

Screening Criteria	Rating of Potential Effect								Comments
	-H	-M	-L	NIL	+L	+M	+H	NA	
<b>Physical</b>									
Unique Landforms								•	No unique landforms were identified within the study area.
Existing Mineral/Aggregate Resources Extraction Industries								•	No extraction industry operations have been identified in the study area.
Earth Science - Areas of Natural and Scientific Interest (ANSI)								•	There are no Earth Science ANSIs in the local study area.
Specialty Crop Areas								•	No specialty crop areas were identified in the study area.
Agricultural Lands or Production								•	No agricultural lands or production were identified in the study area.
Niagara Escarpment								•	The study area is outside of the Niagara Escarpment.
Oak Ridges Moraine								•	The study area is outside of the Oak Ridges Moraine.
Environmentally Sensitive/Significant Areas (physical)				•					The physical function and form of environmentally sensitive/significant areas are not anticipated to be impacted.
Air Quality			•						Temporary negative effects associated with construction activities are possible within the study area, and the lands immediately surrounding it. Mitigation measures will be in place to minimize the impact. See Section 6.1.1 for more information.
Agricultural Tile or Surface Drains								•	No agricultural drains were found within the study area. Any drains in the surrounding area are not expected to be impacted.
Noise Levels and Vibration			•						Noise and vibration levels in the study area and lands immediately surrounding it may be affected during the proposed construction. Mitigation measures will be in place to minimize the impact. See Section 6.12 for more information.
High/Storm Water Flow Regime			•						The project activities are not anticipated to have long-term effects on the flow regime of Kashwakamak Lake. The proposed dam replacement will be designed to current standards and will incorporate considerations for climate change. During construction, there may be temporary impacts on the flow regime, including potential early drawdown of the lake. Mitigation measures will be implemented to minimize these impacts. See Section 6.1.3 for more information.
Low/Base Water Flow Regime				•					The project activities are not anticipated to have long-term effects on the water level regime of Kashwakamak Lake. The proposed dam replacement will be designed to current standards and will incorporate considerations for climate change. During construction, there may be temporary impacts on the flow regime, including potential early drawdown of the lake. Mitigation measures will be implemented to minimize these impacts. See Section 6.1.3 for more information.

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Existing Surface Drainage and Groundwater Seepage			•						Minor disruptions to existing surface drainage paths within the study area may occur due to construction activities. Several mitigation measures will be implemented to minimize disturbances to these drainage paths during construction. Additionally, post-construction site restoration is expected to further reduce impacts and ensure that there are no long-term adverse effects on surface drainage and groundwater seepage. See Section 6.1.4 for more information.
Groundwater Recharge/Discharge Zones								•	The project activities are not anticipated to negatively affect groundwater recharge/discharge zones within the study area.
Falls within a vulnerable area as defined by the Clean Water Act								•	The study area does not fall within a vulnerable area as defined by the Clean Water Act. The study area is not within Mississippi-Rideau's source water protection areas.
Littoral Drift								•	N/A
Other Coastal Processes								•	N/A
Water Quality			•						Potential negative impacts on water quality may include increased turbidity during construction. However, it is expected that any adverse effects on water quality from construction activities can be mitigated to minimize impacts. See Section 6.1.5 for more information.
Soil/Fill Quality				•					Shore infilling may be necessary on the embankment during the installation of the new dam. To prevent negative impacts, the project will adhere to relevant guidelines, including the MECP Fill Quality Guide and Good Management Practices for Shore Infilling in Ontario.
Contaminated Soils/Sediments/Seeps				•					It is not anticipated that contaminated soils, sediments or seeps occur within the study area. Excess soils generated during construction should be handled in accordance with requirements of Ontario Regulation (O.Reg.) 406/19 (as amended). See Section 6.1.6 for more information.
Existing Transportation Routes			•						Site is accessed by a private road off of Gutheinz Road. In the lands surrounding the study area, there is a potential for increase in truck traffic during construction. In the long term, the preferred alternative is not expected to have any effects on the study area. Mitigation measures will be put in place to minimize these effects. See Section 6.5.2 for more information.
Constructed Crossings (e.g. bridges, culverts)								•	No existing watercourse crossing are within close proximity to the study area.
Geomorphology								•	The construction of the new dam will enhance the geomorphology of the dam and surrounding channel, while maintaining the integrity of the Mississippi Watershed Management Plan. This improvement will optimize the channel's natural processes and stability, aligning with sustainable watershed management practices.
Other								•	N/A
<b>Biological</b>									
Wildlife Habitat			•						During the proposed construction activities, minor impacts are anticipated to occur to wildlife habitat within the study area. Disturbances such as vegetation removal and increased noise from construction are anticipated. However, these impacts are expected to be minimized through careful

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									site design, adherence to breeding and migratory bird timing restrictions, and compliance with post-construction site restoration regulations. See Section 6.2.1 for more information.
Habitat Linkages or Corridors				•					The proposed works are not anticipated to have any impacts on the existing habitat linkages or corridors in the study area.
Significant Vegetation Communities		•							Potential negative impacts from construction activities within the study area may include vegetation removal for dam access and the establishment of construction laydown and staging areas. These impacts are expected to be mitigated by minimizing vegetation loss and implementing post-construction site restoration to facilitate vegetation reestablishment. See Section 6.2.2 for more information.
Environmentally Sensitive/Significant Areas (biological)			•						Significant fish habitat in the form of sport fish and baitfish spawning is located immediately downstream of Kashwakamak Lake Dam. Mitigation measures will be in place to minimize the impact. See Section 6.2.3 for more information.
Fish Habitat			•						Fish are anticipated to be displaced as a result of increases in noise and vibration, the construction of cofferdams, and localized turbidity increases resulting from construction activities within the study area. Best environmental management practices will be implemented to minimize impacts on fish habitat. In the long term, the preferred alternative is anticipated to offer opportunities for enhancing fish and aquatic habitats within the study area. See Section 6.2.3 for more information.
Species of Concern (e.g. species at risk, Vulnerable/threatened/ endangered species, conservation priorities - either flora or fauna)			•						There is a potential for habitat of species at risk to be present within the study area. During construction, mitigation measures will be implemented to avoid impacts on these species and their habitats. Post-construction site restoration will be carried out to prevent long-term adverse effects. The preferred alternative is not anticipated to have any lasting impact on species of concern. See Section 6.2.4 for more information.
Exotic/Alien and Invasive Species								•	There were no plant species listed as Restricted under the Invasive Species Act (2015) observed to be present within the study area
Wildlife/Bird Migration Patterns				•					As the project activities are confined to the study area, which does not significantly influence wildlife movement or bird migration patterns, it is unlikely that these patterns will be affected.
Wildlife Population			•						The replacement of the dam has the potential to impact wildlife populations, however, with careful planning, mitigation measures (i.e., staggging, protecting vegetation, etc.), and modern design practices can help minimize negative effects and enhance ecological benefits. See Section 6.2.1 for more information.
Wetlands				•					There are no significant wetlands present within the study area. Manòmin, although not present in Kashwakamak Lake, is found growing downstream in Mud Lake. Mitigation measures will be in place to minimize the impact to Manòmin. See Section 6.2.2 for more information.
Microclimate				•					While highly localized changes in the study area water temperature may occur during construction, the overall impacts on the study area microclimate are expected to be neutral.
Life Science ANSIs								•	No life science ANSIs have been identified in the study area, or in the immediate surrounding area.
Unique Habitats								•	No unique habitats were identified within the study area.

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Other								•	N/A
<b>Cultural</b>									
Traditional Land Uses				•					Impacts on Traditional Land Uses are not anticipated from the dam replacement. During consultations, no concerns were raised by the Aboriginal Communities during consultation..
Aboriginal Community or Reserve				•					Impacts on Aboriginal Community or Reserve are not anticipated to occur with the dam replacement. During consultations, no concerns were raised by the Aboriginal Communities during consultation..
Outstanding Native Land Claim as identified by the Aboriginal Community								•	No Outstanding Native Land Claim. No concerns have been raised by the Aboriginal Communities during consultation.
Transboundary Water Management Issues								•	No Transboundary Water Management issues concerning the study area have been identified.
Riparian Uses		•							Kashwakamak Lake is utilized by riparian users for activities such as boating, swimming, fishing, camping, and cottaging. The construction is expected to have short-term impacts on these riparian uses. Mitigation measures will be implemented to minimize these effects. See Section 6.3.1 for more information.
Recreational or Tourist Uses of a Water Body and/or Adjacent Lands			•						The Kashwakamak Lake Dam obstructs the navigability of the waterway, requiring boaters to portage. However, construction will have short-term impacts on portage routes and access to shoreline trails. Mitigation measures will be put in place to minimize these effects. See Section 6.3.1 for more information.
Recreational or Tourist Uses of Existing Shoreline Access			•						Shoreline access will be temporarily impacted during construction. See Section 6.3.1 for more information.
Aesthetic or Scenic Landscapes or Views				•					In the study area, construction activities may temporarily result in aesthetic impacts. However, in the long term, the preferred alternative is expected to have an aesthetic similar to that of the existing dam.
Archaeological Resources			•						Stages 1, 2, and 3 of the Archaeological Assessment (AA) were carried out for the study area. The Stage 2 AA identified a small Indigenous site along the water's edge, necessitating a Stage 3 AA. The Stage 3 AA was completed to determine the appropriate setback from the archaeological resources within the study area. As a result, no impacts on archaeological resources are expected from the proposed construction activities. For additional details, please refer to Section 6.3.2.
Built Heritage Resources				•					The dam was found to have no cultural heritage value or interest (CHVI) under the Ontario Heritage Act. There are no significant heritage features within the study area. For additional details, please refer to Section 6.3.3.
Cultural Heritage Landscapes				•					No impacts on cultural heritage landscapes are anticipated from the proposed work.
Historic Canals								•	There are no historic canals within or immediately surrounding the study area.
Federal Property								•	There is no federal property within or immediately surrounding the study area.

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Heritage River System									• The Mississippi River flows directly into the Ottawa River, a designated Heritage River System. Mitigation measures will be implemented during construction to limit disturbances in Kashwakamak Lake and the Mississippi River.
Other									• N/A
<b>Socioeconomic</b>									
Surrounding Neighbourhood or Community			•						The proposed construction works may affect adjacent property owners, residents, seasonal cottagers, and nearby resorts due to increased noise levels and potential truck traffic. These temporary impacts are expected to be mitigated through measures such as enforcing noise bylaws and implementing traffic management plans. In the long term, the new dam will adhere to safety guidelines and support the ongoing recreational and tourism use of the lake. Mitigation measures will be put in place to minimize these effects. See Section 6.4.1 for more information.
Surrounding Land Uses or Growth Pressure									• The surrounding land use consists of residents/seasonal cottagers and resorts. The proposed replacement of the dam is not anticipated to impact surrounding land uses or growth pressures.
Existing Infrastructure, Support Services, Facilities									• N/A
Pedestrian Traffic Routes			•						Access to the dam is restricted; however, there are existing shoreline trails that could be temporarily impacted during the construction phase. Mitigation measures will be put in place to minimize these effects. See Section 6.4.1 for more information.
Property Values or Ownership				•					No effects on property values or ownership are expected in the area surrounding the study area.
Existing Tourism Operations			•						Kashwakamak Lake is renowned for its picturesque beauty and offers a range of tourist attractions, including boating, fishing, and swimming opportunities. Construction activities could temporarily affect tourism operations due to increased noise levels, early drawdown of the lake, and truck traffic. However, these short-term impacts are expected to be mitigated through appropriate measures. In the long run, the new dam will adhere to safety guidelines and ensure the continued enjoyment of the lake for recreational and tourism purposes.
Property /Farm Accessibility			•						The proposed construction works may affect adjacent property owners accessibility during construction. Mitigation measures will be put in place to minimize these effects. See Section 6.4.2 for more information.
Other									• N/A
<b>Engineering/Technical</b>									
Rate of Erosion in Ecosystem					•				The proposed works will reduce the rate of erosion within the study area's ecosystem. By stabilizing the embankment and rectifying seepage issues, erosion on the embankment will be reduced, which will help prevent sediment deposition downstream.

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Sediment Deposition Zones in Ecosystem						•			By stabilizing the embankment and improving the dam's design, the rate of erosion on the dam and surrounding areas can be reduced. This helps minimize the amount of sediment entering the river system and accumulating in deposition zones downstream.
Flood Risk in Ecosystem							•		The new dam will be designed to improve flood risk management by incorporating advanced engineering features, enhancing storage capacity, supporting effective sediment and water flow management, and maintaining the integrity of the Mississippi Watershed Management Plan.
Slope Stability					•				Dam designs typically include enhanced embankment stabilization techniques. This can involve using more robust materials, incorporating proper drainage patterns, and employing geotechnical measures to prevent erosion and slope failure. By addressing these factors, the replacement of a dam can significantly enhance slope stability, reduce the risk of erosion, and contribute to the overall safety and durability of the dam and its surrounding environment.
Existing Structures				•					No impacts anticipated to existing structures within or adjacent to the study area.
Hazardous Lands								•	No hazardous lands were identified within or adjacent to study area.
Hazardous Sites								•	No hazardous sites were identified within or adjacent to study area.
Other								•	N/A

(-H) = highly negative; (-M) = moderately negative; (-L) = minor negative; (NIL) = neutral or none; (+L) = minor positive; (+M) = moderately positive; (+H) = highly positive; (NA) = not applicable.