

APPENDIX D

Public Information Centre Display Boards

PROBLEM STATEMENT

THE HILLSBURGH DAM, ITS POND AND ASSOCIATED BRIDGE (STRUCTURE 2064) ARE HISTORICAL LANDMARKS IN THE COMMUNITY OF HILLSBURGH. IN 2011, THE POND'S OUTLET PIPE, WITHIN THE EARTHEN DAM STRUCTURE, FAILED. STRUCTURAL AND HYDROTECHNICAL REVIEWS CONCLUDED THAT THE DAM STRUCTURE DOES NOT MEET MINIMUM SAFETY CRITERIA AND THEREFORE, IT IS AT AN UNACCEPTABLY HIGH LIKELIHOOD OF FAILURE. IN THE EVENT OF A DAM FAILURE, THERE IS A POTENTIAL FOR LOSS OF LIFE AND APPRECIABLE DOWNSTREAM PROPERTY DAMAGE. IN 2012, EMERGENCY REPAIRS WERE COMPLETED TO MITIGATE THE OUTLET PIPE FAILURE. THE REGULATORY APPROVAL, UNDER THE LAKES AND RIVERS IMPROVEMENT ACT, FOR THE EMERGENCY REPAIRS REQUIRES THE TOWN OF ERIN TO DEVELOP AND IMPLEMENT A PERMANENT SOLUTION FOR THE DAM. IN ADDITION, THE BRIDGE IS NEARING THE END OF ITS DESIGN LIFE AND IS IN NEED OF UPGRADES TO REDUCE THE RISK TO TRAFFIC USING THE STRUCTURE. DUE TO THEIR CLOSE PROXIMITY AND INTERDEPENDENCE, THE DAM AND BRIDGE STRUCTURE WILL BOTH BE EVALUATED UNDER THIS CLASS EA. THIS PROJECT IS BEING UNDERTAKEN TO ENSURE THE LONG TERM SAFETY OF THE DAM AND BRIDGE WITH DUE CONSIDERATION FOR THE NATURAL ENVIRONMENT AND THE INTERESTS OF VARIOUS STAKEHOLDERS WITHIN THE COMMUNITY.


STUDY AREA



Legend

 Study Area

Erin Parcel Fabric

 In Study Area

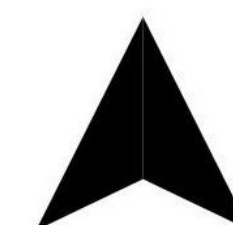
Information Sources:

1. Wetland boundaries accessed from Land Information Ontario
Data accessed October 15, 2014
2. Waterbodies, Watercourses, and County Trails provided by Wellington County
Date: October 2, 2014
3. Fish Communities recreated from the Erin Service and Settlement Master Plan
Date: November 14, 2014



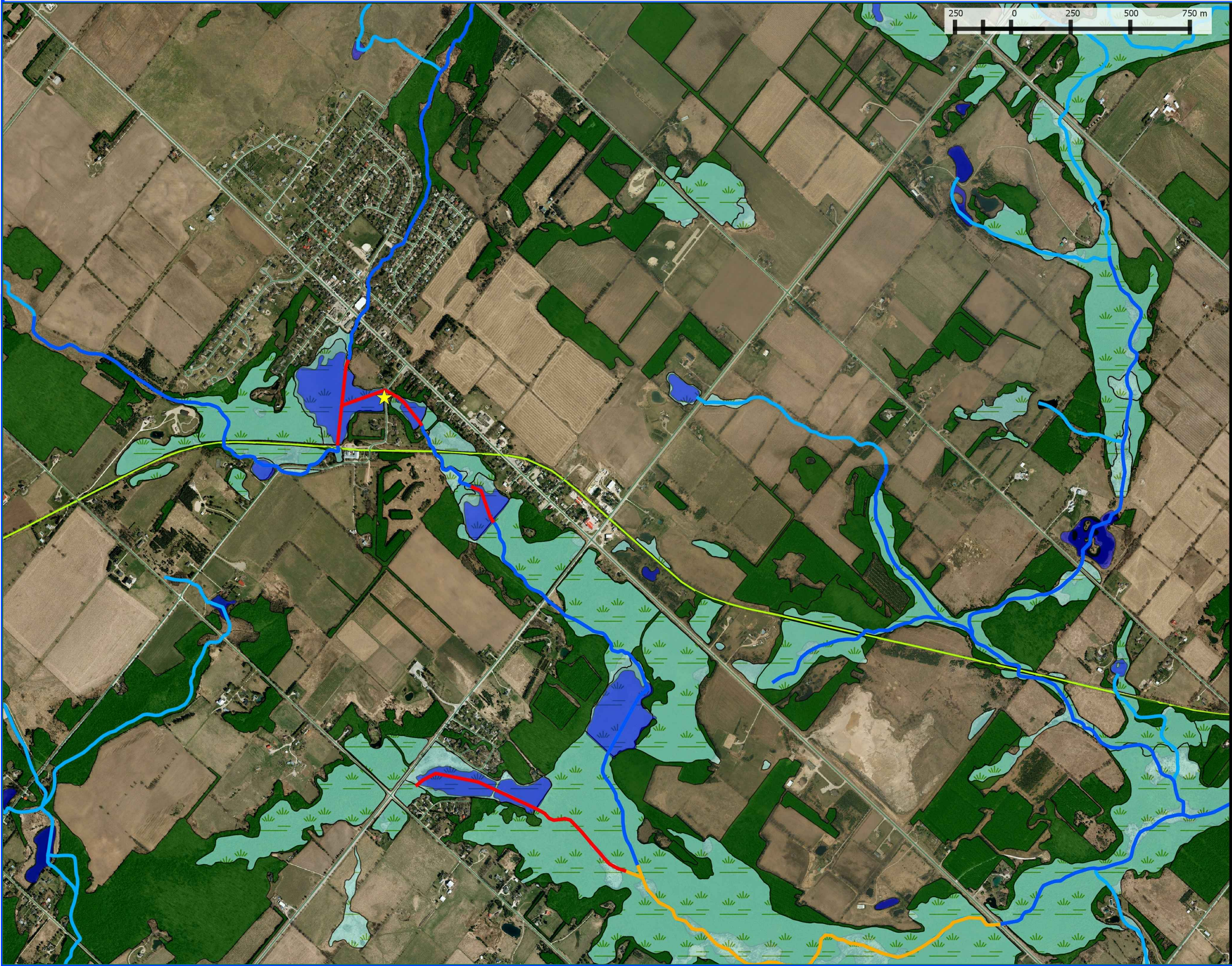
Title: Existing Natural Features

Project: Hillsburgh Dam
Municipal Class EA



Date: December 8, 2014
Scale: 1:10000
Project:

EXISTING NATURAL FEATURES



Legend

- ★ Hillsburgh Dam
- West Credit River Wetland Complex
- Wooded Area
- Waterbodies
- Watercourses
- County Trails

Fish Communities

- Cold water
- Cool water
- Warm water

Information Sources:

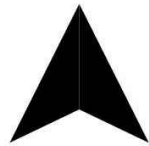
1. Wetland boundaries accessed from Land Information Ontario
Data accessed October 15, 2014
2. Waterbodies, Watercourses, and County Trails provided by Wellington County
Date: October 2, 2014
3. Fish Sampling Location provided by Credit Valley Conservation
Date: October 29, 2014
4. Fish Communities recreated from the Erin Service and Settlement Master Plan
Date: November 14, 2014



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Title: Existing Natural Features

Project: Hillsburgh Dam
Municipal Class EA



Date: November 18, 2014
Scale: 1:15000
Project:

HILLSBURGH POND



EXISTING BRIDGE



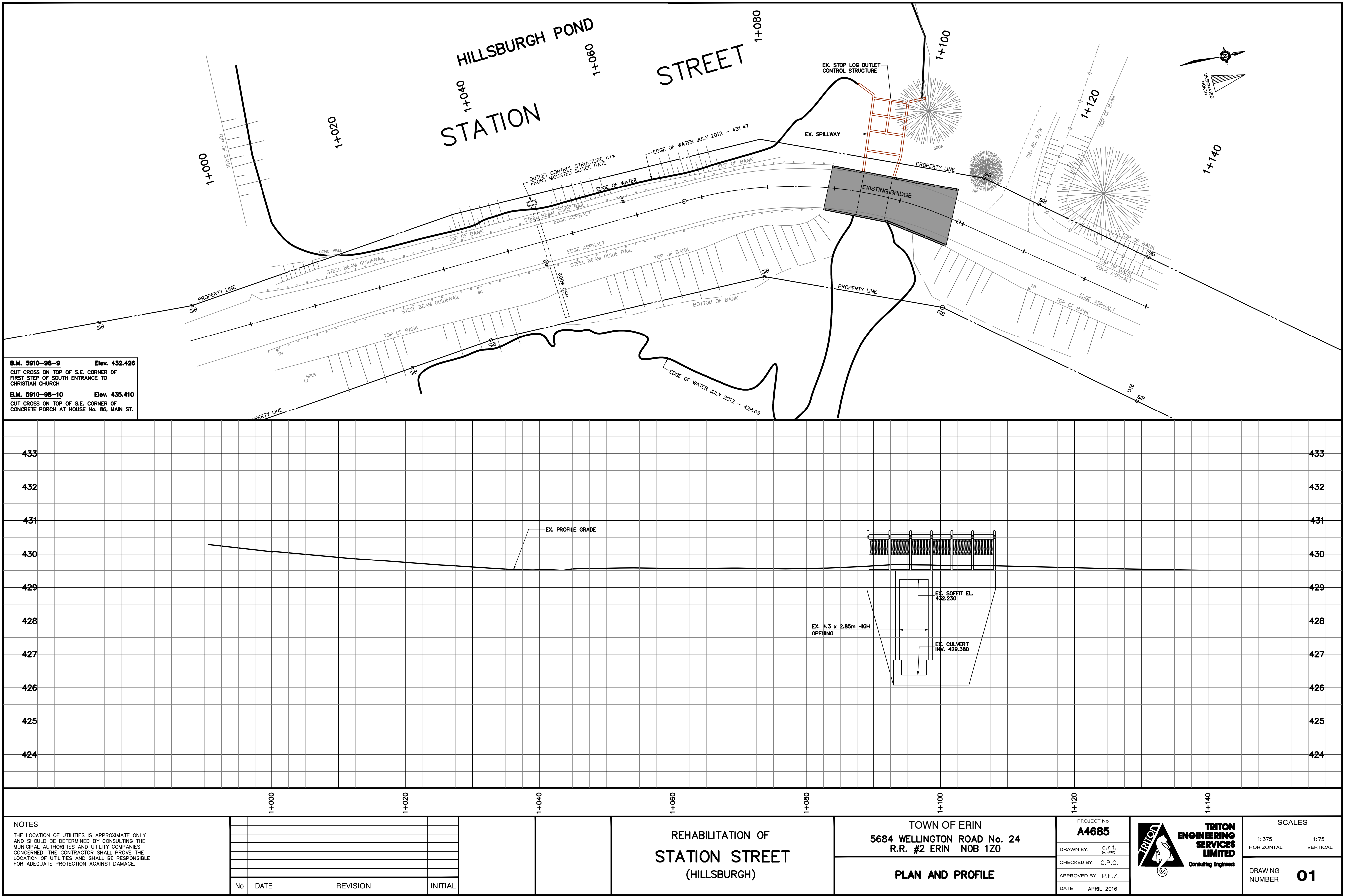
EXISTING EARTHEN BERM DAM



EXISTING STOP LOG STRUCTURE



EXISTING CONDITIONS - PLAN & PROFILE



ALTERNATIVES A & B

ALTERNATIVE A - DO NOTHING:

THIS IS THE "NULL" ALTERNATIVE, AGAINST WHICH ALL OTHERS WILL BE MEASURED. IF NOTHING IS DONE TO REPAIR OR REPLACE THE DAM AND BRIDGE, THE BRIDGE WILL CONTINUE TO DETERIORATE AND EVENTUALLY FAIL. IF A "CONSEQUENCE EVENT" IE, REGULATORY FLOOD EVENT OCCURS (SELECTED AS THE INFLOW DESIGN FLOOD (IDF) BASED ON CORRESPONDING "HIGH" HAZARD POTENTIAL CLASSIFICATION), THE DAM COULD POTENTIALLY FAIL IN ITS CURRENT CONDITION. IF NOTHING IS COMPLETED THE TOWN IS SUSCEPTIBLE TO THE ISSUANCE OF AN "ORDER" UNDER THE LAKES AND RIVERS IMPROVEMENT ACT.

ALTERNATIVE B - REHABILITATE HILLSBURGH DAM AND;

OPTION 1 - RECONSTRUCT STATION STREET BRIDGE - CONSTRUCT A NEW BRIDGE AT THE SAME LOCATION OR NEW LOCATION ALONG THE DAM TO CONTAIN THE REGULATORY FLOOD EVENT TO WITHIN A TOLERABLE STANDARD TO COMPLY WITH LAKES AND RIVERS IMPROVEMENT ACT REQUIREMENTS. THE DAM WILL BE REHABILITATED TO MEET THE MNRF'S CURRENT DAM SAFETY STANDARDS.

OPTION 2 - REHABILITATE STATION STREET BRIDGE - REHABILITATE THE EXISTING BRIDGE AT THE SAME LOCATION. THE DAM WILL BE REHABILITATED TO MEET THE MNRF'S CURRENT DAM SAFETY STANDARDS.

SUMMARY OF ALTERNATIVES

	OUTCOME						
	BRIDGE		DAM		POND		
ALTERNATIVE	CONSTRUCT NEW BRIDGE	REHABILITATE EXISTING BRIDGE	REHABILITATE DAM	DECOMMISSION DAM	EXISTING POND REMAINS	REMOVE POND TO WATERCOURSE	CONSTRUCT OFFLINE POND
A					✓		
B-OPTION 1	✓		✓		✓		
B-OPTION 2		✓	✓		✓		
C-OPTION 1		✓		✓		✓	
C-OPTION 2		✓					✓
D-OPTION 1	✓			✓		✓	
D-OPTION 2	✓						✓

ALTERNATIVES C & D

ALTERNATIVE C - REHABILITATE STATION STREET BRIDGE AND;

OPTION 1 - DECOMMISSION DAM - REHABILITATE THE EXISTING BRIDGE AT THE SAME LOCATION. THE DAM WILL BE DECOMMISSIONED, ALTERING THE POND TO A WATERCOURSE.

OPTION 2 - CONSTRUCT OFFLINE POND - REHABILITATE THE EXISTING BRIDGE AT THE SAME LOCATION. THE EXISTING DAM WILL BE DECOMMISSIONED, DECREASING THE EXISTING POND TO A SMALLER OFFLINE POND, PRIMARILY SEPARATING THE POND AND DIVERTING UPSTREAM WATERCOURSES.

ALTERNATIVE D - RECONSTRUCT STATION STREET BRIDGE AND;

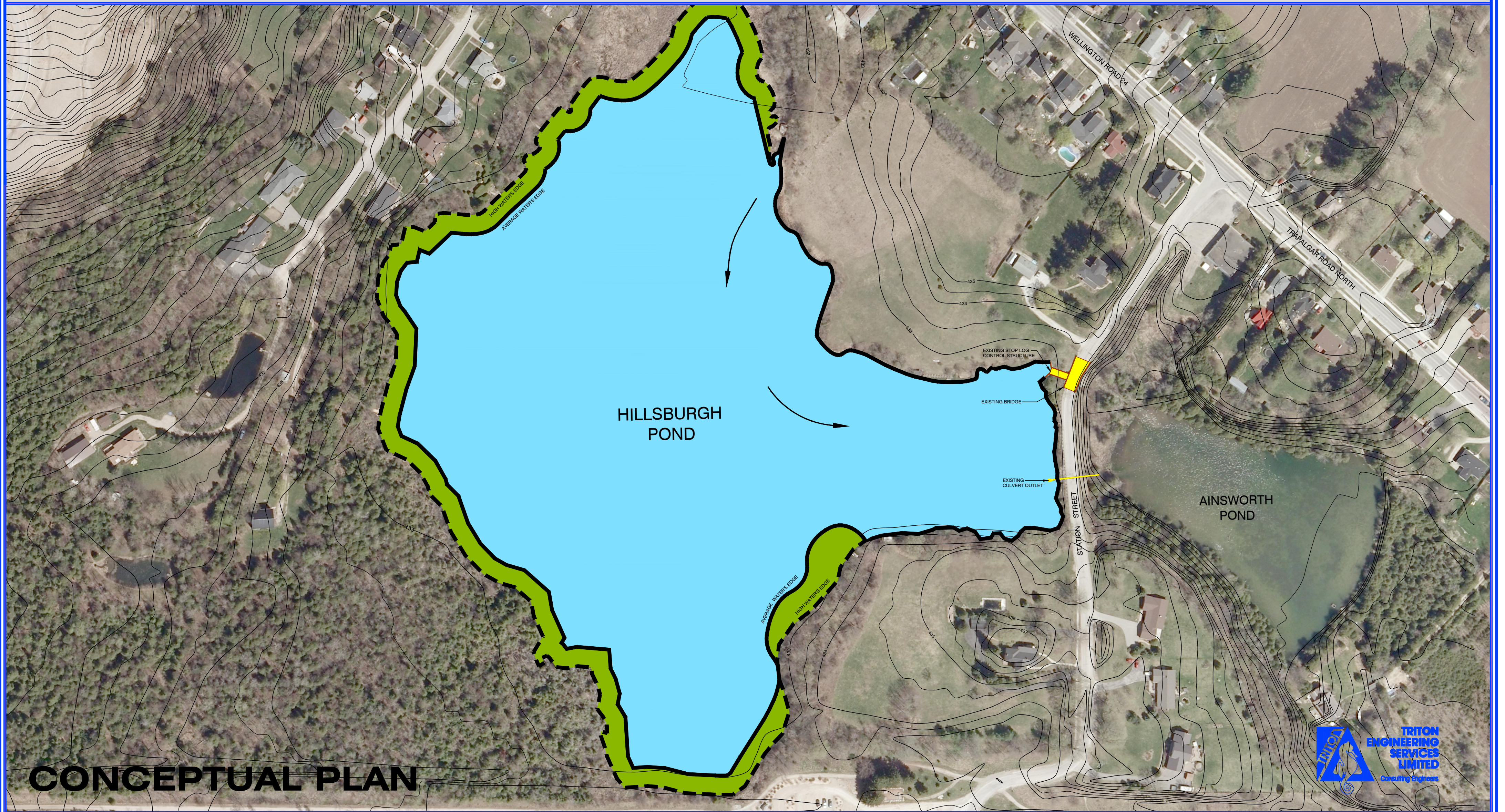
OPTION 1 - DECOMMISSION DAM - CONSTRUCT A NEW BRIDGE AT THE SAME LOCATION OR NEW LOCATION ALONG THE EXISTING DAM/ROADWAY. THE NEW BRIDGE WILL BE CONSTRUCTED UNDER THE MTO HIGHWAY DRAINAGE DESIGN STANDARDS. THE DAM WILL BE DECOMMISSIONED, ALTERING THE POND TO A WATERCOURSE.

OPTION 2 - CONSTRUCT OFFLINE POND - CONSTRUCT A NEW BRIDGE AT THE SAME LOCATION OR NEW LOCATION ALONG THE EXISTING DAM/ROADWAY. THE NEW BRIDGE WILL BE CONSTRUCTED UNDER THE MTO HIGHWAY DRAINAGE DESIGN STANDARDS. THE EXISTING DAM WILL BE DECOMMISSIONED, DECREASING THE EXISTING POND TO A SMALLER OFFLINE POND, PRIMARILY SEPARATING THE POND AND DIVERTING UPSTREAM WATERCOURSES.

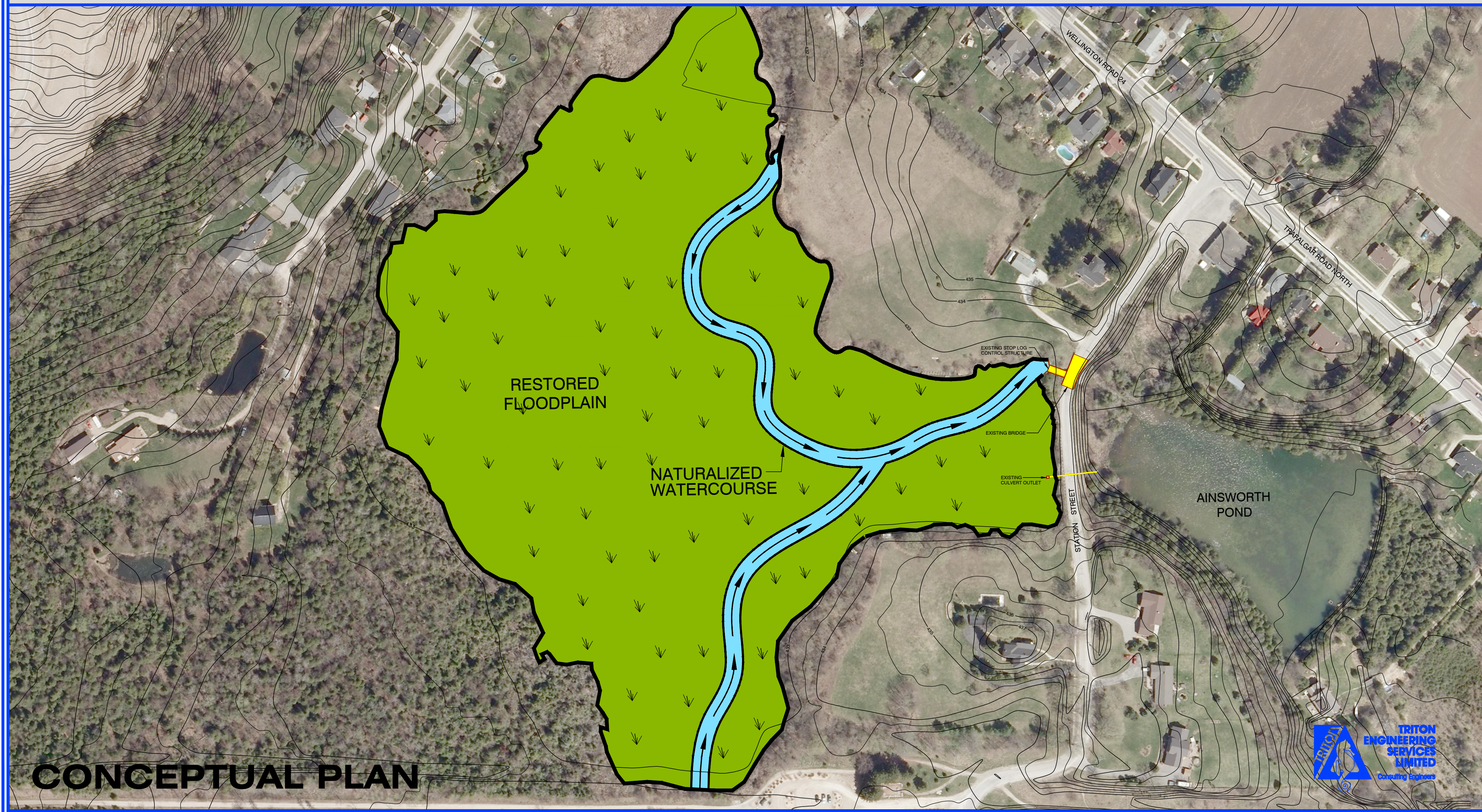
SUMMARY OF ALTERNATIVES

	OUTCOME						
	BRIDGE		DAM		POND		
	CONSTRUCT NEW BRIDGE	REHABILITATE EXISTING BRIDGE	REHABILITATE DAM	DECOMMISSION DAM	EXISTING POND REMAINS	REMOVE POND TO WATERCOURSE	CONSTRUCT OFFLINE POND
A					✓		
B-OPTION 1	✓		✓		✓		
B-OPTION 2		✓	✓		✓		
C-OPTION 1		✓		✓		✓	
C-OPTION 2		✓					✓
D-OPTION 1	✓			✓		✓	
D-OPTION 2	✓						✓

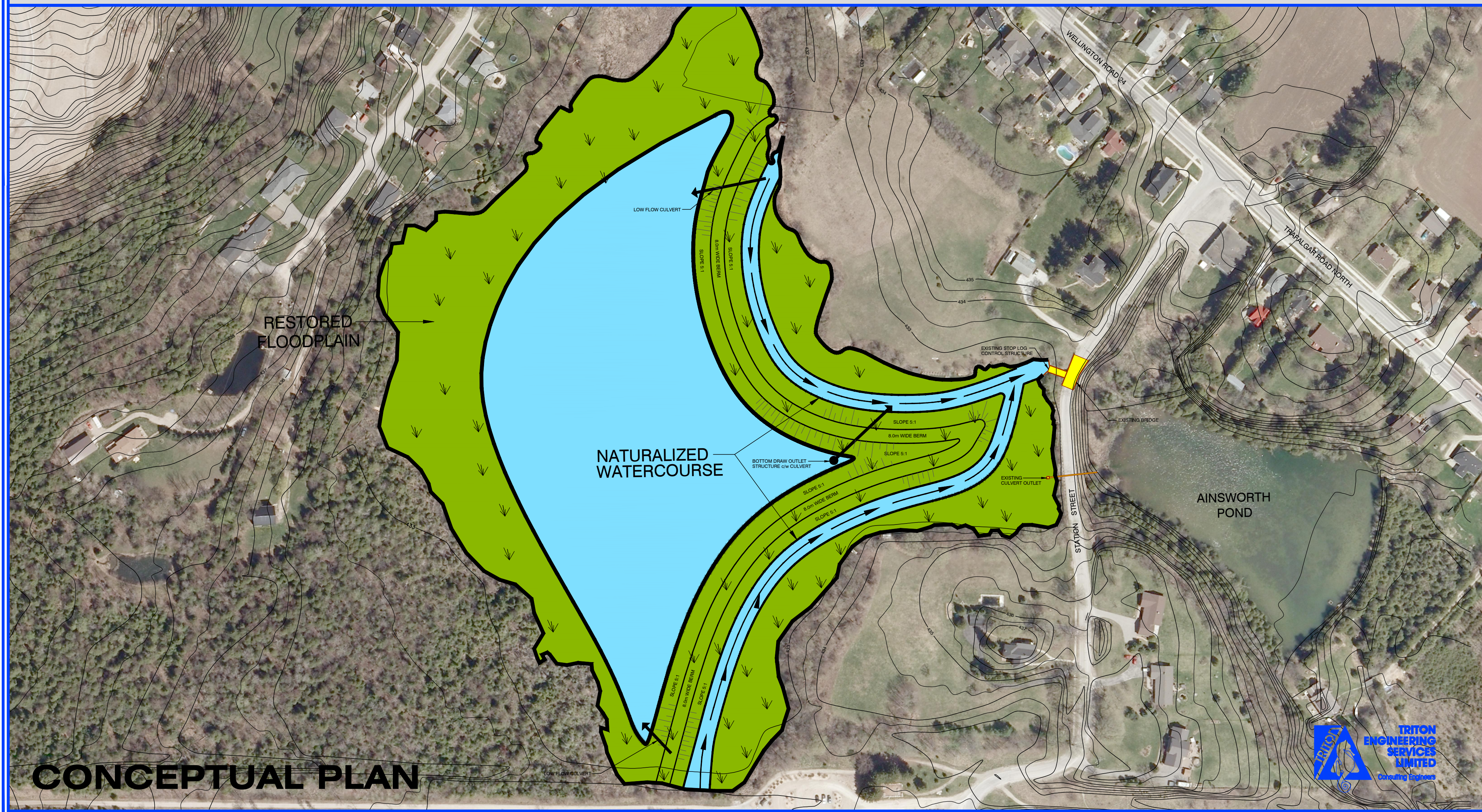
ALTERNATIVE A - DO NOTHING
ALTERNATIVE B - REHABILITATE DAM - OPTION 1 - RECONSTRUCT BRIDGE
ALTERNATIVE B - REHABILITATE DAM - OPTION 2 - REHABILITATE BRIDGE



ALTERNATIVE C - REHABILITATE BRIDGE - OPTION 1 - DECOMMISSION DAM
ALTERNATIVE D - RECONSTRUCT BRIDGE - OPTION 1 - DECOMMISSION DAM



ALTERNATIVE C - REHABILITATE BRIDGE - OPTION 2 - CONSTRUCT OFFLINE POND
ALTERNATIVE D - RECONSTRUCT BRIDGE - OPTION 2 - CONSTRUCT OFFLINE POND



PRELIMINARY COMPARISON AND RANKING OF ALTERNATIVES

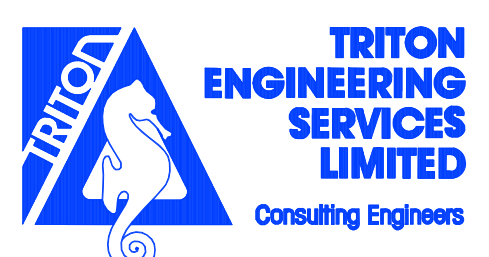
CRITERIA	Summary of Weighted / Measured Criteria	Weighting	ALTERNATIVE A "Do Nothing"	ALTERNATIVE B Rehabilitate Hillsburgh Dam and;		ALTERNATIVE C Rehabilitate Station Street Bridge and;		ALTERNATIVE D Reconstruct Station Street Bridge and;	
				OPTION 1 Reconstruct Station Street Bridge	OPTION 2 Rehabilitate 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 existing 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 existing 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 Enn. Possible negative impact to the Treed Fen Community if hydrological changes 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 Enn. Possible negative impact to the Treed Fen Community if hydrological changes 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

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
SOCIAL ENVIRONMENT									
Cultural Heritage	The Pond, Dam and the associated Bridge structure are considered heritage resources in the community. The level of heritage significance is measured by the resources artistic merit and historical and contextual value.	HIGH	No immediate impacts are anticipated, however; if left unmaintained, the artistic merit and contextual value can be lost through eventual deterioration.	The cultural value of the dam and in-situ pond will be least impacted through rehabilitation of the existing dam. Reconstruction of the bridge, although not most preferred, can be achieved through proper documentation and commemoration strategies.	The cultural value of the dam and in-situ pond will be least impacted through rehabilitation of the existing dam. Rehabilitation of the bridge will best preserve the heritage resource.	The cultural value of the dam and in-situ pond will be lost. Rehabilitation of the bridge will best preserve the heritage resource.	The cultural value of the existing dam and in-situ pond will be lost. Rehabilitation of the bridge will best preserve the heritage resource.	The cultural value of the existing dam and in-situ pond will be lost. Reconstruction of the bridge, although not most preferred, can be achieved through proper documentation and commemoration strategies.	The cultural value of the existing dam and in-situ pond will be lost. Reconstruction of the bridge, although not most preferred, can be achieved through proper documentation and commemoration strategies.
Ranking			10	12	12	10	10	9	9
Archaeological Significance	The surrounding areas of the Dam and Bridge may hold archaeological significance within the footprint of the construction area. This is measured through site and desktop investigations.	LOW	No impacts are anticipated. This will not address the current state of the bridge and dam.	No impacts are anticipated. Will require a Stage 2 archaeological assessment based on proposed footprint of new bridge.	No impacts are anticipated. Will require a Stage 2 archaeological assessment.	No impacts are anticipated.	No impacts are anticipated.	No impacts are anticipated. Will require a Stage 2 archaeological assessment.	No impacts are anticipated. Will require a Stage 2 archaeological assessment.
Ranking			1	3	3	3	3	3	3
Analysis of Water Rights	The affects each Alternative has on Riparian Water Rights, Mill Privileges, and Mill Rights. Measured through professional legal opinions.	LOW	No impacts are anticipated.	No impacts are anticipated.	No impacts are anticipated.	No impacts are anticipated.	No impacts are anticipated.	No impacts are anticipated.	No impacts are anticipated.
Ranking			3	3	3	3	3	3	3
Public Safety	The potential risk each Alternative has to public safety. Measured and quantified through professional judgement.	HIGH	High risk of dam failure due to a consequence or flooding event. High risk of bridge failure due to poor structural integrity. Eventual	Dam and Bridge will be upgraded to meet current industry and safety standards to improve pedestrian access and public safety. The risk of dam failure during a consequence event is still present however; improvements to the earthen dam structure and increases hydraulic of the bridge will reduce risk to public safety.	Dam will be rehabilitated to meet current dam safety standards to improve public safety. The risk of dam failure during a consequence event is still present. The Bridge will not meet current transportation standards for 2-lane traffic and safe pedestrian access.	Pond will be removed, greatly reducing the risks caused by the earthen berm dam. The Bridge will not meet current industry standards for 2-lane traffic and safe pedestrian access.	Pond will be removed, greatly reducing the risks caused by the earthen berm dam. Offline Pond still poses a risk of overtopping during a consequence event. The Bridge will not meet current industry standards for 2-lane traffic and safe pedestrian access.	Pond will be removed, greatly reducing the risks caused by the earthen berm dam. Bridge will be upgraded to meet current industry and safety standards to improve public safety.	Pond will be removed, greatly reducing the risks caused by the earthen berm dam. Offline Pond still poses a risk of overtopping during a consequence event. Bridge will be upgraded to meet current industry and safety standards to improve public safety.
Ranking			9	11	9	10	9	12	10
Total Ranking			23	29	27	26	25	27	25
ECONOMIC ENVIRONMENT									
Capital Construction	Overall construction costs of each Alternative, measured through standard engineering benchmark cost estimates	HIGH	Estimated cost attributed to an emergency dam decommissioning and restoration and bridge replacement = \$1,995,000. This is not considered a long term solution and will not satisfy Provincial legislation.	Estimated cost includes the rehabilitation of the earthen berm dam, reconstruction of a bridge to convey the Regulatory Flood and rehabilitation of Station Street = \$2,420,600	Estimated cost includes the rehabilitation of the earthen berm dam, rehabilitation of the existing bridge, eventual replacement of the bridge and rehabilitation of Station Street = \$3,019,100	Estimated cost includes dam decommissioning and restoration, rehabilitation of the existing bridge, eventual replacement of the bridge and rehabilitation of Station Street = \$3,597,650	Estimated cost includes dam decommissioning and restoration, construction of new earthen berm for offline pond, rehabilitation of the existing bridge, eventual replacement of the bridge and rehabilitation of Station Street = \$4,236,050	Estimated cost includes dam decommissioning and restoration, replacement of the existing bridge, eventual replacement of the bridge and rehabilitation of Station Street = \$2,999,150	Estimated cost includes dam decommissioning and restoration, construction of new earthen berm for offline pond, replacement of the existing bridge and rehabilitation of Station Street = \$3,637,550
Ranking			9	12	10	10	9	10	9
Regular Operations and Maintenance	Overall cost for operation and maintenance of each Alternative based on engineering cost estimates for regular dam and bridge operations and maintenance	HIGH	No operational or maintenance costs. This is not considered a long term solution and will not satisfy Provincial legislation.	Earthen berm will be rehabilitated to an acceptable standard but may require long term maintenance for operation of stop-log control structures	Earthen berm will be rehabilitated to an acceptable standard but may require long term maintenance for operation of stop-log control structures. Bridge will require regular assessments and maintenance every 5-7 years.	Earthen berm will be eliminated with no associated maintenance costs. Bridge will require regular assessments and maintenance every 5-7 years.	Earthen berm will be eliminated with no associated maintenance costs. Maintenance of offline pond controls will be required. Bridge will require regular assessments and maintenance every 5-7 years.	Earthen berm will be eliminated with no associated maintenance costs. New bridge will have no anticipated long term maintenance requirements.	Earthen berm will be eliminated with no associated maintenance costs. New bridge will have no anticipated long term maintenance requirements. Maintenance of offline pond controls will be required.
Ranking			10	10	9	10	10	12	10
Economic Feasibility/Liability	In the event of a dam failure, dam owners can be held liable for damage inflicted upon persons or property. This is measured by professional judgement related to the potential for and quantification of damage to persons or property.	HIGH	Dam owners will be held liable for associated costs inflicted to persons or property due to an uncontrolled dam or bridge failure.	Dam owners will be held liable for associated costs inflicted to persons or property due to an uncontrolled dam or bridge failure. Risk of dam or bridge failure will be reduced due to infrastructural upgrades.	Dam owners will be held liable for associated costs inflicted to persons or property due to an uncontrolled dam or bridge failure. Risk of dam or bridge failure will be reduced due to infrastructural upgrades.	Dam owner's liability is greatly reduced with the elimination of the head pond and rehabilitation of the existing bridge.	Dam owner's liability is greatly reduced with the elimination of the head pond and rehabilitation of the existing bridge however; a liability remains as offline pond's earthen berm is still considered a dam.	Dam owner's liability is greatly reduced with the elimination of the head pond and reconstruction of a new bridge.	Dam owner's liability is greatly reduced with the elimination of the head pond and reconstruction of a new bridge however; a liability remains as offline pond's earthen berm is still considered a dam.
Ranking			9	10	10	12	10	12	10
Total Ranking			28	32	29	32	29	34	29
AGENCY REGULATIONS									
Permits/Approvals	Alternatives are subject to aquiring applicable Provincial and Federal Permits. This criteria is measured through a screening process for permissibility	HIGH	Under Provincial legislation the dam owners are obliged to determine a long term solution for the Dam and Bridge.	Further screening is required to determine if this is permissible to the CVC and MNRF.	Further screening is required to determine if this is permissible to the CVC and MNRF.	Further screening is required to determine if this is permissible to the CVC and MNRF.	Further screening is required to determine if this is permissible to the CVC and MNRF.	Further screening is required to determine if this is permissible to the CVC and MNRF.	Further screening is required to determine if this is permissible to the CVC and MNRF.
Ranking			9	11	11	11	11	11	11
Total Ranking			9	11	11	11	11	11	11
OVERALL RANKING			107	128	119	116	117	121	119

RANKING MATRIX

	Negative	Negative-Neutral	Neutral	Positive
WEIGHTING	SCORING			
LOW	1	2	3	4
MED	5	6	7	8
HIGH	9	10	11	12



NEXT STEPS

- **RESPOND TO COMMENTS AND SUGGESTIONS FROM PUBLIC AND AGENCIES BASED ON PRESENT INFORMATION AND PRELIMINARY PREFERRED ALTERNATIVE**
- **FINALIZE SELECTION OF A PREFERRED ALTERNATIVE FOR A "LONG TERM" SOLUTION OF THE HILLSBURGH DAM AND BRIDGE**
- **COMPLETE ENVIRONMENTAL STUDY REPORT**
- **ISSUE NOTICE OF PROJECT COMPLETION AND POST FOR 30 DAY PUBLIC AND AGENCY REVIEW PERIOD**
- **RESPOND TO ANY REMAINING PUBLIC AND AGENCY CONCERNS**