23. MONITORING, COMMITMENTS AND ENVIRONMENTAL PROTECTION PLANNING

This section describes the programs and practices that NextBridge Infrastructure LP (NextBridge) will implement prior to and throughout the construction and operation phases of the East-West Tie Transmission Project (the Project).

23.1 Monitoring

An effective monitoring program provides results to indicate if the assumptions used in the assessment were correct and if mitigation measures are effective. An effective monitoring program also identifies unforeseen problems so they can be addressed in a timely manner. The Project has been designed to incorporate mitigation measures to minimize the potential for and magnitude of environmental effects.

The Project monitoring program includes both construction and post-construction monitoring. This section focusses on the construction and post-construction monitoring commitments made in the amended Environmental Assessment (EA) to monitor the effectiveness of the mitigation to be implemented during construction and the framework for the post-construction monitoring plan that will be developed based on the EA and permit approval conditions.

23.1.1 Construction Monitoring Plan

NextBridge has committed to decommission temporary access roads and workspaces, clean-up and reclamation environmental protection measures during construction (refer to Appendix 4-II). NextBridge will have Environmental Inspectors (EI) on-site during construction to monitor the implementation of the environmental protection measures and construction monitoring program.

The preliminary construction monitoring program for the Project is presented in Table 23-1. Details will be finalized during permitting process, and the construction monitoring program will be developed based on the EA and permit approval conditions. Preliminary construction monitoring programs are presented according to the environmental components considered in the assessment.

Table 23-1: Preliminary Construction Monitoring Program

Environmental Component	Proposed Monitoring
Geology, Terrain, and Soils	■ Terrain distribution on the Project footprint will be monitored for changes to surface and ground water flows and slope instability during the construction phase of the Project. ■ Soil distribution and erosion and sedimentation control measures will be monitored to avoid and minimize sediment mobilization from disturbed areas to drainages or water bodies. ■ Monitor the condition of the soils throughout construction and further assess whether topsoil is being subject to degradation that will eventually impact soil capability. ■ Soil quality issues such as compaction, rutting and admixing will be visually assessed throughout the Project footprint during construction. ■ Soil quality and distribution will be monitored during blasting activities using the Blasting Management Plan.
Surface Water	■ Monitoring of one or more surface water quantity and quality parameters at water taking locations to satisfy the conditions/requirements of applicable Environmental Activity and Sector Registry (EASR) or Permits To Take Water (PTTWs) related water taking and discharge plans. ■ Monitoring of total suspended solids (TSS) and/or turbidity (instrumented measurements and/or visual observations), and monitoring of streamflow rates and/or water levels at all water body crossings during construction, as well as immediately before construction (to capture baseline water quality conditions at locations downstream of the planned works) and immediately following construction (to confirm that water quality conditions have stabilized). ■ Monitoring of TSS and/or streamflow rates at water bodies that include greater sensitivity or implication to change from the standpoint of fish habitat, species at risk, channel stability, drainage pattern, or other environmental considerations. The specific monitoring locations will be determined during the permitting and design phases of the project; however, it is expected that water bodies of varying size (small, medium, large) would be captured, recognizing that this would allow the effectiveness of mitigation measures to be evaluated at a range of scales. ■ Monitoring/inspections of new permanent water body crossing structures and roadside drainage features (on a bi-annual basis for the first two years following post-construction and then annually thereafter until pre-existing conditions are reached) for physical function and condition. ■ Monitoring of TSS and/or turbidity (instrumented measurements and/or visual observations), and streamflow rates and/or water levels will be carried out on a twice annual basis at new and permanent water body crossings during the early stages of the operation phase until pre-existing conditions are reached (to verify the effectiveness of reclamation measures). To the extent practicable, the monitoring will be carried out during a period of high flows (e.g., spring) and low flows (e.g., mid- to late summer) in an effort to assess water quality conditions under a wide range of flow conditions. The monitoring program may be discontinued thereafter if conditions are observed to align with pre-construction conditions. ■ Routinely (e.g., before and/or after spring freshet) inspect and maintain culverts to prevent blockages from forming and causing ponding or backwater effects. Where culverts are installed at fish bearing water bodies, debris removal activities will follow Fisheries and Oceans Canada (DFO) guidance (i.e., gradual removal such that flooding downstream, extreme flows downstream, release of suspended sediment, and fish stranding can be avoided).
Groundwater	■ Well water will be tested before being used at construction camps. ■ Monitor and manage excavation dewatering activities during the installation of structure foundations, where required. ■ Conduct a pre-excavation survey of identified private wells within 100 m of the excavated locations by a licenced water well technician in accordance with the Wells Regulation (O.Reg. 903). Where landowner permission is granted, the pre-excavation survey will include completion of a well questionnaire to obtain details about the well, measurement of water levels and collection of a water quality sample. ■ Conduct a pre-blast survey of identified wells within 250 m of all blast locations by a licenced water well technician in accordance with the Wells Regulation (O.Reg. 903). Where landowner permission is granted, the pre-blast survey will include completion of a well questionnaire to obtain details about the well and measurement of water levels.
Air Quality	■ If the construction activities such as site access development, material hauling, transmission foundation and anchor construction, transmission structure assembly and erection are being undertaken within 100 m of the confirmed occupied residence, NextBridge will assess the construction schedule, environmental conditions, and season and evaluate the need for monitoring. Monitoring will be undertaken when these emission generating activities have the potential to impact the receptor. Handheld portable monitors will be used by a qualified person within approximately 10 m of confirmed occupied residences to provide real-time concentrations that can be compared to ambient air quality criteria.

Table 23-1: Preliminary Construction Monitoring Program

Environmental Component	Proposed Monitoring
Greenhouse Gases	No monitoring programs are proposed or required
Acoustic Environment	■ NextBridge will address noise concerns as they arise through a noise complaint process. ■ In the event that construction will occur beyond the daytime period, NextBridge and its contractors will re-evaluate the potential Project-related effects and if required, review mitigation requirements.
Vegetation and Wetlands	■ A search for potential rare plant and rare vegetation community in the Project Site should be completed prior to construction of each segment, in order to document incidences. ■ Wetland surveys to identify wetland changes not discernable from desktop mapping (on an annual basis for the first two years following construction) for species composition, species abundance and affected area (ha). ■ Siting of construction camps, laydown yards, and storage yards will be field verified prior to installation to avoid organic type wetlands (e.g., bogs and fens). ■ In the event that a previously unidentified rare plant species or rare vegetation community is suspected, the Owner may contact a resource specialist to identify the species or habitat and identify the magnitude of the disturbance to the vegetation feature. The resource specialist may be requested by the Owner to remain on the site until additional soil disturbance in the remainder of that area is completed, in order to monitor whether additional incidences are possible. Mitigation measures (avoiding or moving the specimen) can be implemented proactively if complete avoidance is not possible. ■ The Environmental Inspector will monitor the implementation of the Weed Management Plan and provides recommendations to improve the Weed Management Plan on an ongoing basis. ■ The Contractor will monitor and manage weed infestations on a regular and ongoing basis along the right-of-way (ROW) and on topsoil stockpiles to determine need for additional weed control measures. ■ Install, monitor and manage appropriate erosion and sedimentation controls as outlined in the Erosion and Sedimentation Control Management Plan (refer to Appendix 4-II, Section 8.1).
Fish and Fish Habitat	■ A reconnaissance for undocumented water bodies within the Project footprint will be completed prior to construction of each segment to document water bodies not included on the water body crossing list. ■ If fording is approved by the appropriate regulatory agency, a site inspection will be completed prior to construction to determine whether bed, banks, and fish habitat conditions at specific water bodies are suitable for the use of a ford. ■ Where culverts are proposed, a fish and fish habitat survey will be completed prior to construction to determine the suitability of the crossing structure. ■ The Owner may provide the appropriate resource specialist to assess the potential impacts to the water body as required. ■ The Environmental Inspector will be on-site during construction to monitor the installation of temporary equipment water body crossing structures. ■ Turbidity and/or TSS, streamflow rates, and/or water levels will be monitored at water body crossings in accordance with the requirements of regulatory permits and approvals. ■ The Environmental Inspector will be on-site during construction to monitor the removal of temporary equipment water body crossing structures. ■ The Environmental Inspector will monitor blasting operations. ■ Culverts will be routinely (e.g., before and/or after spring freshet) inspected and maintained to prevent blockages from forming and causing ponding or backwater effects. Where culverts are installed at fish bearing water bodies, debris removal activities will follow DFO's guidance (i.e., gradual removal such that flooding downstream, extreme flows downstream, release of suspended sediment, and fish stranding can be avoided). ■ Monitoring/inspections will be conducted of erosion and sediment management measures, and bank stabilization features to verify effectiveness.

Table 23-1: Preliminary Construction Monitoring Program

Environmental Component	Proposed Monitoring
Wildlife and Wildlife Habitat	■ The Owner will monitor the Project Site during construction for incidental sensitive features (e.g., water body, rare plant, rare vegetation community, wildlife species of concern, archaeological resources) that have not been previously identified on the Project Site. ■ NextBridge may provide the appropriate resource specialist, if required, to assess sensitive features and to inspect or monitor Project activities at or near sensitive areas. ■ A resource specialist may monitor stress to species during construction, if warranted. ■ The Owner will conduct visual inspection of the construction area and Project access roads to monitor adherence to traffic protocols and speed limits by all Project personnel. ■ A Safety Manager may be designated to monitor traffic safety for the Project Site. ■ The Environmental Inspector will monitor management and disposal of waste. ■ The Environmental Inspector will monitor blasting operations.
Archaeological Resources	■ Archaeological and heritage resources studies will be completed, the archaeological and heritage resource sites identified, and the associated mitigation identified prior to construction ■ The Owner will monitor the Project Site during construction for incidental sensitive features (e.g., water body, rare plant, rare vegetation community, wildlife species of concern, archaeological resources) that have not been previously identified on the Project Site.
Cultural Heritage Resources	■ Archaeological and heritage resources studies will be completed, the archaeological and heritage resource sites identified, and the associated mitigation identified prior to construction ■ The Owner will monitor the Project Site during construction for incidental sensitive features (e.g., water body, rare plant, rare vegetation community, wildlife species of concern, archaeological resources) that have not been previously identified on the Project Site.
Traditional Land and Resource Use	■ Monitoring programs will be established to confirm the effectiveness of mitigation measures relevant to the resources relied on for Indigenous current use of lands and resources (i.e., vegetation and wetlands, fish and fish habitat, and wildlife and wildlife habitat). ■ If archaeological or cultural heritage resources, including Indigenous land and resource use sites, are identified and mitigation by avoidance and protection is undertaken, monitoring programs may be required to confirm the effectiveness of mitigation.
Socio-economics	No monitoring programs are proposed or required
Non-traditional Land and Resource Use	Monitoring programs will be established to confirm the effectiveness of mitigation measures relevant to the resources relied on for current use of lands and resources (i.e., vegetation and wetlands, fish and fish habitat, and wildlife and wildlife habitat).
Visual Environment	No monitoring programs are proposed or required
Human Health	No monitoring programs are proposed or required
Construction Environmental Protection Plan	General environmental protection measures listed in the CEPP (refer to Appendix 4-II), that were not included in specific EA discipline sections will be monitored by NextBridge during construction.

CEPP = Construction Environmental Protection Plan; DFO= Fisheries and Oceans Canada; EASR = Environmental Activity and Sector Registry; ECA = Environmental Compliance Approval; e.g., = for example; i.e., = that is; m = metres; PTTW = Permit to Take Water; ROW = right-of-way; TSS = total suspended solids.

23.1.2 Post-Construction Monitoring Plan Framework

NextBridge has also committed to post-construction monitoring during construction (refer to Appendix 4-II, Section 6.10). The goal of post-construction monitoring is to continue monitoring the effectiveness of implementation of mitigation after the construction phase is complete for all Project components.

The preliminary post-construction mitigation measures for the Project are presented in Table 23-2. A post-construction monitoring plan will be developed prior to the start of construction based on EA and permit approval conditions. The post-construction monitoring plan will also include a plan to address outstanding environmental issues or areas that require further reclamation or monitoring of reclamation efforts, as identified during and following construction.

Table 23-2: Key Post-Construction Monitoring Activities

Key Monitoring Activity	Parameter	Duration after Construction	Frequency	Timing	Measurements or Observations
Terrain and Soils					
Post-construction monitoring to identify reclamation concerns	Terrain conditions and soil quality	Two years	Annual	Spring	▪ Signs of changes to surface and ground water flows ▪ Signs of changes in slope stability ▪ Signs of erosion and sedimentation ▪ Signs of revegetation issues
Vegetation					
Post-construction monitoring the success of protection or relocation measures during long term monitoring, as required	Species occurrence	One year	As required	Summer	Species mortality or abundance
Post-construction weed survey to identify and map occurrence of weeds on ROW	Species occurrence	One year	Annual	Summer	Species composition and abundance
Wetlands					
Post-construction wetland surveys to identify wetland changes not discernable from desktop mapping	Area of wetland affected by the Project	Two years	Annual	Spring or Summer	▪ Area affected (ha) ▪ Vegetation species composition and abundance ▪ Amphibian presence
Fish and Fish Habitat					
Post-construction monitoring/inspections of new permanent water body crossing structures and new roadside drainage features	Physical function and condition of crossing structures and drainage features	Two years	Bi-annual for the first two years following post construction and then annual thereafter	Spring or Summer and Fall or Winter	▪ Integrity of permanent water body crossing structures ▪ Signs of changes to the morphology of the water body channel at new permanent water body crossing structures ▪ Signs of blockages or debris at new drainage features ▪ Assess effectiveness of erosion and sediment control measures (e.g., bank restoration and re-vegetation).
Post-construction monitoring of total suspended solids and streamflow rates to verify the effectiveness of reclamation measures at selected water bodies those with greater sensitivity or implication to change from the standpoint of fish habitat, species at risk, channel stability, drainage pattern, or other environmental considerations. The specific monitoring locations will be determined during the permitting phases of the Project; however, it is expected that water bodies of varying size (small, medium, large) would be captured, recognizing that this would allow the performance/effectiveness of mitigation measures to be evaluated at a range of scales.	Total suspended solids and streamflow rates	Six months	Bi-annual during the early stages of the Project operation and maintenance	Spring or Summer and Fall or Winter	▪ Total suspended solids ▪ Streamflow rates ▪ (The monitoring program may be discontinued thereafter if conditions are observed to have stabilized and applicable water quality standards are met)

Table 23-2: Key Post-Construction Monitoring Activities

Key Monitoring Activity	Parameter	Duration after Construction	Frequency	Timing	Measurements or Observations
Wildlife and Wildlife Habitat					
Post-construction avian mortality survey to evaluate effectiveness of bird flight diverters	Mortality	Two year	Bi-annual	Spring and Fall	Mortality presence / absence
Indigenous Current Land and Resource Use					
Post-construction traditional use plant species survey to confirm or identify traditional use plant species presence	Species occurrence	Two years	Annual	Summer	Species composition and abundance

e.g. = for example; ha = hectares; ROW = right-of-way.

23.2 Commitments

Commitments made in the Terms of Reference (ToR) and how these are addressed in the amended EA Report are provided in Appendix 1-II. A plan for how and when commitments made in the amended EA Report will be fulfilled, and how NextBridge will report to the Ministry of the Environment and Climate Change (MOECC) regarding compliance is provided in Appendix 23-I. NextBridge will retain the results of the compliance self-assessment, including detailed monitoring data, at its head office in Toronto. This information will be made available in a timely manner to the MOECC on request.

23.3 Environmental Protection Planning

The objective of all environmental protection and mitigation measures in this amended EA Report, the Construction Environmental Protection Plan (CEPP; refer to Appendix 4-II), the Operation Environmental Management Plan (OEMP; refer to Appendix 4-III), the Environmental Alignment Sheets (refer to Appendix 5-I), and the Access and Construction Environmental Maps (refer to Appendix 5-II) is to anticipate, prevent, minimize or manage conditions resulting over the life of the Project that could potentially adversely affect the physical, biological or socio-economic environment.

The purpose of the CEPP and OEMP is to provide guidance to NextBridge's employees and contractors for environmentally responsible working procedures and standards. The CEPP and OEMP are a compilation of environmental protection and contingency measures intended to address known and anticipated environmental conditions that can occur during Project construction and operation, respectively.

23.3.1 Orientation and Training

NextBridge will develop an environmental and safety training program, to be implemented by the Contractor. NextBridge will also develop and deliver advanced environmental training to relevant Project personnel (e.g., environmental inspectors, contractor managers, and contractor supervisors). Construction contractor staff who show neglect for the environment or disregard for the CEPP may be removed from the Project by NextBridge.

23.3.2 Environmental Inspection

NextBridge will appoint Environmental Inspectors to oversee implementation of the environmental protection measures and mitigation described in the CEPP during Project construction.

23.3.3 Compliance Reporting

Permits typically require submission of compliance reports at specified intervals during the Project and upon Project completion. These records will be retained with other appropriate Project documentation in Project files.

A compliance self-assessment will be carried out to document compliance with the commitments made in the amended EA Report, including implementation of mitigation (impact management measures) and conditions of approval. The compliance self-assessment will be conducted both during and after construction, and the MOECC will be updated regarding compliance at regular (e.g., quarterly) intervals during construction and annually or otherwise post-construction, depending on the post-construction monitoring reporting requirements specified in approval conditions. Details regarding the plan for compliance are provided in Appendix 23-I.

23.4 Flexibility to Accommodate New Circumstances

This amended EA Report has been prepared in accordance with the approved ToR (refer to Appendix 1-I) and MOECC guidance, including the *Code of Practice: Preparing and Reviewing Environmental Assessments in Ontario* (MOECC 2014). Detailed design and consultation and engagement for the Project are ongoing. There may be scenarios in which commitments made in this amended EA Report and in the ToR cannot or should not be completely met in response to new or changed circumstances that may arise through consultation and engagement or detailed design. NextBridge will discuss the circumstances with the MOECC and other applicable regulatory agencies if a scenario occurs in which NextBridge seeks to deviate from a commitment prior to proceeding with planning for the alternate scenario or implementing the scenario before or during construction or operation.

APPENDIX 23-I

Commitments in the EA Report

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