PRELIMINARY COMPARISON AND RANKING OF ALTERNATIVES

CRITERIA	Summary of Weighted / Measured Criteria	Weighting	ALTERNATIVE A "Do Nothing"	ALTERNATIVE B Rehabilitate Hillsburgh Dam and;		ALTERNATIVE C Rehabilitate Station Street Bridge and;		ALTERNATIVE D Reconstruct Station Street Bridge and;	
				OPTION 1 Reconstruct Station Street Bridge	OPTION 2 Rehabilitate Station Street Bridge	OPTION 1 Decommission Dam	OPTION 2 Construct Offline Pond	OPTION 1 Decommission Dam	OPTION 2 Construct Offline Pond
TECHNICAL/FUNCTIONAL ASPECTS									
Hydrology and Hydraulics	The impact each Alternative has to the hydrology and hydraulics of the river system. The Alternative must conform to regulatory standards for a dam with High Hazard Classification . This is measured through engineering analysis and interpretation.	HIGH	Current Dam and Bridge do not meet hydraulic requirements and risk uncontrolled dam failure in a major storm event. The dam owners are obliged to determine a long term solution for the Dam and Bridge.	Dam will be upgraded to meet requirements for dam safety. Bridge will be reconstructed to convey the Regulatory Flood event and meet hydraulic requirements. increased hydraulic capacity will assist to reduce upstream flood levels during major storm events.	Dam will be updated to meet requirements for dam safety; bridge will not convey the Regulatory Flood and will not meet hydraulic requirements.	Pond will no longer exist; Station Street is considered a local roadway. Bridge will be rehabilitated and will meet the requirements to convey the 25 year storm event.	Dam will be relocated inside exisiting pond footprint. Station Street is considered a local roadway. Bridge will be rehabilitated and will meet the requirements to convey the 25 year storm event.	Dam will no longer exist, Station Street is considered a local roadway. Bridge will be reconstructed to a similar hydraulic capacity and will meet the requirements to convey the 25 year storm event.	Dam will be relocated inside exisitng pond footprint. Station Street is considered a local roadway. Bridge will be reconstructed to a similar hydraulic capacity and will meet the requirements to convey the 25 year storm event.
Ranking			9	12	9	12	12	12	12
Sediment Transport	Each alternative has a potential effect on the accumulation and transport of sediment. Sediment accumulation can reduce river system stability.	LOW	Eventual dam failure would allow for uncontrolled release of sediment negatively impacting river system stability.	Minor impacts during bridge reconstruction and dam rehabilitation. Sediment monitoring programs and mitigation measures will be implemented.	Minor impacts during dam rehabilitation. Sediment monitoring programs and mitigation measures will be implemented.	Controlled release of sediment downstream may result in minor impacts to river system stability during dam decommissioning. Sediment monitoring programs and mitigation measures will be implemented.	Controlled release of sediment downstream may result in short term impacts to river system stability during dam decommissioning. Sediment monitoring programs and mitigation measures will be implemented.	Controlled release of sediment downstream may result in short term impacts to river system stability during dam decommissioning. Sediment monitoring programs and mitigation measures will be implemented.	Controlled release of sediment downstream may result in short term impacts to river system stability during dam decommissioning. Sediment monitoring programs and mitigation measures will be implemented.
Ranking			1	3	3	2	2	2	2
Hydrogeology	The effects each Alternative has on the local hydrogeology and water tables and local feature ponds. Lowering of the Hillsburgh Pond has historically proven to lower water levels of dug wells in the vicinity as well upstream private feature ponds.	LOW	No impacts to surrounding dug wells in the vicinity of the pond are anticipated. This will not address the current state of the bridge and dam.	No impacts to surrounding dug wells or private feature ponds in the vicinity of the pond are anticipated.	No impacts to surrounding dug wells or private feature ponds in the vicinity of the pond are anticipated.	Negative impacts to surrounding dug wells and private feature ponds with removal of the pond.	Minor impacts to surrounding dug wells and private feature ponds with removal of the pond.	Negative impacts to surrounding dug wells and private feature ponds with removal of the pond.	Minor impacts to surrounding dug wells and private feature ponds with removal of the pond.
Ranking			2	4	4	1	2	1	2
Transportation	The effects each Alternative has on the operational safety and structural integrity of the dam and bridge. The Alternatives must meet design standards for traffic and pedestrian crossing. These are measured through engineering investigations, inspections and assessments.	HIGH	Current dam structure does not meet requirements for dam safety. Bridge is experiencing deterioration and does not meet lane or pedestrian design standard requirements which will lead to eventual road closure.	Dam will be upgraded to meet requirements for dam safety. Bridge will be reconstructed to allow 2-lane traffic and sidewalk for pedestrian crossing to meet current transportation design standards.	Dam will be updated to meet requirements for dam safety, bridge will not meet current transportation design standards.	Station Street considered a local roadway. Bridge will not meet current transportation design standards.	Station Street considered a local roadway. Bridge will not meet current transportation design standards.	Station Street considered a local roadway. Bridge will be reconstructed to allow for 2-lane traffic and pedestrian crossing to meet current transportation design standards.	Station Street considered a local roadway. Bridge will be reconstructed to allow for 2-lane traffic and pedestrian crossing to meet current transportation design standards.
Ranking			9	12	9	10	10	12	12
Total Ranking			21	31	25	25	26	27	28
NATURAL ENVIRONMENT									
Species at Risk (SAR)	The effects each alternative has on the native (SAR) within the project study area. This is measured through the desktop and field investigations which assess the types of species present.	MED	No impacts are anticipated under current state. Uncontrolled dam failure could cause significant negative impacts to Species at Risk.	Minor impacts to SAR Habitat are expected during construction. If appropriate mitigation measures are put in place, no long term impacts are anticipated following construction and restoration.	Minor impacts to SAR Habitat are expected during construction. If appropriate mitigation measures are put in place, no long term impacts are anticipated following construction and restoration.	Impacts to SAR Habitat are expected during construction; and long term impacts to the habitat through permanent removal of overwintering habitat for Common Snapping Turtle, and permanent removal of foraging habitat for Little Brown Myotis (Brown Bat)	Minor impacts to SAR Habitat are expected during construction. If appropriate design and mitigation measures are put in place, no long term impacts are anticipated following construction and restoration.	Impacts to SAR Habitat are expected during construction; and long term impacts to the habitat through permanent removal of overwintering habitat for Common Snapping Turtle, and permanent removal of foraging habitat for Little Brown Myotis (Brown Bat)	Minor impacts to SAR Habitat are expected during construction. If appropriate design and mitigation measures are put in place, no long term impacts are anticipated following construction and restoration.
Ranking			7	6	6	5	6	5	6
Fish Habitat	The effects each alternative has on the native fish species and their habitat. Fish barriers reduce ability for fish passage and diversity. This is measured through the desktop and field investigations which assess the types of fish species present as well as, the precence and nature of barriers.	MED	No impacts are anticipated under current state. Uncontrolled dam failure could cause significant negative impacts to Fish and Fish Habitat	Impacts to fish and fish habitat are expected during construction. If appropriate mitigation measures are put in place, no long term impacts are anticipated following construction and restoration.	Impacts to fish and fish habitat are expected during construction. If appropriate mitigation measures are put in place, no long term impacts are anticipated following construction and restoration.	Positive impacts to the managed Cold Water Fishery are anticipated from removing the dam and re-establishing the watercourse. Warm water fish species, which are not managed, would be negatively impacted by loss of habitat.	Positive impacts to the managed Cold Water Fishery are anticipated from removing the dam. The off-line pond may negatively impact the thermal regime if warm water is allowed to enter the watercourse.	Positive impacts to the managed Cold Water Fishery are anticipated from removing the dam and re-establishing the watercourse. Warm water fish species, which are not managed, would be negatively impacted by loss of habitat.	Positive impacts to the managed Cold Water Fishery are anticipated from removing the dam. The off-line pond may negatively impact the thermal regime if warm water is allowed to enter the watercourse.
Ranking			5	6	6	8	8	8	8
Significant Wildlife Habitat (SWH)	The effects each alternative has on SWH within the project study area. The destruction of SWH due to change or alteration can have negative impacts on the natural habitat features and ecological functions. SWH is measured through desktop and field investigations.	LOW	No impacts are anticipated under current state. Uncontrolled dam failure could cause significant negative impacts to SWH.	Minor impacts to SWH are expected during construction. If appropriate mitigation measures are put in place, no long term impacts are anticipated following construction and restoration.	Minor impacts to SWH are expected during construction. If appropriate mitigation measures are put in place, no long term impacts are anticipated following construction and restoration.	Impacts are expected during construction and long term negative impacts on the features and functions of the following SWH: Waterfowl Stopover and Staging, Turtle overwintering, and Habitat for Special Concern Species and Rare Wildlife Species.	Minor impacts to SWH are expected during construction. If appropriate mitigation measures are put in place, no long term impacts are anticipated following construction and restoration.	Impacts are expected during construction and long term negative impacts on the features and functions of the following SWH: Waterfowl Stopover and Staging, Turtle overwintering, and Habitat for Special Concern Species and Rare Wildlife Species.	Minor impacts to Significant Wildlife Habitat are expected during construction. If appropriate mitigation measures are put in place, no long term impacts are anticipated following construction and restoration.
Ranking			3	2	2	1	2	1	2
Rare Species	The effects each alternative has on rare species within the project study area. The destruction of SWH due to change or alteration can have negative impacts on the natural habitat features and ecological functions of the rare species. This is measured through desktop and field investigations which quantifies and assesses the rare species present.	LOW	No impacts are anticipated under current state. Uncontrolled dam failure could cause significant negative impacts to Rare Species.	Minor impacts to Rare Species habitat are expected during construction. If appropriate mitigation measures are put in place, no long term impacts are anticipated following construction and restoration.	Minor impacts to Rare Species habitat are expected during construction. If appropriate mitigation measures are put in place, no long term impacts are anticipated following construction and restoration.	Impacts to Rare species are expected during construction, and long term impacts include permanent changes to potential foraging/stopover habitat for Great Egret and Trumpeter Swan.	Minor impacts to Rare Species habitat are expected during construction. If appropriate mitigation measures are put in place, no long term impacts are anticipated following construction and restoration.	Impacts to Rare species are expected during construction, and long term impacts are include permanent changes to potential foraging/stopover habitat for Great Egret and Trumpeter Swan.	Minor impacts to Rare Species habitat are expected during construction. If appropriate mitigation measures are put in place, no long term impacts are anticipated following construction and restoration.
Ranking			3	2	2	1	2	1	2
Landscape Features	The effects each alternative has on landscape features within the project study area. The loss of certain landscape communities can result in negative impacts to the local ecologies interdependencies. This is measured through desktop and field investigations which quantify and assess the current landscape features.	LOW	No impacts are anticipated under current state. Uncontrolled dam failure could cause significant negative impacts to Landscape Features.	No impacts are anticipated.	No impacts are anticipated.	Impacts to landscape features are expected through the removal of the Hillsburgh Pond open water community, which is a rare community in the Town of Erin. Possible negative impact to the Treed Fen Community if hydrological changes (e.g. lower water table) are associated with the decommissioning of the dam.	Open water community will be maintained through construction of off-line pond. Possible negative impact to the Treed Fen Community if hydrological changes are associated with the decommissioning of the dam.	Impacts to landscape features are expected through the removal of the Hillsburgh Pond open water community, which is a rare community in the Town of Erin. Possible negative impact to the Treed Fen Community if hydrological changes (e.g. lower water table) are associated with the decommissioning of the dam.	Open water community will be maintained through construction of off-line pond. Possible negative impact to the Treed Fen Community if hydrological changes are associated with the decommissioning of the dam.
Ranking			3	3	3	1	2	1	2
Provincially Significant Wetlands (PSW)	The effects each alternative has on PSW within the project study area. Changes to the limit and extent of the PSW can cause negative impacts to the local ecologies interdependencies. This is measured through desktop and field investigations which quantify and assess the current limit and extent of PSW.	MED	No impacts are anticipated under current state however, uncontrolled dam failure could cause significant negative impacts to the PSW	Potential changes to hydrology could impact the upstream and downstream extent and quality of wetland.	No impacts are anticipated.	Potential changes to hydrology could impact the upstream and downstream extent and quality of wetland.	Potential changes to hydrology could impact the upstream and downstream extent and quality of wetland.	Potential changes to hydrology could impact the upstream and downstream extent and quality of wetland.	Potential changes to hydrology could impact the upstream and downstream extent and quality of wetland.
Ranking			5	6	8	6	6	6	6
Total Ranking			26	25	27	22	26	22	26

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