Description	Spread 1A	Spread 1B	Spread 2	Spread 3	Spread 4	Spread 5
Total Mileage	48	49	78	67	44	44
Miles of MDNR Lands	0	0	1.4	6.7	25.7	1.8
Miles of Tribal Lands	0	0	0	0	0	13.0
Number of New Temporary Access Roads Needed	7	7	30	35	56	31
Number of ESRs	7	7	7	18	25	0
Percent Land Use Type						
Agricultural	88	74	35	15	4	19
Developed	4	4	2	1	<1	4
Forested	4	9	47	69	52	38
Wetlands	3	12	13	14	43	38
Waterbodies	<1	<1	<1	<1	<1	<1
Other	<1	<1	2	1	<1	<1
Mileage of Wetland Crossed by Crossing Technique						
Wetlands	2.7	7.4	13.0	12.7	22.8	20.8
Public Water Crossings (subset of total mileage of wetlands)	0	1	2	3	2	0
<i>Standard Open Cut</i>	2.1	7.1	11.6	11.6	22.2	20.4
<i>Push-Pull</i>	0.0	0.0	0.1	0.1	0.3	0.0
<i>Bore Method</i>	0.1	0.1	0.1	0.0	0.1	0.2
<i>HDD Method</i>	0.4	0.2	1.2	1.0	0.3	0.3
Number of Waterbodies Crossed by Crossing Technique						
Waterbodies	46	59	38	31	23	29
Public Water Crossings (subset of total number of waterbodies)	7	4	20	13	6	7
<i>Wet Open Cut</i>	0	0	0	0	1	0
<i>Push-Pull</i>	0	0	0	0	1	0
<i>Dry (isolated) Method</i>	32	47	28	16	10	26
<i>Modified Dry Method</i>	0	0	3	8	10	2
<i>Bore Method</i>	10	9	3	0	0	0
<i>HDD Method</i>	4	3	4	7	2	1
Number of Sensitive Waterbodies Crossed by Crossing Technique						
Waterbodies	3	6	12	23	19	5
Public Water Crossings (subset of total number of waterbodies)	3	3	11	12	6	4
<i>Wet Open Cut</i>	0	0	0	0	0	0
<i>Push-Pull</i>	0	0	0	0	1	0

⁵ Environmentally sensitive resources include the Gully 30 and Chester 24 calcareous fens, Spring Brook, LaSalle Creek,, locations of known federally protected or state-listed species, sensitive plant communities (including wild rice), eligible archaeological or historical resources, Tribal resources of concern where unique BMPs or conservation measures are required that differ from the standard construction methods and practices described in Enbridge's EPP.

ENBRIDGE ENERGY, LIMITED PARTNERSHIP
INDEPENDENT ENVIRONMENTAL MONITOR STAFFING PLAN
OCTOBER 2020 (REV 3)

Description	Spread 1A	Spread 1B	Spread 2	Spread 3	Spread 4	Spread 5
<i>Dry (isolated) Method</i>	1	3	4	9	6	2
<i>Modified Dry Method</i>	0	0	3	7	10	2
<i>Bore Method</i>	0	0	1	0	0	0
<i>HDD Method</i>	2	3	4	7	2	1
Number of Sensitive Wetlands Crossed by Crossing Technique						
Wetlands	1	1	3	9	3	7
Public Water Crossings (subset of total number of wetlands)	0	1	1	1	0	0
<i>Standard Open Cut</i>	0	1	3	9	3	6
<i>Push-Pull</i>	0	0	0	0	0	0
<i>Bore Method</i>	0	0	0	0	0	1
<i>HDD Method</i>	1	0	0	0	0	0
Number of Surface Waters with Site-Specific Restoration Plans						
Waterbodies	3	5	10	6	15	5
Wetlands	0	0	1	2	18	4
Number of Contractor Yards, Clearbrook Terminal, Pump Stations, and Pipeline Maintenance Shops						
Contractor Yards	1	2	5	6	6	5
Clearbrook Terminal and Pump Stations	2	1	2	1	1	1
Pipeline Maintenance Shops	0	0	0	1	1	0
Estimated number of Dewatering Discharges						
Dewatering Discharge to Upland Areas	206	244	493	529	143	165
Dewatering Discharge to Wetlands	3	5	7	5	68	73
Number and Type of Mainline Hydrostatic Testing Discharges						
Land Application Higher Volume Discharges (greater than 2 days)	2	2	5	3	2	0
Land Application Lower Volume Discharges (less than 2 days)	0	0	0	0	0	0
Surface Water Discharges to Wild Rice Waters	1	4	7	5	0	2
Surface Water Discharges to non-wild rice waters	5	0	2	1	6	4
Number and Type of HDD Hydrostatic Testing Discharges						
Land Application Higher Volume Discharges (greater than 2 days)	0	0	0	0	0	0
Land Application Lower Volume Discharges (less than 2 days)	4	2	3	8	2	1
Surface Water Discharges to Wild Rice Waters	2	4	4	10	0	0
Surface Water Discharges to non-wild rice waters	6	0	0	3	4	1
Number of IEMs						
Enbridge-recommended # of Projected IEMs	1	2	2	2	2	2
Agency-required # of IEMS	4	4	4	4	4	4

4.1 ENBRIDGE STAFFING RECOMMENDATION

Enbridge split Spread 1 into 2 shorter spreads (Spread 1A and Spread 1B) in September 2020 to allow construction to proceed simultaneously on these new segments that are approximately 48 miles and 49 miles, in length. Both of these spreads cross mostly agricultural land use (88 and 74

percent, respectively), with limited forested vegetation (4 and 9 percent, respectively), and the majority of the waterbodies crossed in these spreads tend to be smaller agricultural ditches and ephemeral waterbodies. Due to the large agricultural component in these spreads, Enbridge recommends having one IEM with experience in pipeline construction through agricultural lands to focus on compliance with the Agricultural Protection Plan. There are fewer wetland and waterbody crossings, and fewer sensitive water crossings on Spread 1A; therefore, Enbridge proposes **one IEM** to be deployed for Spread 1A at the start of construction. A second IEM is recommended to focus on the other elements occurring on Spread 1B, including the crossing of the Gully 30 fen. Therefore, in total Enbridge recommends **two IEMs** to be deployed at Spread 1B at the start Project construction.

Spreads 2 and 3 are 78 and 67 miles long, respectively. There is less agricultural land use in these spreads relative to Spreads 1A/1B and these spreads have more forested vegetation (47 percent and 69 percent, for Spreads 2 and 3, respectively). These spreads also cross a number of more substantial (i.e., wider) waterbodies, including sensitive waterbodies, and there are more miles of wetland crossings relative to Spreads 1A/1B. These spreads also cross approximately 8.1 miles of MDNR lands (1.4 miles and 6.7 miles, respectively), which brings additional permitting and compliance monitoring obligations. After considering this data, Enbridge recommends **two IEMs to be placed at each of these spreads** in light of the number of resources compared to the manageable geographic size of the spreads.

Spreads 4 and 5 are the shortest spreads (44 miles each); however, these spreads are in the most remote portion of the Project and consist of the highest percentage of forested vegetation and wetlands. Approximately 27.5 miles of MDNR lands are also crossed by these spreads, and the Project crosses the Fond du Lac Band of Lake Superior Chippewa Reservation for approximately 13.0 miles in Spread 5, both of which bring additional permitting and compliance monitoring obligations. Although these are typically manageable distances for one IEM to cover, the wetland and waterbody crossings on these spreads are more complex, and include several sensitive waters with site-specific restoration plans, and there are additional permitting requirements. For that reason, Enbridge recommends **two IEMs be placed at each of these spreads**.

4.2 AGENCY STAFFING NEEDS

Section 4.4.3 of the pipeline route permit requires that Enbridge identify one or more IEM per construction spread on behalf of the Agencies to implement the roles and responsibilities outlined in the EMCP. Enbridge has coordinated with the Agencies on IEM staffing. Based on this coordination, Enbridge committed to provide at least 2 IEMs per construction spread for a total of at least 10 IEMs for the Project in the EMCP. Enbridge also agreed in the EMCP to ensure that an appropriate number of Agency Monitors are available throughout Project construction and restoration (Section 3.2 of the EMCP).

The Agencies considered Enbridge's recommendations provided in Section 4.1; however, the **Agencies have determined that a baseline number of 1 LIEM and 3 IEMs per construction spread, for a total of 6 LIEMs and 18 IEMs for the Project, is necessary and will be required.** In addition, additional IEMs (beyond this baseline number) will likely need to be deployed on an as-needed basis to monitor the specific construction activities identified below.

When a LIEM determines that additional IEMs (beyond the baseline requirement) are needed to ensure monitor coverage of the below-listed activities, staffing changes must be initiated as

outlined in Section 4.3. Alternatively, with the concurrence of the Agencies, the LIEMs may temporarily transfer IEMs between construction spreads to provide adequate monitoring coverage. Further, the Agencies, in consultation with the LIEMs, may desire a number of IEMs be trained and working exclusively on ensuring compliance with specific agency permits, certifications, etc. This type of exclusive agency monitor may move between construction spreads as needed to provide adequate monitoring coverage.

The Agencies require the following specific construction activities be monitored:

MDA

- Treatment of agricultural soils, which includes but is not limited to, excavation and segregation of topsoil and subsoil during trenching work, backfilling the trench in a manner that maintains original topsoil depth, any pre-construction or post-construction grading must maintain original topsoil depth, soil compaction must be avoided and/or mitigated, soils cannot be contaminated with construction debris or chemical pollutants. All of this is covered in detail within the Agricultural Protection Plan.
- Treatment of agricultural drainage systems – this item includes both inground drainage, e.g., drain tiles, and surface drainage including county drainage ditches and existing topography that allows for surface drainage. Again, all of this is covered in the APP.

EERA

- No specific construction activities; concerned with general route permit compliance.

MDNR

- Mainline construction on state land:
 - Depth of cover in areas that deviate from standard 4 feet
 - Beaver dams
 - Open trench timing (including storm events)
 - Timber management
 - Natural Heritage Information System ("NHIS") Review and Avoidance Plan conditions
 - Special conditions associated with the Licenses to Cross Lands, or Long- and Short-term Leases
- Construction in and near Gully 30, as outlined in the Gully 30 Fen Management Plan
- Trenched water crossing of public waters (basins, watercourses and wetlands)
- HDD crossings on public waters (basins, watercourses and wetlands)
- Water appropriation installations (pumping rates and flow data)
- Trench dewatering activities
- Willow River Bridge installation
- Invasive species management on state lands and at infested waters
- Long- and short-term Lease conditions (access, infiltration, water access)
- Peatland/Wetland construction in non-winter/frozen conditions
- Wildlife management - open trench, entanglement
- Construction matting removal
- Recreation management

- Restoration of public waters (basins, watercourses and wetlands)
- Restoration of state land
 - Restoration of peatlands/wetlands
 - Temporary road impacts restorations
- Blasting activities

MPCA

NPDES / SDS CSW General Permit

The specific areas and activities that IEMs will need to monitor for compliance with the CSW permit include:

- 8 pumping stations – IEMs need to ensure Enbridge is using and maintaining erosion and sediment control Best Management Practices (“BMPs”) as required during the construction activities associated with the pumping stations and until vegetation is established. Further, the IEMs need to ensure Enbridge is conducting the required inspections of the site and maintaining the BMPs after 0.5 inches of rainfall in 24 hours.
- 2 pipeline maintenance shops – same as above (during construction activities and until vegetation established, and after 0.5 inches of rainfall).
- 25 to 35 (possibly more) Contractor Yards associated with the Project. IEMs need to ensure no violations of applicable CSW Permit conditions are occurring at these locations.
- The six linear spreads themselves – the stormwater erosion and sediment control BMPs must be installed, inspected and maintained by Enbridge in accordance with the CSW Permit. This includes inspection and maintenance of the BMPs after rain events of over 0.5 inches in 24 hours. IEMs will need monitor that Enbridge is complying with the permit requirements at various times throughout each spread, and especially after large rain events.
- Construction site dewatering from upland areas must not create nuisance conditions to receiving waters (Minn. R. 7050.0210). The CSW Permit requires that the dewatering discharges be visually checked by Enbridge. IEMs must inspect these areas and discharge activities to ensure compliance with the permit and applicable water quality standards. Further, Enbridge’s need to dewater will depend on the season and the amount of rainfall. During a wet rainy season, for example, Enbridge will likely need to dewater at more locations, which, in turn, will require more IEM monitoring to ensure compliance.
- In addition, wintertime construction activities can result in crowning and subsidence issues, which the IEMs must ensure Enbridge is monitoring and repairing correctly during spring and early summer.

The need for IEMs to monitor the required activities governed by the CSW permit will be highly variable based on weather and how much area in each spread needs to be inspected. For example, if the majority of the pipeline will be constructed during winter, it will not be possible for those areas to be revegetated until spring. As a result, the IEMs will need to ensure required erosion and sediment control BMPs are installed and maintained correctly throughout winter and into spring on a less frequent basis, such as after a winter thaw or a winter time rain event, to ensure no sediment from upland areas discharges to surface waters. But wintertime construction

also means that all of the disturbed areas cannot be revegetated until spring. So, it is imperative that IEMs then ensure the BMPs are working as required during spring rain events until all exposed areas are revegetated. Alternatively, if construction activities will take place during spring and summer, and dependent upon the frequency and type of rain events, more frequent attention will need to be paid to the installation and maintenance of all erosion prevention and sediment control BMPs. Conceivably, during wetter months, depending upon the amount of disturbed soil that is not yet revegetated, the MPCA estimates it might take two IEMS per spread on a daily basis to monitor for compliance with the CSW Permit requirements alone.

Section 401 WQC

The specific areas and activities that IEMs will need to monitor for compliance with the Section 401 WQC include the following:

- All activities associated with HDD crossings, to ensure required procedures and plans are being followed and to monitor for inadvertent drilling mud releases. Further, IEM must ensure only MPCA-approved drilling muds are being used.
- Dewatering discharges to wetlands to verify all required procedures are followed. IEMs will need to monitor these activities at least once every 3-4 hours throughout the duration of the dewatering process.
- Monitoring sensitive water crossings to ensure the following:
 - In-water BMPs are in-place and being maintained, as required.
 - Soil/sediments are segregated as planned and as stated in the EPP.
 - The work performed provides a minimum of 48" of cover over the pipe below the bottom of water resource substrate, as required.
 - The crossing method used is in accordance with applicable plans and authorized by the Section 401 WQC, and transport of off-site sediment is contained.
 - Transport of invasive plant species propagules (seeds and vegetative structures) is limited and conforms to the Invasive and Noxious Species Management Plan.
 - Equipment traffic movement over mats is well planned and will minimize compaction to the sensitive water to the extent practicable.
 - Trench breakers are being installed properly, the sand used for the trench breakers conforms with the Section 401 WQC conditions, and no foam products must be used to create trench breakers outside of the external boundaries of the Fond du Lac Band of Lake Superior Chippewa Reservation.
 - Grading and stabilization is undertaken, as required, to correct elevations.
- Verifying the construction workspace conforms to planned boundaries, and survey markers are maintained as described in the EPP and required in the Section 401 WQC.
- Monitoring the waterbody crossing methods at non-sensitive waterbody crossings to ensure they are implemented in accordance with applicable plans, procedures, and applicable 401 WQC conditions.
- Observing the extent of open trench in a spread at any one time, keeping track of forecasted weather and informing cohorts accordingly, and providing daily reports.

As with the CSW Permit, the number of IEMs that the MPCA will need available to monitor the construction activities for compliance with the Section 401 WQC will be highly variable. In particular, it will depend on the number and type of Section 401 WQC-regulated construction

activities that Enbridge will conduct simultaneously within each spread, together with the weather and site conditions.

NPDES/SDS Industrial Wastewater Permit

The specific areas and activities that IEMs will need to monitor for compliance with the NPDES/SDS Industrial Wastewater Permit ("IWP") include the following:

- **Land Application Sites.** The IWP authorizes Enbridge to use land application sites for the infiltration of hydrostatic waters, provided certain site-specific criteria are met. As specified in the IWP, Enbridge must first re-evaluate the authorized discharge requirements using site-specific information at the time of proposed discharge to the infiltration areas. Recent and anticipated weather will produce conditions at the site that must be considered in the final design of the facility at the time the infiltration is going to be conducted. This time sensitive re-evaluation will require IEM oversight, given how there are several points in the process that should be subject to inspection. The land application sites must be re-evaluated to ensure proper design, incorporate existing site conditions, and make any necessary adjustments to the discharge prior to starting, and potentially during, the discharge events. In certain circumstances (e.g., frozen soil conditions) the existing site conditions will preclude the use of the land application site for infiltration of hydrostatic waters. In addition, the process requires site closure verification following completion of discharge.

Specifically, the IEMs must monitor the following activities related to the IWP Land Application sites:

Pre-discharge Site Evaluation and Final Discharge Design (all land application sites):

- Soil Evaluations: Ensure Enbridge is conducting the required soil borings to confirm soil types, groundwater elevations; soil saturation; site topography; vegetation; no frozen soil conditions; and other required site-specific land conditions within a short time prior to the proposed discharge.
- Final Site Design: Based upon the soil evaluations above, ensure Enbridge then completes and reports the following final design at the land application site:
 - Location and number of strawbale discharge structures.
 - BMPs needed and their placement in order to control discharge flows and protect site vegetation and conditions.

Active Discharge Inspection/Monitoring: During actual discharge to the land application facility the following items are in need of inspection and verification:

- System design treatment and discharge controls are not being exceeded. This is to assure that the surface discharges are not going beyond the design infiltration area and establishing that the flows are not flowing to a surface water.

- Precipitation related inspections. Discharges are not occurring during rainfall events. Precipitation related run-on waters are not occurring on the infiltration areas. Discharges are not co-mingling with down slope storm discharges so as to present a risk of discharge to a surface water. Adequate infiltration soil conditions are present following precipitation event(s).
- Vegetation remains viable and soil rills or gullies are not being created.
- Downgradient flow Inspections: The inspectors need to travel down to the end of the infiltration BMPs at all points where a potential concentrated flow could discharge from the infiltration area due to an exceedance of the infiltration area capacity. And if they may have occurred, to determine if the flows have comingled with stormwater flows, or entered a surface water(s).

High Volume Sites-Special Needs:

- There are 5 mainline hydrostatic waters land application sites where it is anticipated to require > 2 days of design-based discharge flows for the infiltration. These sites need a high level of IEM oversight due to the operator needing to assure discharges are not exceeding soil infiltration capacity. Sites that will require a minimum of more than 2 days in order to infiltrate the anticipated discharge will require repeated inspections as the long-term infiltration capacity of soils is difficult to estimate. These additional inspections are necessary to confirm that the application rates are not exceeding the soil infiltration capacity and discharge flows are being adjusted as needed to remain below the soil infiltration capacities. Adjustments to discharges may include the need to conduct alternating discharge/rest periods as needed.

Site Closure: Following the completion of the discharge at the land application site, the site must then be cleared of treatment and discharge BMP structures. Any damage to the site vegetation must be re-established to pre-discharge conditions.

- **Surface Water Discharge Sites.** Discharges to surface waters (stream, river, lake) are also in need of monitoring at several stages of the process. Below is an outline and bulleted items that identify the necessary IEM monitoring/oversight for this activity.

Discharge Treatment and Control Structures:

- Hydrotest water must be sampled and tested for turbidity and total suspended solids ("TSS") as the pipes are being filled for the hydrotest as identified in the IWP.
- Flow monitors are installed and are continuously working.
- Treatment units are operating as permitted.
- Color monitoring is occurring at a minimum two times per day, and these events are being documented as required by the permit.
- Additional parameter monitoring is occurring as required in the permit.

- Wild Rice Related Discharges: If discharges are occurring during the restrictive discharge period, then an inspection of the adequacy of the control of the discharge rate is being maintained so as to not exceed the water level change restriction.

Discharge Structures: Those structures placed within the receiving stream are to be properly designed and placed so that the discharge flows will not produce scour of the receiving water's bottom.

- Discharge structure is properly designed and placed to accommodate existing depth and flow of the receiving water at the time of discharge.
- Adequate bottom protection is in place and scour is not evident in the downstream flows.

Surface Water Site Closure: Following the discharge events at each site, the site must be properly closed and restored to pre-existing conditions.

- Verification of site conditions following closure.

As with the MPCA CSW Permit, the number of IEMs that the MPCA will need available to monitor the construction activities for compliance with the IWP will also be highly variable. In particular, it will depend on the number and type of hydrostatic discharges occurring simultaneously within each spread, weather and site-specific conditions, stream flow, time of year, site accessibility and other variables.

4.3 STAFFING CHANGES

Staffing changes will likely occur. These changes will increase or decrease the number of IEMs deployed. At no time shall the number of Agency Monitors fall below 1 LIEM per construction spread. Enbridge will be responsible for providing Agency Monitors and Agency points of contact with a "plan of the day" and "plan of the week" to allow for appropriate IEM coverage and placement. Moreover, Enbridge will be responsible for ensuring the Agencies are provided advance notice beyond 1 week to allow for acquisition of additional IEMs when it is necessary to increase the number of IEMs to allow for adequate monitoring based on the number and location of specific construction activities occurring. This long-term forecasting will generally be accomplished through close coordination with the LIEMs and LEIs.

All staffing changes will be made at the sole discretion of the LIEM, in line with the Agencies' expectations. The LIEM will ensure sufficient IEM coverage, and discuss all staffing needs with the Agencies. Proposed staffing changes will be provided to the EPM for input. The EPM will make a recommendation about the staffing change within 24 hours. After considering input from Enbridge, the LIEM—after coordinating with the Agencies—will either: 1) formally request the EPM initiate the staffing change; 2) formally request the EPM initiate a modified staffing change; or 3) informally inform the EPM a staffing change is no longer needed. The EPM will initiate all changes immediately. Enbridge has a staffing agency that has contracts with several service providers in order to identify and mobilize additional IEMs in a timely manner. Additional IEMs will be vetted and approved by the LIEM as described in Section 1.0.

4.4 DEPLOYMENT SCHEDULE

Once selected and approved by the Agency, IEMs will mobilize to the Project typically a minimum of 2 weeks prior to the construction start date. LIEMs will mobilize to the Project approximately 2 to 4 weeks prior to the construction start date. This schedule accommodates the training requirements described in Section 5.2 of the EMCP and provide sufficient time for the Agency Monitors to familiarize themselves with the Project-related documents, organizational structure, and monitoring and communication protocols described in Section 3.0. In addition, this schedule will allow the necessary time for Agency Monitors to visit select resource locations along the Project route and for LIEMs to meet with the agency points of contact.

4.5 PERIODIC STAFFING REVIEW

The Agencies and Enbridge will formally review the number of IEMs in the field at regular intervals (e.g., monthly while construction activity is occurring) to determine if staffing changes are needed. Staffing changes may result outside of this review process. The EPM will initiate all changes immediately.

4.6 CONSTRUCTION SCHEDULE OVERVIEW

4.6.1 Site Preparation and Clearing

Construction will proceed in a sequential and linear fashion starting with preparation of the construction workspace, clearing, access road development, and installation of erosion and sediment control BMPs. Progress is anticipated to proceed more rapidly on the western end of the Project vs. the eastern end based on land use, topography, and vegetation. Construction pace by spread is estimated as follows:

- Spreads 1A/1B: 1.0 mile per day
- Spread 2: 0.8 mile per day
- Spread 3: 0.7 mile per day
- Spread 4: 0.5 mile per day
- Spread 5: 0.4 mile per day

4.6.2 Trench Excavation, Pipe Installation, and Backfilling

Grading/topsoil segregation, trench excavation, pipe installation, and rough grading will occur after initial site preparation and clearing and a slightly slower pace. The timing of these activities is dependent upon the construction start date and agency-required timing restrictions; for example, timing restrictions associated with wetlands or requirements to conduct winter construction. Construction pace for these activities is estimated as follows:

- Spreads 1A/1B: 0.5 mile per day
- Spread 2: 0.4 mile per day
- Spread 3: 0.5 mile per day
- Spread 4: 0.4 mile per day
- Spread 5: 0.3 mile per day

4.6.3 Waterbody Crossings and Tie-Ins

Trench waterbody crossings are anticipated to occur at a rate of 3 to 5 crossings per day on each spread. Again, the timing of each crossing will be influenced by the construction start date and agency-required timing restrictions, such as the MDNR in-water work exclusions. Enbridge will work with the MDNR and Minnesota Pollution Control Agency to determine the timing of horizontal directional drill (“HDD”) crossings as required by certificate and permit conditions. Enbridge is currently proposing to conduct HDDs during frozen and non-frozen conditions concurrently on Spreads 1 through 4. The exact schedule for the HDDs and associated HDD hydrostatic pre-tests has not been established; however, up to five HDDs could occur on any one spread simultaneously.

Tie-in crews will follow the installation of the pipe at transportation infrastructure, wetlands, and waterbodies an approximate pace of 0.3 to 0.5 mile per day per spread.

4.6.4 Cleanup, Final Grading, Restoration, and Mainline Hydrostatic Testing

Cleanup, final grading, and restoration will be the last process to occur following pipeline installation and tie-ins. The pace for these activities is estimated as follows:

- Spreads 1A/1B: 1.0 mile per day
- Spread 2: 0.9 mile per day
- Spread 3: 0.6 mile per day
- Spread 4: 0.6 mile per day
- Spread 5: 0.5 mile per day

Mainline hydrostatic testing activities will occur around the same time as cleanup, final grading, and restoration, with mainline testing occurring on all spreads simultaneously. The exact schedule for the mainline hydrostatic tests has not been established; however, up to two mainline hydrostatic tests could occur on any one spread simultaneously.

FIGURES

Figure 3.1-1. Example Independent Environmental Monitoring Report



Independent Environmental Monitoring Report Line 3 Replacement Project

Report Summary

Status	■ Problem Area
Location	47.977924, -96.123838
Report ID	2020-06-24-T1117JH
Environmental Monitor	Jeff Hansen
Date	June 24, 2020
Project Facility	Mainline► Spread 2
County	Red Lake
MP Start	1032.2
MP End	1032.3
Station Start	
Station End	

Issue Summary

Enbridge Representative Notified	Jim James, EI
Agency Representative Notified	Dave Thomas, MPCA
Recommended/Proposed Corrective Action	Install redundant controls.
Are Corrective Actions Still Outstanding?	Yes
Date Corrective Actions are Expected to be Resolved	June 26, 2020

Monitoring Details

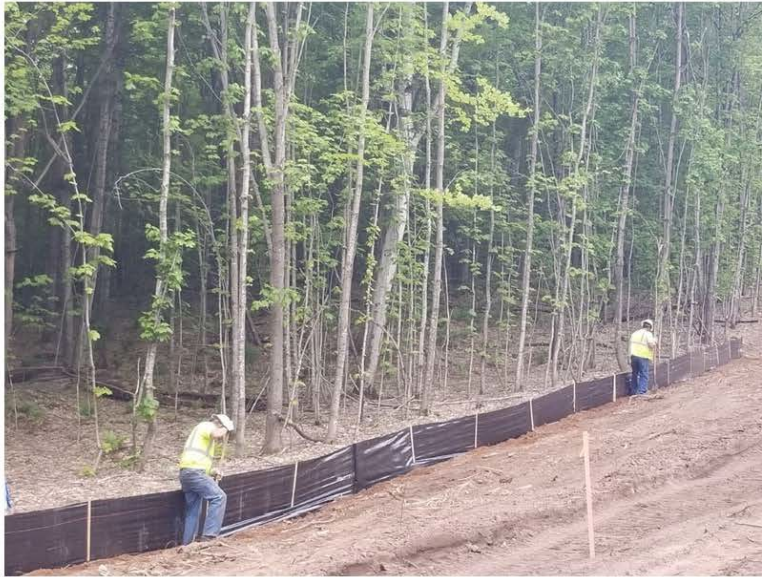
Weather Conditions	Partly Cloudy
Construction Activity	Clearing, Grading
Monitor Observations	Clearing and grading completed prior to redundant control installation.
Follow-Up Required?	Yes

Feature Tags

Waterbody	
Wetland	W-45.0
Tract ID	

Figure 3.1-1. Example Independent Environmental Monitoring Report (continued)

Communications	
Communication Type(s)	Environmental Inspector
Communication Details	Spoke to EI about return inspection in the morning.



Perimeter control installation in progress and time of observation. Site grading completed prior to redundant controls in place.

Figure 4.0-1. Line 3 Replacement Project Spread Overview Map

