Environmental Screening Report
Final Report

Birdsall Bridge Replacement (Site No: 099019)
County of Peterborough

Project Number:
OT-09-903-00-OT

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1. Introduction

GENIVAR has been retained by the County of Peterborough to provide engineering services for the structural renewal of the Birdsall Bridge. The County has chosen to proceed with the structural renewal of this crossing as a result of the age and condition of the existing structure. In accordance with Ontario's Environmental Assessment Act (R.S.O. 1990, Chapter E.18) the County has undertaken a review and consultation process for the purpose of selecting a renewal alternative and obtaining feedback on the proposed design concept.

The Birdsall Bridge is located on River Road 1.0km east of Asphodel 3rd Line. It is a single lane structure over the Ouse River. County records indicate the structure was constructed in 1930.

2. Municipal Class Environmental Assessment

Most work undertaken in Ontario by either the provincial or municipal governments is regulated by Ontario's Environmental Assessment Act (R.S.O. 1990, Chapter E.18). The act endeavours to promote good planning by determining and managing the potential effects of a project prior to implementation. It does so by providing a vehicle for public concerns to be heard and a framework to review and assess the impact of the project on the built (engineering), economic, social, cultural and natural environments.

In order to simplify and clarify the requirements of the Act, the Class Environmental Assessment (EA) process was developed. The Class EA process details consultation and review requirements for work routinely carried out by municipalities and the province. The Class EA process for work performed by municipalities is outlined in Municipal Class Environmental Assessment (2000, amended 2007). This document addresses the EA process for Municipal Road Projects such as the Birdsall Bridge.

The replacement the Birdsall Bridge is considered a schedule B project under the Municipal Class EA process. The schedule of a project determines the amount of consultation and review that the municipality must undertake in order to ensure the public has sufficient opportunity to comment and that a balance of the needs of the built (engineering), economic, social, cultural and natural environments is reached.

2.1. Structural Renewal Alternatives

In 2009, the County of Peterborough undertook a Class EA for the Structural Renewal of the Birdsall Bridge. The County's intention in 2009 was to replace the Birdsall Bridge. They undertook a Municipal Class EA, including public consultation, wherein the only structural renewal alternative presented to the public was the replacement of the structure (Alternative 1 below).

Based on the results of the initial consultation the County undertook a second consultation in 2011. The purpose of this second consultation was to assess the alternative of rehabilitating the structure and then eliminating the crossing at the end of the service life of the structure (5-10 years). The following are the alternatives that were presented to the public and review agencies during the latest round of consultation.

- **Alternative 1:** Replacement of the Structure
  - Scope of Work
    - Replacement of the existing pony truss on the same alignment as the existing bridge. Work would include the removal of the existing structure, the installation of a new foundation, abutments, wingwalls and superstructure. The scope of work would also include modifications to the approaches as required to accommodate the new structure.
  - Costs
    - The Cost of the replacement option will be significantly higher than the cost of rehabilitation but will provide an estimated service life of 75 years. (Budgetary Estimate $600,000.00)

- **Alternative 2:** Structure Rehabilitation followed by Removal of Crossing or conversion to a Recreational Crossing
  - Scope of Work
    - Scope of work for this alternative will include rehabilitation of the existing structure in order to maximize the lifespan of existing crossing at minimal costs. The estimated lifespan of the rehabilitated structure would be 5 to 10 years.
    - Structure will continue to be load posted. A structural review will be carried out to determine the revised load posting.
    - Following the 5-10 year of remaining service life the crossing would be eliminated or converted to a recreational crossing.
  - Costs
    - Capital costs for rehabilitation of the existing structure will be significantly less than the replacement costs of the structure. (Budgetary Estimate $100,000.00)
    - Removal of the crossing at the end of its extended service life will eliminate future lifecycle costs. Removal of the structure would represent minimal capital costs. (Budgetary Estimate $150,000.00)
    - Replacement of the structure at the end of its service life with a recreational crossing would incur future lifecycle costs, but the cost of maintaining a recreational structure is generally much less than the cost of maintaing a vehicular structure. The initial capital cost of a recreational crossing would vary significantly with the uses specified. (Budgetary Estimate $300,000.00-$600,000.00)

3. Existing Conditions

A site inspection was carried out by GENIVAR in November of 2009. The purpose of this inspection was to acquire information about the existing bridge, roadway and waterway for use

in the analysis of renewal alternatives and design. The investigation included a topographical survey, measurements, general observations and photographs of relevant conditions and features.

A geotechnical investigation was also carried out in November of 2009 by Geo-Logic Incorporated. As part of the investigation, four (4) boreholes were advanced, one (1) directly behind each abutment to assess conditions for foundations and one (1) on each approach to determine the roadway structure.

In addition to the site inspection and geotechnical investigation, interviews of maintenance personnel were carried out to assess the performance of the existing structure. This is principally a tool for the hydraulic design process but can also assist in identifying other issues such as geometric inadequacies and/or safety concerns.

- Maintenance personnel have reported that there is no record of the existing structure being overtopped and that they have never experience relief flow on the approaches.
- No issues with safety at the structure have been noted although the geometry of the road does limit the speed at which the roadway and structure can be traveled.

3.1. Engineering – Structural

The existing structure is a single span steel pony truss with a timber deck. The truss is supported on precast concrete bearing seats installed over of timber cribs. The County's records indicate that the structure was constructed in 1930. Information provided by residents, including photographs, indicates that the superstructure, the steel pony truss, was formerly installed on County Road 2 and was relocated sometime in the 1950's to River Road. It is likely that the abutments date from 1930 and that the original superstructure was replaced in 1950 with the pony truss. Residents have also informed the County that a crossing has been present at this location since the 1870's.

The structure has a clear span of 18.9m, measured between the face of the abutments. The overall deck length is 22.4m and the deck width is 4.9m. The roadway over the structure is 4.4m wide. A steel railing is provided over the structure for pedestrians and a steel curb is provided for vehicular traffic.

The super structure is generally in fair material condition with localised areas in poor condition but the substructure is in poor condition with areas in very poor condition. The following general observations were made regarding the condition of the structure.

- Light corrosion is present on most steel elements and moderate to severe corrosion was present on the stringers especially at the ends of the deck.
- The concrete bearing seats and ballast walls are severely scaled, have numerous medium and wide cracks, are severely stained and generally in poor condition.
- The timber cribs exhibit extensive rot and section loss.

- The timber deck exhibits a few areas of light to moderate rot.

3.2. Engineering – Roadway

River Road is a seasonally maintained, recreational road used principally by seasonal residents and a few adjacent land owners. The County has provided an AADT of 36 and 2% truck traffic for River Road at the structure. River Road would therefore be considered a low volume road as defined by the Ministry of Transportation's (MTO's) Structure Manual (April, 2011), Appendix A - Guidelines for the Design of Bridges on Low Volume Roads.

The River Road is posted at 60km/hr. The existing roadway width over the structure is 4.24m. The MTO Guidelines for Low Volume Roads stipulate a 3.0m lane width with 0.5m side clearance, providing a total roadway width of 4.0m for operating speeds up to 70km/hr. Therefore, the existing deck width conforms to current geometric standards.

The traffic barrier over the structure does not conform to current design standards and the lack of approach barriers conforming to current design standards is considered a hazard in accordance with the MTO's Roadside Safety Manual, 1993. For a low volume road with an Annual Average Daily Traffic (AADT) <100 a Low Volume Performance Level (LVPL) 1 is recommended by the MTO's design guidelines. This level of railing consists of a timber curb.

The approach roadways are under the jurisdiction of the lower tier municipality, the Township of Asphodel-Norwood. As a result, it is the County's intention to minimise the extent of work carried out on the approaches. Any modifications to the approaches will therefore be limited to those works necessary to carry out the selected renewal alternative. The approach roadways were surveyed as part of our inspection and we have provided the following comments:

- The existing approach roadway slopes slightly away from the bridge and are located on a long tangent section.
- The approach roadway is approximately 3.9m wide with 0.65m wide shoulders. This does not conform to any current design standards.

3.3. Engineering – Hydraulic

The upstream waterway is approximately 30m wide and 1.5m to 2.0m deep. The streambed consists of silty muck. The banks are muddy and well vegetated with heavy stands of deciduous trees. During our site visit, the water level appeared to have recently dropped and a 1.0m to 1.5m strip of streambed was visible along the edges of the channel.

The downstream waterway is similar to the upstream but narrower, approximately 25m wide.

The flood plain upstream and downstream of the structure appears to be low lying and marshy in areas. On the southeast corner, the land has been cleared and is fenced for agricultural use.

The vertical clearance between the underside of the existing structure and the water level observed during our site visit was approximately 1.2m. During subsequent site visits the vertical clearance was measured and the clearance during normal water levels is approximately 0.9m.

Reports from maintenance personnel indicate that the existing structure does not overtop during flood events and that the approach roadways do not experience relief flow. They have indicated that water levels do rise during large flood events but have never reached the elevation of the underside of the bottom chord.

3.4. Engineering – Geotechnical

A geotechnical investigation was carried out by Geo-Logic Inc. to determine existing conditions and provide recommendations for the foundations of the proposed structure and the reconstruction of the approaches. Four (4) boreholes were advanced; one (1) directly behind each abutment to assess conditions for foundations and one (1) on each approach to determine the roadway structure.

Asphalt ranging between 25mm and 65mm was found on the approaches. Beneath the asphalt, layers of fill extending to between 1.0m and 3.0m deep were present. Beneath the fill organics were observed in the boreholes at the structure and on the west approach. Following the organics and fill a layer of sitly sand was present in all boreholes and below that, a layer of dense to very dense till was found. The boreholes at the structure were terminated in this layer of fill.

3.5. Social, Cultural & Economic

As noted in the roadway section above, the existing structure has a very low volume of traffic. During the public consultation other users were identified including but not limited to the adjacent agricultural land owners as well as various recreational users. The adjacent agricultural land owners own land on both sides of the river and use the bridge to move feed and livestock. The recreational users include residents of the vacation communities at the ends of Asphodel 2nd Line and Asphodel 3rd Line, local equestrian stables, cyclists, snow mobilers, pedestrians and hunters. Additionally, River Road crosses the Trans Canada Trail network approximately 800m east of the bridge. As a low volume road it provides suitable access for many trail users.

Through the consultation process Transport Canada, who has jurisdiction under the *Navigable Waters Protection Act* (R.S., 1985, c. N-22), has indicated that Ouse River at this location is navigable and that the existing vertical clearance at the structure is inadequate.

During the second round of public consultation interest in the project and response to the renewal alternatives has been high. In addition to the standard notices and public open house, the County was asked to present their proposal at an Asphodel-Norwood Township Council

Meeting and have issued additional correspondence to address questions and concerns from the Open House.

3.6. Natural Environmental

The Birdsall Bridge spans the Ouse River approximately 2.5km north of where the river discharges into Rice Lake. The upstream watershed is approximately 280km^2. The Environmental Regulatory Authorities in this area include the Ontario Ministry of Natural Resources (MNR), the Otonabee Region Conservation Authority (ORCA) and Fisheries and Oceans Canada (DFO). Fisheries and Oceans Canada has agreements with the conservation authorities to address most projects. If a project is sufficiently harmful, it will be referred to DFO by the conservation authority.

A preliminary scope of work and general arrangement drawing has been submitted to the MNR and ORCA and a site meeting was carried out with ORCA on January 12, 2012.

The MNR has supplied information on Species at Risk (SAR) and the nature of the aquatic habitat of the Ouse River. Species at risk known to exist in the vicinity of the Birdsall Bridge include:

- Snapping Turtle (Special Concern)
- Butternut (Endangered)
- Least Bittern (Threatened)
- Black Tern (Special Concern),
- Eastern Ribbon Snake (Special Concern),
- Northern Map Turtle (Special Concern)
- Blanding's Turtle (Threatened)

The MNR have specified the following mitigation measures to avoid conflict with the above noted species. Provided that conflict can be avoided, no further action will be required with regards to species at risk.

- The MNR recommends that in areas where Species at Risk turtles occur no work occur from May 1st through to September 30th to avoid potential impacts to nesting turtles and nests. If work is to occur during May-September, they recommend installing a fence (e.g. silt fencing) or appropriate barrier in March or April (prior to nesting season) along the entire edge of the proposed work area to deter any nesting turtles (as well as other reptiles or amphibians) from entering the construction area. This fencing should be maintained and checked each day prior to activities commencing to ensure species are not trapped inside the work area.
- The MNR recommends that no in-water works occur from October 15th to April 15th to protect hibernating turtles.

- The MNR recommends that any vegetation clearing or grubbing be scheduled outside of the breeding bird season (April 15th to July 31st) to avoid impacts to species at risk birds present (and all other birds present).

The MNR have also provided the following information on the aquatic habitat in the Ouse River.

- **Thermal Regime:** Warm water
- **Habitat Information:** The area contains: Ouse River Marsh Regionally Significant Life Science, Area of Natural and Scientific Interest (ANSI), downstream side of the bridge contains important spawning areas for muskellunge
- **Fish Species:** rock bass, white sucker, muskellunge, bluegill, largemouth bass, golden shiner, yellow perch, blunt nose minnow, striped bass, smallmouth bass
- **In-water work timing window:** April 1-June 30
- **MNR fisheries management objectives:** To manage the warm water fish community where muskellunge are the top predator species based on naturally reproducing populations.
- **Fish and habitat sensitivity:** Moderate – ensure that proposed work is properly mitigated to avoid/minimize impacts to muskellunge and the weed beds they use for spawning

Both the MNR and ORCA have informed the County that Birdsall Bridge is located in the immediate vicinity of provincially significant wetlands and directly within an identified fish spawning area. ORCA has indicated that no in-water work should occur between March 15th and June 30th in order to prevent disturbing fish habitat during the spawning period.

4. Consultation

4.1. Review Agency and Stakeholders

As part of the Municipal Class EA, the following stakeholders and review agencies have been notified about the project:

- Fisheries and Oceans Canada
- Transport Canada - Marine
- Parks Canada
- Ministry of Natural Resources – Peterborough (MNR)
- Ministry of the Environment
- Otonabee Region Conservation Authority (ORCA)
- Peterborough, Victoria, Northumberland and Clarington Catholic School Board
- Kawartha Pine Ridge District School Board
- Township of Asphodel-Norwood
- Alderville First Nations
- Curve Lake First Nations
- Hiawatha First Nations
- Ontario Provincial Police (OPP)

- Peterborough County Emergency Medical Services (EMS)
- Hydro One - Central Zone 3A
- Bell (Ontario One Call)
- Enbridge (Ontario One Call)

To date we have received communications from the MNR, ORCA, the Curve Lake First Nations and Transport Canada.

The MNR and ORCA have responded as detailed above in Section 3.6.

As noted above in section 3.5, Transport Canada has indicated that Ouse River at this location is navigable and that the existing vertical clearance at the structure is inadequate. They have indicated that a replacement structure at this location, Alternative 1, will have to be raised to provide additional vertical clearance for the passage of vessels. They have indicated that a clearance of up to 1.5m from the Normal High Water Level (NHWL) may be required. This would correspond to an increase of up to 700mm in the soffit elevation.

We have also been contacted by the Curve Lake First Nations. They have indicated that they have no records pertaining to this particular site, but that their peoples were present in the area. They have indicated that if any archaeological finds, especially burial sites are discovered during excavations, the first nations should be notified immediately and the work stopped until appropriate action can be taken.

4.2. Public Consultation

The public has been kept informed about this project through notices issued by mail and advertisements in local papers. Two public information sessions were also held for the public to view the proposed work, the first on February 18, 2010 presenting only Alternative 1 and the second on November 16, 2011 presenting Alternative 1 and 2.

Following the first notice issued to the public, the County received the following questions and comments. The County's responses to the comments and questions are provided below.

Q. Given the low traffic volumes and short detours has removing the crossing been put forwards as an alternative to replacement?
   A. Removing the crossing was initially dismissed as being unfeasible given the negative impact on local permanent and seasonal residents. Upon review by the County, it has been decided to present this alternative at a public meeting to more accurately assess the impact on the community.
Q. What plans are in place, if any, to address the condition of the approach roadways?
   A. The approach roadways for the structure are the jurisdiction of the townships and as a result are beyond the scope of this project. Approach barriers conforming to current design standards will be installed as part of the structure replacement.
Q. How are the recipients of stakeholder notices determined?

A. The County provided the addresses for the owners of all properties within a 1.0km radius of the structure from their database.

Q. Will detour routes be upgraded to accommodate an increased volume of traffic during construction?

A. A suitable detour route will be selected as part of the detailed design phase and the detour maintained as necessary to accommodate the temporary increase in traffic volumes.

At the Public Information Session, on February 18, 2010, the response to the proposed replacement structure was generally favourable.

As a result of the preliminary engineering investigations and feedback from the community, the County decided to examine the possibility of removing the vehicular crossing completely. In order to ascertain the viability of this alternative (Alternative 2) the County issued a second round of notices and a second public information session was held on November 16, 2011. The County also presented the proposal to the Asphodel-Norwood Township Council on December 15, 2011.

The comments received from this round of consultation generally indicated that Alternative 1, the replacement of the existing structure was preferred by local residents and the Township over Alternative 2, rehabilitation of the structure followed by either the elimination of the crossing or the replacement of the vehicular crossing with a recreational crossing.

5. Analysis of Structural Renewal Alternatives

The impacts of the structural renewal alternatives on the natural, social, cultural, built and economic environments have been reviewed. The built environment has been reviewed under the heading Engineering. A summary of the review is presented below.

5.1. Engineering

5.1.1. Structural

The structure is at the end of its usable lifespan and a replacement alternative would provide a crossing that would be adequate to convey all legal vehicles and would provide a significantly longer service life. Rehabilitation would arrest the deterioration for a maximum of 10 years with no increase in structural capacity. The cost of the replacement structure, though relatively in expensive for this type of work, would be in the order of six (6) times the cost of rehabilitation.

5.1.2. Roadway

Improvement of the roadway is beyond the scope of work at this location except as it relates to the structure approaches. For a replacement structure, this work would be much more extensive as the roadway would have to be raised in order to accommodate the proper navigational clearance. Significant modification of the approaches would incur

additional costs and may require additional environmental studies.

No modification would be required as part of a rehabilitation. Elimination of the crossing at the end of the service life would require the installation of a suitable turnaround. This would require the purchase of additional land from the adjacent owners and may also require additional environmental review.

5.1.3. Hydraulic

For a replacement structure, modifications to the hydraulic opening and elevation of the approaches will impact the hydraulic characteristics of the crossing. A study would be required to determine the impact of a replacement structure and the requirement of any mitigation measures.

No study would be required for the rehabilitation alternative as the hydraulic opening would not be affected.

5.1.4. Geotechnical

The following recommendations were provided for a proposed replacement structure. For the foundation of the proposed replacement structure, the report recommends the use of piles driven to a layer of dense till located 7m to 9m below the level of the roadway. The recommended pavement structure on the approaches consists of:

- a 50mm thick HL3 asphalt surface course
- a 60mm thick HL8 asphalt base course
- a 150mm thick granular base
- a 450mm thick granular sub-base

Some additional recommendations included in the geotechnical report are as follows:

- Subsurface should proof rolled and/or approved by qualified personnel prior to placement of fill.
- Unprotected embankments should be sloped at 3 horizontal: 1 vertical.
- Excavations should be carried out in conformance with Occupational Health and Safety Act (OHSA) Regulations for Construction Projects.
- Soils conform to Type 3 classification as per OHSA Regulations for Construction Projects.
- Excavations less than 1.2m in depth above the water table may be constructed with vertical unsupported walls.
- Unsupported walls of excavations exceeding 1.2m in depth must be maintained at a maximum gradient of 1 horizontal: 1vertical.
- Existing fill may be reused as selected sub-grade material on approaches but native and organic soils are unsuitable.
- Piling operations should be supervised by qualified personnel throughout.

Rehabilitation of the existing structure would be carried out so as not increase or alter the load on the existing foundations. As a result no foundation work would be required.

5.2. Social, Cultural & Economic Environment

The social, cultural and economic impacts of municipal works can be both short term and long term. The following impacts were identified and reviewed.

- The impact of both alternatives on vehicular traffic (long term)
- The impact of both alternatives and other users (long term)
- The impact of a construction detour on all users (short term)
- The impact of construction on neighbouring land owners (short term)
- The effects of both alternatives on navigational clearances (long term)
- The cultural impact of the loss of the crossing (long term)

Vehicular Traffic

River Road is a very low volume road with an AADT of 36 and 2% volume of truck traffic. The posted speed is 60km/hr but the substandard geometry means that most vehicles travel the road more slowly. The detour at this structure from one side of the structure to the other is approximately 5.3km.

Considering the above noted factors, the circulation of normal vehicular traffic would experience minimal effect from the removal of this crossing. It is anticipated that improving the crossing (i.e. providing railings, improving the cross section, increasing structural capacity, etc.) would also have little effect on the traffic volumes, as a result of the poor condition of the approach road; however, it would make the crossing itself safer for users.

Other Users

Other users of the crossing that were identified during the EA process included the adjacent agricultural land owners and various recreational users. The adjacent agricultural land owners own land on both sides of the river and use the bridge to move feed and livestock. The recreational users include residents of the vacation communities at the ends of Asphodel 2nd Line and Asphodel 3rd Line, local equestrian stables, cyclists, snow mobilers, pedestrians and hunters.

River Road crosses the Trans Canada Trail network approximately 800m east of the bridge. As a low volume road it provides suitable access for many trail users.

The removal of the structure would impact the adjacent agricultural land owners and recreational users more profoundly than it would vehicular traffic. These users have expressed concerns about the difficulty in using nearest alternate crossings, the bridge on County Road 2 and the old railway bridge on the Trans Canada Trail. Principally users indicated that the County Road 2 crossing was inappropriate because of the speed and

volume of traffic. Some recreations users also prefer the Birdsall Bridge to the trail structure because the structure isn't suitable for horses and recreational vehicles are prohibited.

Construction Detour

The proposal to close the road to traffic during construction was presented to the public, stakeholders and review agencies during the EA process. During the process, the closure of the crossing for construction was not identified as a serious inconvenience by the affected parties but it was indicated that they should be informed in advance of scheduled closure and be kept informed of delays in the work that would affect scheduled closure.

Neighbouring Land Owners

The lands adjacent to the structure are owned by agricultural operations. There are no residences within 300m of the structure. As a result noise, damage/disruption of property, placement of construction staging areas will not significantly affect the adjacent land owners. Provisions and mitigation measures designed to limit these impacts will be included in the contract.

Navigational Clearances

Navigational clearances at the structure are below the current standards. In order to meet the current Transport Canada standards the soffit of a replacement structure would have to be raised on the order of 600mm-700mm. The soffit would not be raised as part of a rehabilitation.

Loss of Crossing

Over the course of the consultation process there has been a significant out-pouring of public sentiment with regards to the existing crossing. This crossing has been in use for over 80 years and some local residents feel strongly that the crossing is part of the local heritage and; therefore, the County should maintain it.

5.3. Natural Environment

The short term effects of construction on the natural environment for either alternative could be mitigated by adhering to the work timing windows provided by the MNR and ORCA and through the use of standards environmental protection measures and sediment and erosion control measures. The timing windows will ensure that species at risk and the aquatic habitat are not disturbed during sensitive periods. The erosion and sediment controls and environmental protection measures will ensure that deleterious substances are prevented from leaving the work area and that, where applicable these substances are properly disposed of offsite.

In the long term, due to the crossing's location near a sensitive wetland and spanning area, the natural environment at this location would be best served by rehabilitating the existing structure and eliminating the crossing. The rehabilitation alternative would also have significantly less short term impact to mitigate than the installation of a replacement structure.

Additionally, Transport Canada will require that the soffit clearance of any replacement structure be increased to accommodate the current standard navigation clearances. This would impact the natural environment as the approach roadways would have to be raised to accommodate the new structure and the roadway base widened potentially impacting the adjacent wetland and spawning habitat.

6. Preferred Structal Renewal Alternative

Based on the above noted issues, the County of Peterborough has chosen to replace the existing structure. The needs of the recreational and agricultural users of the structure and preference of the local residents were the principal reasons for this decision. The relatively low cost of the recommended replacement structure also provided incentive to replace the structure. The following section provides information pertaining to the recommended replacement alternative and includes a detailed cost estimate.

7. Recommended repalcement Alterative

7.1. Structure

The recommended replacement structure consist of a modular steel structure installed on concrete abutment supported on steel H-piles (see General Arrangement in Appendix C). The advantages of this type of structure are:

- **Speed of Erection** – Pre-fabricated steel super structures can be installed extremely quickly limiting traffic disturbance and construction costs.
- **Cost** – This type of prefabricated structure is extremely cost effective and very competitive with other types of structures where suitable.
- **Minimize Disturbance of Natural Environment** – Prefabricated structures can be installed quickly and with little or no in-water work.

We also recommend increasing the span of the proposed structure from the existing span of 18.9m to 21.25m to enable construction of the new abutments to occur mainly outside the watercourse. The existing abutments may be removed or abandoned in-place, in accordance with the requirements of regulatory agencies.

This scope of work for a cast-in-place concrete structure would generally involve the following:

- Implement traffic control and environmental protection schemes.
- Excavate and install piles at both abutments.
- Remove the existing steel super structure.

- Install new concrete footings and abutments.
- Backfill to structure.
- Install new pre-fabricated steel structure.
- Grade approaches (limit to 25m in length on each approach).
- Install traffic barriers on deck and approaches.
- Remove traffic control and environmental protection schemes.

7.2. Cross Section and Alignment

The proposed prefabricated steel bridge will conform to geometric guidelines for low volume roads and bridges with operating speeds less than 70km/hr. The total roadway width over the new structure is approximately 4.06m. This will include a lane width of 3.0m and 0.5m side clearances. The County has confirmed that the posted speed limit of 60km/hr will be maintained for the foreseeable future.

The existing approach roadways consist of a 3.9m wide lane with 0.65m wide shoulders. The standard cross section for a low volume local rural road would consist of two 3.0m lanes with 0.5m shoulders. Improvements to the approaches are beyond the scope of work for this project. It is recommended, that when the County or Township undertake improvements for this section of roadway, the cross section be upgraded to meet current design standards. The roadway cross section will be tapered at the proposed structure but otherwise the existing cross section will be maintained. This will also reduce any potential impacts on the adjacent habitat.

Minimal improvements will be made to the cross section of the approach roadways, but as the replacement structure will have to be raised to accommodate improved navigational clearances; some modifications to the vertical alignment of the approaches will be necessary.

7.3. Hydraulics

The MTO's Highway Drainage Design Standards (January 2008) provides criteria for the hydraulic design of structures including guidelines for establishing the return period of the design flood and check flood, minimum soffit clearance for bridges and open footing culverts and a minimum freeboard for closed invert culverts and approach roadways. The basis for the selection of the design criteria is a combination of the span of the structure, the class of the roadway over the structure, the volume of traffic and the importance of the waterway.

River Road is a low volume recreational road and the spans of both the existing and proposed structures are greater than 6.0m. The following are the design criteria selected in accordance with the MTO's design standards:

- Design Flood – Return Period 10 years. For freeboard and vertical clearance.
- Check Flood – N/A for low volume roads. Check scour and flow velocity with design flood.

- Regulatory Flood – 100 year or Timmins Storm.
- Freeboard – N/A
- Soffit Clearance – 0.3m

The adequate hydraulic performance of the existing structure indicates that no adjustments to the hydraulic opening should be required in order to conform to the MTO's recommended hydraulic design criteria. Any recommendations resulting from the Hydrology Report, being prepared for ORCA, will be incorporated in the detailed design phase.

7.4. Staging and Traffic Management

The following factors relating to staging were considered for the replacement of Birdsall Bridge:

- The duration of construction is relatively short (i.e. approximately 10 weeks).
- The existing structure and road are one lane and the roadway cannot be realigned to use the existing structure as a detour structure.
- Traffic volume on the road is low.
- A relatively short detour of approximately 5.4 km is available.

As a result, the road will be closed to traffic for the duration of construction. The proposed detour route, indicated on the key plan (s ee Appendix A), is as follows:

- Take River Road to Asphodel 2nd Line,
- Take Asphodel 2nd Line to County Road 2,
- Take County Road 2 to Asphodel 3nd Line,
- Take Asphodel 3nd Line to River Road

7.5. Environmental Protection

Typical environmental concerns with this type of works, outlined below, include both short term and permanent impacts.

- Timing of works interfering with spawning/breeding/nesting/hibernation of fish and species at risk (short term/permanent)
- Erosion and sedimentation at and/or downstream of the structure (short term)
- Discharge of harmful substances into the waterway (eg. fuel, hydraulic oil) (short term)
- Disruption of streambed (i.e. aquatic habitat) (short term/permanent)
- Clearing of endangered vegetation (permanent)
- Loss of fish habitat (permanent)
- Increased flow velocity (permanent)
- Decreased stage at low flow (permanent)

The above noted issues will be mitigated or eliminated through consultation with review agencies in the detailed design phase. Typical measures that are taken to eliminate and mitigate the impacts include:

- Timing works so that they do not interfere with spawning/breeding/nesting/hibernation of fish and species at risk or preventing those species that might be impacted from entering the construction zone. Specific timing windows have been provided by the MNR and ORCA for this project.
- Implementing erosion and sediment control measure such as silt fencing, straw bale flow checks, dewatering and carrying out work in the dry. ORCA will review and issue a permit for the works based on a pre-approved erosion and sediment control plan and environmental protection plan.
- Limiting the disturbance of the streambed and embankments and reinstating disturbed areas after construction is complete.
- Identifying vegetation classified as “at risk” prior to construction and ensuring that these areas are not cleared.

8. Cost Estimate

We have performed a Class 'D' cost estimate for the recommend replacement option described above. Our estimate of the expected construction costs is $555,000.00, which includes a 20% contingency.

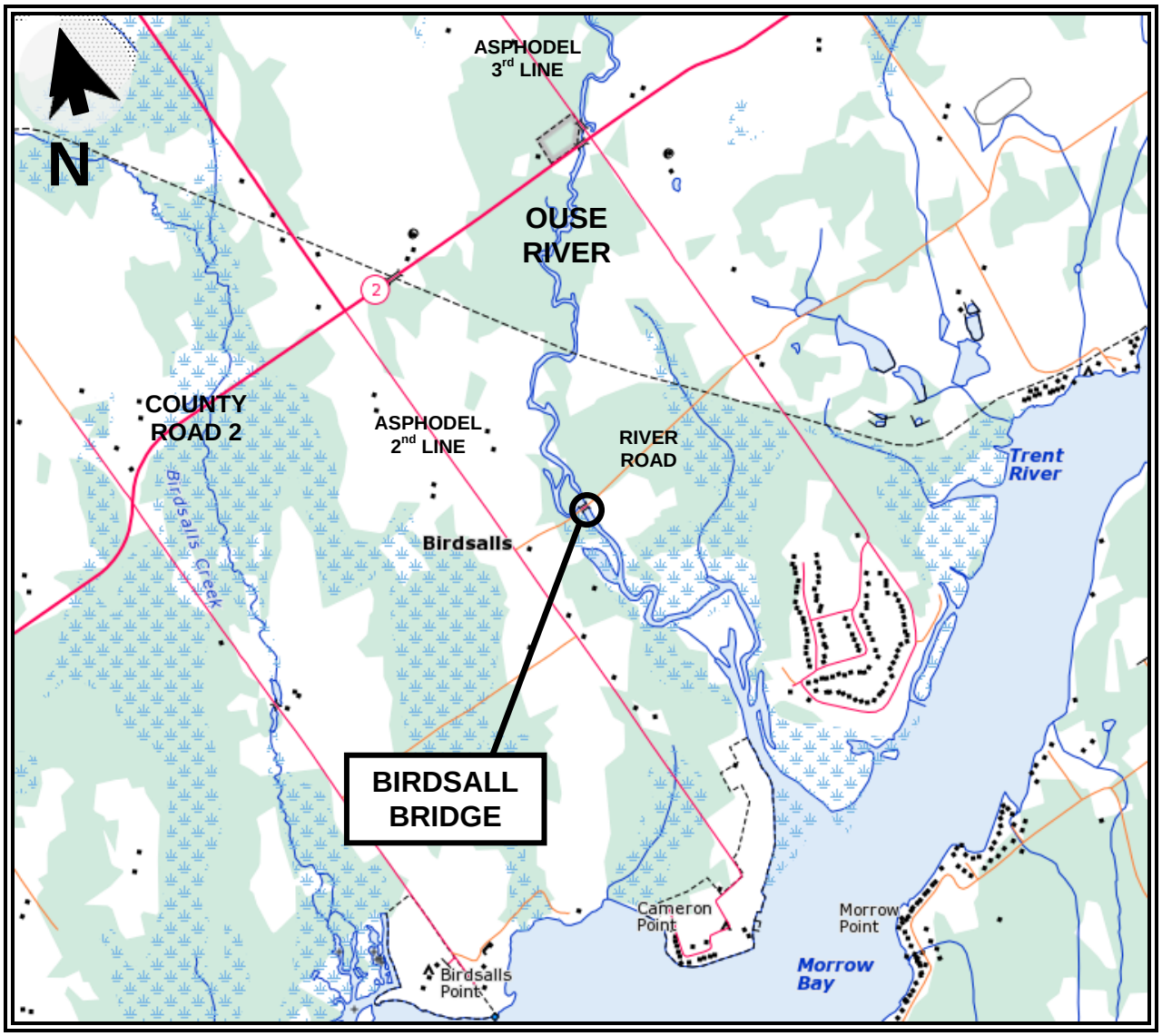
Table 1: Preliminary Cost Estimate

Item	Unit	Estimated Quantity	Unit Price	Amount
Mobilization / Demobilization	Lump Sum			$ 25,000.00
Environmental Protection	Lump Sum			$ 25,000.00
Dewatering During Construction	Lump Sum			$ 50,000.00
Traffic Control	Lump Sum			$ 15,000.00
Remove Existing Structure	Lump Sum			$ 50,000.00
Excavation for Structure/Backfill to Structure	Lump Sum			$ 15,000.00
Mobilisation for Pile Driving	Lump Sum			$ 25,000.00
Supply and Driving for Piles	m	80	$375	$ 30,000.00
Concrete Pile Cap and Abutments	Lump Sum			$ 50,000.00
Supply and Delivery of Prefabricated Structure (72 ft.)	Lump Sum			$ 125,000.00
Installation of Prefabricated Structure	Lump Sum			$ 50,000.00
Excavation Grading and Removals(approx. 50m on each approach)	Lump Sum			$ 10,000.00
Roadway Granular (approx. 50m on each approach)	Lump Sum			$ 30,000.00
Supply and Installation of Steel Beam Guiderail	m	180	$250	$ 45,000.00
Supply and Installation of End Treatments	Each	4	$2500	$ 10,000.00
			Subtotal	$ 555,000.00
			Contingency (approx. 20%)	$ 110,000.00
			Total	$ 665,000.00

APPENDIX A

KEY PLAN

KEY PLAN



Location Desc.:	River Road, 400m East of Asphodel 2nd Line
County/District:	County of Peterborough
Township:	Township of Asphodel-Norwood
Original Tonwship:	Asphodel
Geographic Township:	-
Lot & Concession / Part:	Lot 3, Concession II
Latitude:	44° 16' 59.0"
Longitude:	78° 3' 2.9"
UTM Co-ordinates:	
Datum:	NAD 83
Zone:	17
Northing:	4907550 m
Easting:	735325 m
Source:	OBM – 1017735049050

APPENDIX B:

SITE PHOTOS

SITE PHOTOS **Site No.:** 99019

Photo 1 **East Approach**

Photo 2 **West Approach**

SITE PHOTOS **Site No.:** 99019

Photo 3 **Top of Deck from East Approach**

Photo 4 **West Elevation (Upstream)**

SITE PHOTOS **Site No.:** 99019

Photo 5 **Upstream Watercourse – West Bank**

Photo 6 **Upstream Watercourse – East Bank**

SITE PHOTOS **Site No.:** 99019

Photo 7 **South Elevation (Downstream)**

Photo 8 **Downstream Watercourse**

SITE PHOTOS **Site No.:** 99019

Photo 9 **South End of East Abutment**

Photo 10 **South End of West Abutment**

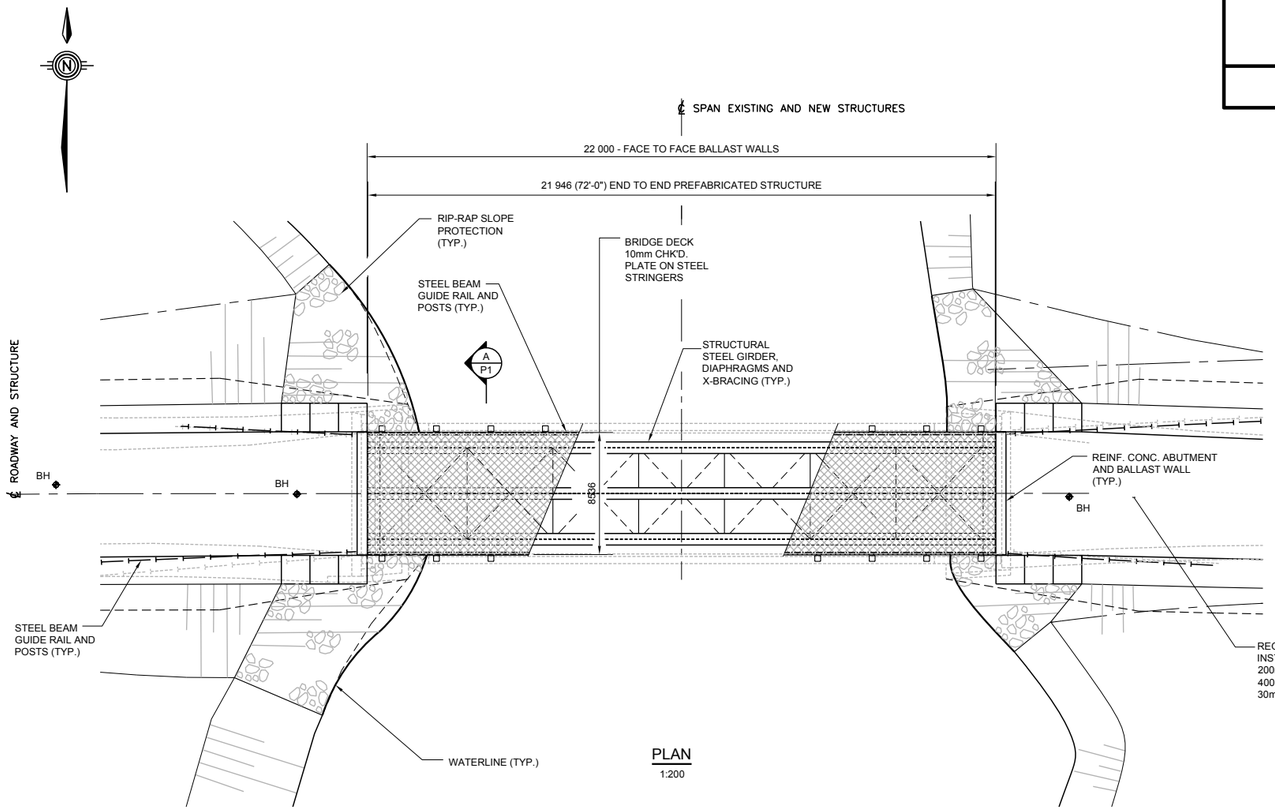
SITE PHOTOS **Site No.:** 99019

Photo 11 **Severe Corrosion of Stringers at East Abutment**

APPENDIX C

PRELIMINARY GENERAL ARRANGEMENT – ALTERNATIVE 1 AND ALTERNATIVE 2

PRELIMINARY



PLAN
1:200

NO.	REVISION	BY	DATE

GENIVAR

CLIENT: COUNTY OF PETERBOROUGH

PROJECT TITLE: BIRDSALL BRIDGE REPLACEMENT

DRAWING TITLE: PRELIMINARY GENERAL ARRANGEMENT

DWG. NO. P1

SHEET 1 OF 1

CONTRACT NO. 09-903

Des. J.H. Chk. L.M.

Dwn. J.A.T. Chk. J.H.

DATE: FEB. 2010

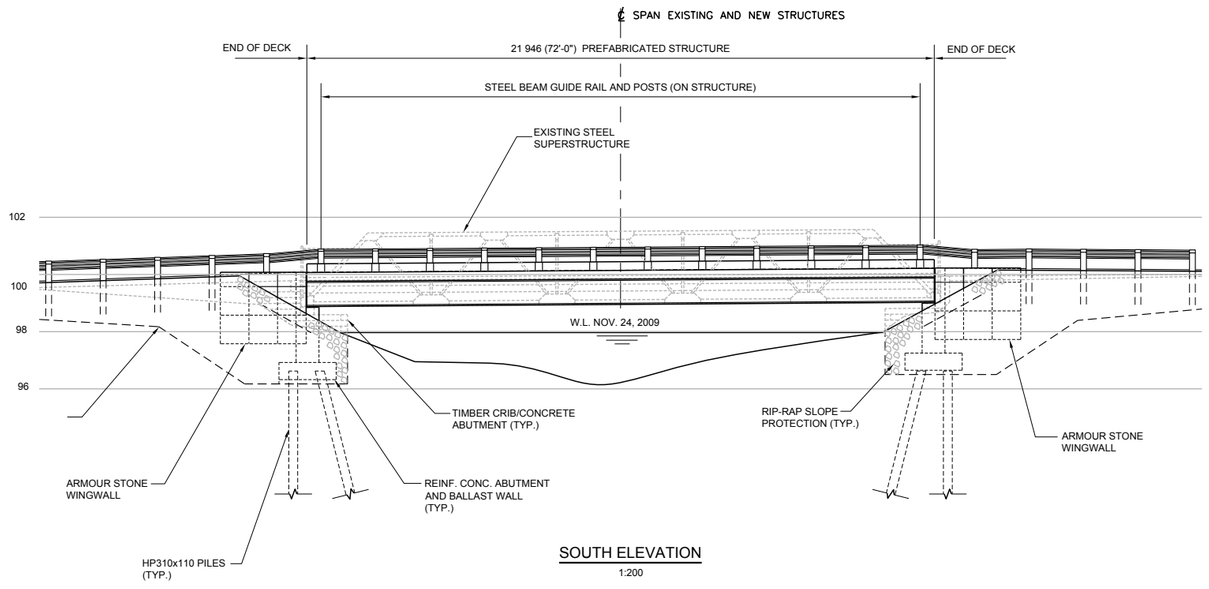
Scale: AS SHOWN

SCOPE OF WORK (STRUCTURAL):

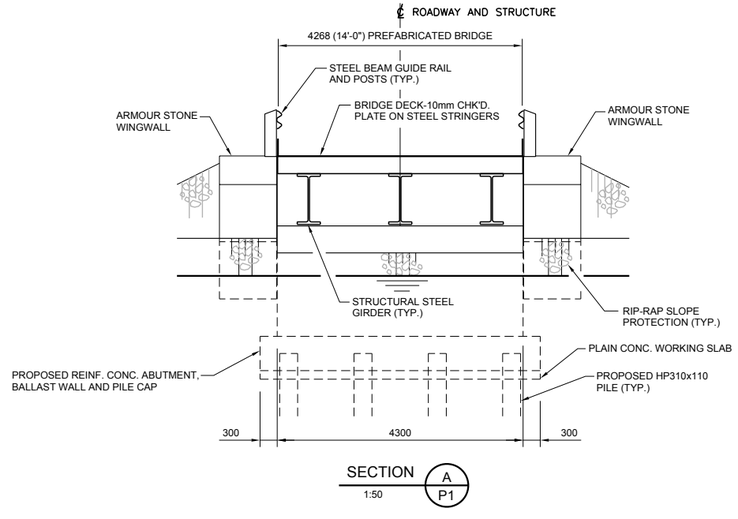
- A SET UP TRAFFIC CONTROL AND DETOUR SIGNAGE.
- B IMPLEMENT ENVIRONMENTAL PROTECTION SYSTEM.
- C REMOVE EXISTING STRUCTURE AND EXCAVATE FOR NEW CONSTRUCTION.
- D DRIVE STEEL PILES.
- E PLACE 300mm TREMIE CONCRETE WORKING SLAB.
- F FORM AND PLACE REINFORCED TREMIE CONCRETE PILE CAPS.
- G PLACE ROCK FILL LEVEL WITH PILE CAPS.
- H FORM AND PLACE REINFORCED CONCRETE ABUTMENTS AND BALLAST WALLS.
- J ERECT PREFABRICATED STEEL SUPERSTRUCTURE AND BRIDGE DECK.
- K PLACE ARMOUR STONE RETAINING WALLS.
- L BACKFILL BEHIND ABUTMENTS, INCLUDING ROADWAY FROST TAPERS.
- M SUPPLY AND INSTALL STEEL BEAM GUIDE RAIL, INCLUDING TRANSITION RAILS, OVER STRUCTURE.
- N SUPPLY AND INSTALL STEEL BEAM GUIDE RAIL, INCLUDING END TREATMENTS, ON APPROACHES.
- P PLACE RIP-RAP SLOPE PROTECTION OVER GEOTEXTILE.
- Q RECONSTRUCT ROADWAY APPROACHES, 30m EACH SIDE OF STRUCTURE.
- R REMOVE ENVIRONMENTAL PROTECTION SYSTEM.
- S REMOVE TRAFFIC CONTROL MEASURES AND DETOUR SIGNAGE.

GENERAL NOTES:

1. CLASS OF CONCRETE: WORKING SLAB - 15 MPa TREMIE
   FOOTINGS - 30 MPa TREMIE
   ABUTMENTS - 30 MPa
2. CLEAR COVER TO REINFORCING STEEL: FOOTINGS - 100 ± 25mm
   ABUTMENTS - 70 ± 20mm
3. REINFORCING STEEL SHALL BE GRADE 400. PREFIX 'C' DENOTES EPOXY COATED REINFORCING STEEL.
   ALL LAP SPLICES SHALL BE "CLASS B" TENSION SPLICE.
   ALL HOOKS SHALL BE STANDARD 90° HOOKS IN ACCORDANCE WITH RSIC "MANUAL OF STANDARD PRACTICE", UNLESS NOTED OTHERWISE.
   ALL STIRRUP AND TIE HOOKS SHALL HAVE MINIMUM HOOK DIMENSIONS IN ACCORDANCE WITH RSIC "MANUAL OF STANDARD PRACTICE".
4. DESIGN LOADING: CHBDC 2006, CAN/CSA-S6-00.
5. GRADE OF STEEL FOR PILES SHALL BE 350W.
6. THE CONTRACTOR SHALL VERIFY ALL DETAILS AND DIMENSIONS AS SHOWN ON THE DRAWINGS AND REPORT ANY DISCREPENCIES PRIOR TO BIDDING.
7. ALL ACCESS TO WORK AREAS SHALL BE CONSTRUCTED IN FULL CONFORMANCE WITH MINISTRY OF LABOUR REQUIREMENTS AND OCCUPATIONAL HEALTH AND SAFETY ACT.
8. ALL ENVIRONMENTAL PROTECTION SYSTEMS SHALL BE FULLY EFFECTIVE IN PREVENTING CONTAMINATION OF THE WATERWAY AND ENVIRONMENT.
9. ALL CONSTRUCTION SHALL BE CARRIED OUT IN DRY.
10. HORIZONTAL CONTROL: CENTRELINE OF EXISTING ROADWAY.
11. LAYOUT OF GUIDERAIL SHALL BE AS DIRECTED BY THE CONTRACT ADMINISTRATOR.
12. THE CONTRACTOR IS FULLY AND SOLELY RESPONSIBLE FOR SAFETY OF PEDESTRIAN AND VEHICULAR TRAFFIC, HIS WORKERS AND PUBLIC.
13. THE SCOPE OF WORK AS SHOWN ON THIS DRAWING IS PROVIDED FOR GENERAL INFORMATION ONLY AND SHALL NOT BE CONSTRUED AS EXHAUSTIVE.

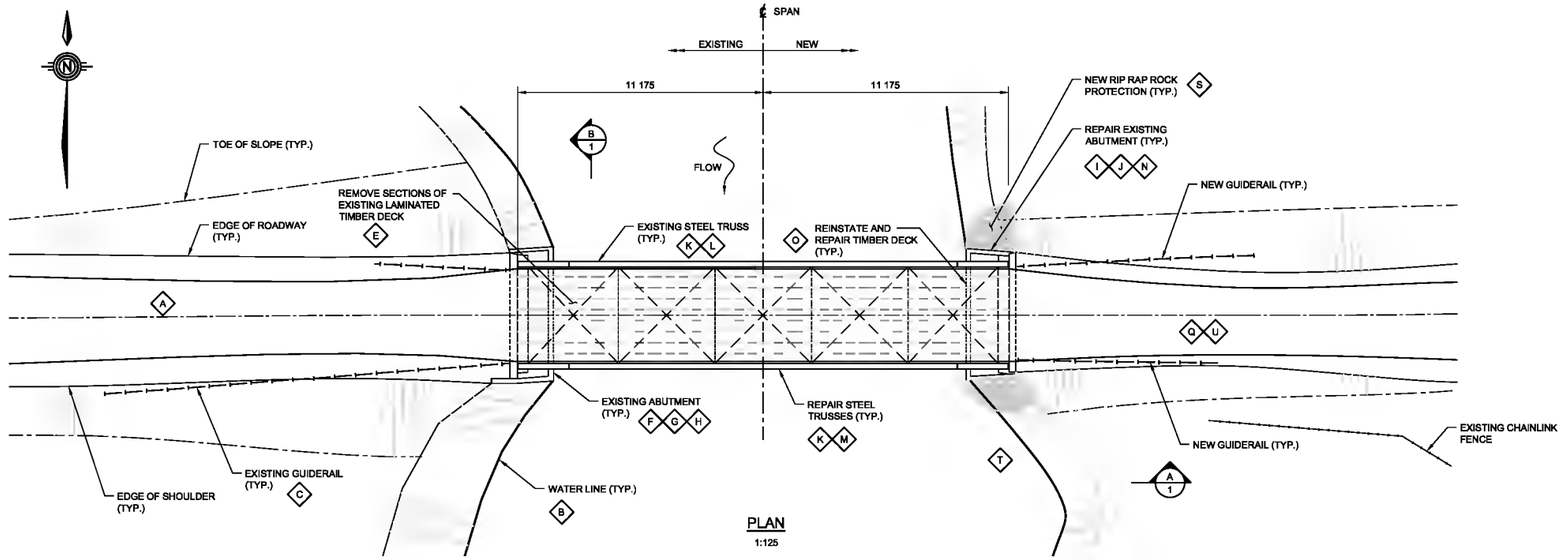


SOUTH ELEVATION
1:200

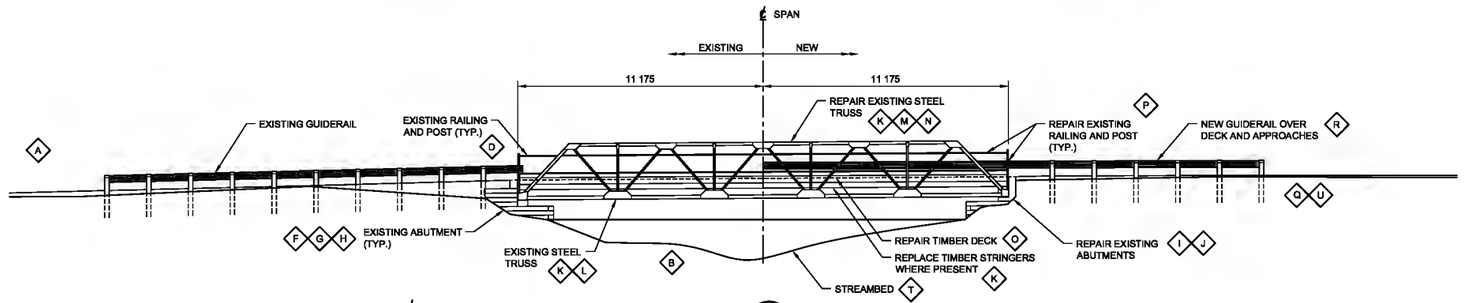


SECTION A P1
1:50

09903-BRDSALL-P1.dwg Feb 16, 2010 - 4:42pm



PLAN
1:125



SECTION A 1
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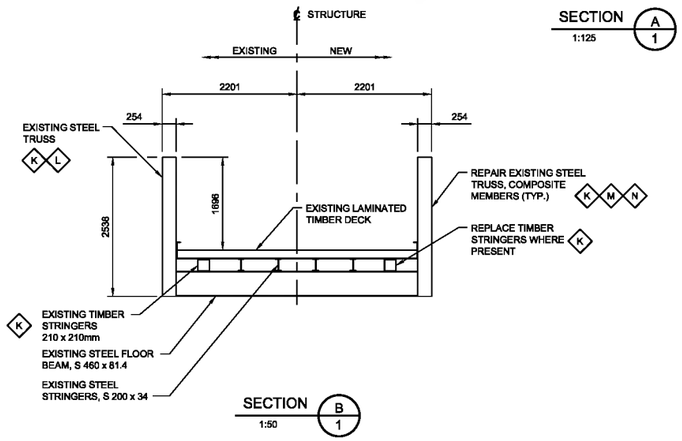


SECTION B 1
1:50

GENERAL NOTES:

1. CLASS OF CONCRETE: CONCRETE REPAIRS - 30 MPa
2. CLEAR COVER TO REINFORCING STEEL: ABUTMENTS - 70 ± 20mm
3. REINFORCING STEEL SHALL BE GRADE 400. PREFIX 'C' DENOTES EPOXY COATED REINFORCING STEEL.
   - ALL LAP SPLICES SHALL BE "CLASS B" TENSION SPLICE.
   - ALL HOOKS SHALL BE STANDARD 90° HOOKS IN ACCORDANCE WITH RSIC "MANUAL OF STANDARD PRACTICE", UNLESS NOTED OTHERWISE.
   - ALL STIRRUP AND TIE HOOKS SHALL HAVE MINIMUM HOOK DIMENSIONS IN ACCORDANCE WITH RSIC "MANUAL OF STANDARD PRACTICE".
4. DESIGN LOADING: CHBDC 2008, CAN/CSA-S6-00.
5. THE CONTRACTOR SHALL VERIFY ALL DETAILS AND DIMENSIONS AS SHOWN ON THE DRAWINGS AND REPORT ANY DISCREPANCIES PRIOR TO BIDDING.
6. ALL ACCESS TO WORK AREAS SHALL BE CONSTRUCTED IN FULL CONFORMANCE WITH MINISTRY OF LABOUR REQUIREMENTS AND OCCUPATIONAL HEALTH AND SAFETY ACT.
7. ALL ENVIRONMENTAL PROTECTION SYSTEMS SHALL BE FULLY EFFECTIVE IN PREVENTING CONTAMINATION OF THE WATERWAY AND ENVIRONMENT.
8. ALL CONSTRUCTION SHALL BE CARRIED OUT IN DRY.
9. HORIZONTAL CONTROL: CENTRELINE OF EXISTING ROADWAY.
10. LAYOUT OF GUIDERAIL SHALL BE AS DIRECTED BY THE CONTRACT ADMINISTRATOR.
11. THE CONTRACTOR IS FULLY AND SOLELY RESPONSIBLE FOR SAFETY OF PEDESTRIAN AND VEHICULAR TRAFFIC, HIS WORKERS AND PUBLIC.
12. THE SCOPE OF WORK AS SHOWN ON THIS DRAWING IS PROVIDED FOR GENERAL INFORMATION ONLY AND SHALL NOT BE CONSTRUED AS EXHAUSTIVE.

NOTE: REVISED LOAD POSTING TO BE DETERMINED

SCOPE OF WORK (STRUCTURAL):

- A INSTALL TRAFFIC CONTROL.
- B INSTALL ENVIRONMENTAL PROTECTION.
- C REMOVE GUIDERAIL.
- D REMOVE DAMAGED SECTIONS OF EXISTING GUIDERAIL AS DIRECTED.
- E REMOVE SECTIONS OF LAMINATED TIMBER DECK.
- F PROVIDE TEMPORARY SUPPORTS FOR END OF TRUSSES.
- G REMOVE DETERIORATED CONCRETE FROM ABUTMENTS.
- H REMOVE DETERIORATED TIMBERS FROM FACE OF ABUTMENTS.
- I FORM AND POUR CONCRETE REPAIRS ON ABUTMENTS.
- J GROUT ROCK FILL BELOW ABUTMENTS.
- K REMOVE AND REPLACE STEEL AND TIMBER MEMBERS AS DIRECTED.
- L CLEAN AND REMOVE ALL SCALE FROM JOINTS .
- M REPLACE RIVETS WITH HIGH STRENGTH BOLTS AS DIRECTED.
- N TOUCH UP COATINGS AT JOINTS AS DIRECTED.
- P REPAIR EXISTING RAILING.
- Q GRADE APPROACHES.
- R INSTALL NEW GUIDERAIL OVER DECK AND APPROACHES.
- S INSTALL RIP RAP.
- T REMOVE ENVIRONMENTAL PROTECTION.
- U REMOVE TRAFFIC CONTROL.

IS	RE	DATE	DESCRIPTION

SEAL:

CLIENT: COUNTY OF PETERBOROUGH
CLIENT REF. #:

PROJECT: BIRDSALL BRIDGE REHABILITATION
PROJECT NO: DATE:

GENIVAR
221-39 ROBERTSON ROAD
OTTAWA (ONTARIO)
CANADA K2H 8R2
TELEPHONE: 613-828-4445 FAX: 613-828-4077
WWW.GENIVAR.COM

ORIGINAL SCALE: AS SHOWN
IF THIS BAR IS NOT 25mm LONG, ADJUST YOUR PLOTTING SCALE.
25mm

TITLE: GENERAL ARRANGEMENT
SHEET NUMBER: 1
SHEET #: OF

DESIGNED BY: Jennifer Huntley
DRAWN BY: Hui Liu
CHECKED BY: Mario Bruno
DISCIPLINE: STRUCTURAL
ISSUE: REV #
DATE OF:

STAMP

APPENDIX D

PROJECT NOTICES

County of Peterborough
Class Environmental Assessment
Renewal of the Birdsall, Boland's and the McNeil's Bridge
Notice of Study Commencement

The County of Peterborough is studying the structural renewal of the Birdsall Bridge (River Road), Boland's Bridge (Asphodel 3rd Line) and McNeil's Bridge (Baseline Road) in the County of Peterborough.

The project is being planned under schedule B of the Municipal Class Environmental Assessment. The goal of this type of study is to select a preferred solution and/or design alternative through the development and analysis of several alternative solutions and designs with respect to technical and environmental issues. Consultation with all interested parties is an important aspect of this process, providing the initiator of the study with valuable information regarding all aspects of the project.

An informal drop-in meeting will be held on Thursday February 18, 2009 from 6:00 pm to 8:00 pm at the Otonabee South Monaghan Community Centre. The information session will include a presentation of the proposed design alternatives. The Otonabee South Monaghan Community Center is located at 24 Fourth St. in Keene.

For further information on this project please contact:

Paul Hurley, Manager of Technical Services
County of Peterborough
County Court House
310 Armour Road
Peterborough, Ontario K9H 1Y6
Phone: 705 775-2737 x 322
Fax: 705 749-0735

or

Jennifer Huntley, P.Eng.
Genivar
39 Robertson Road, Suite 221
Ottawa, Ontario K2H 8R2
Phone: (613) 828-4445
Fax: (613) 828-4077

Public Input and comment are invited, for incorporation into the planning and design of this project and will be received until March 31, 2010.

This notice issued January 18, 2010.

Paul Hurley, Manager of Technical Services
County of Peterborough

GENIVAR

OT -09-903-00-OT

December 18, 2009

Address

Dear: Mr. and Mrs.

RE: BIRDSALL BRIDGE REPLACEMENT

GENIVAR has been retained by the County of Peterborough to provide engineering services for the replacement of the Birdsall Bridge. This structure is located on River Road, approximately 400m East of Asphodel 2nd Line in the Township of Asphodel-Norwood, in the County of Peterborough.

The existing structure is a single span steel pony truss bridge built in 1930, with an approximate length of 18.9m and an approximate width of 4.6m. It is a single lane bridge carrying local traffic over the Ouse River.

The existing structure is nearing the end of its expected service life and the County of Peterborough is proposing to replace the bridge.

No temporary crossing will be provided during construction of the new bridge, and as such the crossing will be closed to traffic for the duration of the work. It is anticipated that construction is anticipated that construction will begin in July 2012.

We are presently in the preliminary design stage and would greatly appreciate any feedback that your agency can provide at this time. Should you have any questions, comments or require additional information, please do not hesitate to contact the undersigned at (613) 828-4445 or Marek.Stutz@genivar.com or the project manager Jenifer Huntley P.Eng at Jenifer.Huntley@genivar.com.

Yours truly,
GENIVAR

Marek Stutz, B.Eng. EIT

GENIVAR

OT -09-903-00-OT

December 18, 2009

Address

Dear: Mr. and Mrs.

RE: BIRDSALL BRIDGE REPLACEMENT

GENIVAR has been retained by the County of Peterborough to provide engineering services for the replacement of the Birdsall Bridge. This structure is located on River Road, approximately 400m East of Asphodel 2nd Line in the Township of Asphodel-Norwood, in the County of Peterborough.

The existing structure is a single span steel pony truss bridge built in 1930, with an approximate length of 18.9m and an approximate width of 4.6m. It is a single lane bridge carrying local traffic over the Ouse River.

The existing structure is nearing the end of its expected service life and the County of Peterborough is proposing to replace the bridge.

It will be a priority during the course of these works to minimise potential environmental impacts. Provisions for minimizing the environmental impacts will include implementing various erosion and sediment control measures such as silt fences, flow checks and silt curtains to comply with the requirements of all regulatory authorities. In addition, any debris produced by the work shall be prevented from entering the watercourse through the implementation of protective measures.

In water works will be required to construct the proposed replacement structure, but it is our intention to minimise disruption of the streambed during the installation of the abutments to the extent possible.

There will be no temporary crossing provided during construction of the new bridge, and as such the crossing will be closed to traffic for the duration of the work. It is anticipated that construction is anticipated that construction will begin in summer 2012.

We are presently in the preliminary design stage and would greatly appreciate any feedback that your agency can provide at this time. Should you have any questions, comments or require additional information, please do not hesitate to contact the undersigned at (613) 828-4445 or Marek.Stutz@genivar.com or the project manager Jenifer Huntley P.Eng at Jenifer.Huntley@genivar.com.

Yours truly,
GENIVAR

Marek Stutz, B.Eng. EIT

County of Peterborough
Class Environmental Assessment
Rehabilitation of Birdsall Bridge
Notice of Study Commencement

The County of Peterborough is studying the structural renewal of Birdsall Bridge on River Road between 2nd and 3rd Line Asphodel.

The project is being planned under schedule B of the Municipal Class Environmental Assessment. The goal of this type of study is to select a preferred solution and/or design alternative through the development and analysis of several alternative solutions and designs with respect to technical and environmental issues. Consultation with all interested parties is an important aspect of this process, providing the initiator of the study with valuable information regarding all aspects of the project.

A public information session will be held on Tuesday November 9, 2011 from 6:00pm to 8:00pm at the Public Library in Westwood in the Township of Asphodel Norwood. The information session will include a presentation of the proposed design alternative. The Public Library is located at 312 Centre Line, Westwood.

For further information on this project please contact:

Chris Bradley, Director of Public Works
County of Peterborough
County Court House
470 Water Street
Peterborough, Ontario K9H 3M3
Phone: 705 742-4862 x 222
Fax: 705 749-0735

or

Jennifer Huntley, P.Eng.
Genivar
39 Robertson Road, Suite 221
Ottawa, Ontario K2H 8R2
Phone: (613) 828-4445
Fax: (613) 828-4077

Public Input and comment are invited, for incorporation into the planning and design of this project and will be received until Jan 31, 2012.

This notice issued October 19, 2011

Chris Bradley, Manager of Technical Services
County of Peterborough

GENIVAR

OT -09-903-00-OT

October 28, 2011

Dear: Sir / Madame,

RE: BIRDSALL BRIDGE REHABILITATION

GENIVAR has been retained by the County of Peterborough to provide engineering services for the rehabilitation of the Birdsall Bridge. This structure is located on River Road, approximately 400m east of Asphodel 2nd Line in the Township of Asphodel-Norwood, in the County of Peterborough.

The existing structure is nearing the end of its expected service life. Initially the county had intended to replace the structure, however during the first public consultation the County received feedback from the community indicating that the crossing was not of great value to the community and is somewhat redundant. As a result the County is putting forward the following revised proposal for the renewal of the structure. The existing bridge will be repaired in order to extend the service life of the structure for the next 5 to 10 years. After this period the crossing will be removed or converted to a recreational crossing suitable for pedestrians and non motorised vehicles.

It is anticipated that construction would begin in summer 2012. No temporary crossing will be provided during rehabilitation of the bridge, and as such the crossing will be closed to traffic for the duration of the work.

This project is being planned as Schedule 'B' project, in accordance with the Municipal Class Environmental Assessment, guidelines. As a part of the Schedule 'B' Environmental Assessment the County is contacting all stakeholders and regulatory agencies regarding this project. Consultation with all interested parties is an important aspect of this process, providing the initiator of the study with valuable information regarding all aspects of the project.

You are invited to attend an informal drop-in meeting held on Wednesday November 16, 2011 from 6:00 pm to 8:00 pm at the Westwood Branch of the Asphodel Norwood Library. The Westwood Branch of the Asphodel Norwood Library is located at 312 Center Line in Westwood.

Yours truly,
GENIVAR

Marek Stutz, B.Eng. EIT

GENIVAR

OT -09-903-00-OT

October 28, 2011

Dear: Sir / Madame,

RE: BIRDSALL BRIDGE REHABILITATION

GENIVAR has been retained by the County of Peterborough to provide engineering services for the rehabilitation of the Birdsall Bridge. This structure is located on River Road, approximately 400m east of Asphodel 2nd Line in the Township of Asphodel-Norwood, in the County of Peterborough.

The existing structure is nearing the end of its expected service life. Initially the county had intended to replace the structure, however during the first public consultation the County received feedback from the community indicating that the crossing was not of great value to the community and is somewhat redundant. As a result the County is putting forward the following revised proposal for the renewal of the structure. The existing bridge will be repaired in order to extend the service life of the structure for the next 5 to 10 years. After this period the crossing will be removed or converted to a recreational crossing suitable for pedestrians and non motorised vehicles.

It is anticipated that construction would begin in summer 2012. No temporary crossing will be provided during rehabilitation of the bridge, and as such the crossing will be closed to traffic for the duration of the work.

It will be a priority during the course of these works to minimise potential environmental impacts. Provisions for minimizing the environmental impacts will include implementing various erosion and sediment control measures such as silt fences, flow checks and silt curtains to comply with the requirements of all regulatory authorities. In addition, any debris produced by the work shall be prevented from entering the watercourse through the implementation of protective measures.

This project is being planned as Schedule 'B' project, in accordance with the Municipal Class Environmental Assessment, guidelines. As a part of the Schedule 'B' Environmental Assessment the County is contacting all stakeholders and regulatory agencies regarding this project. Consultation with all interested parties is an important aspect of this process, providing the initiator of the study with valuable information regarding all aspects of the project.

If you have any questions or require additional information please feel free to contact the undersigned.

Yours truly,
GENIVAR

Marek Stutz, B.Eng. EIT

GENIVAR

09-903-00

November 25, 2011

Attn: Sir / Madame,

SUBJECT: BIRDSALL BRIDGE STRUCTURAL RENEWAL

GENIVAR has been retained by the County of Peterborough to provide engineering services for the structural renewal of the Birdsall Bridge. This structure is located on River Road, approximately 400m east of Asphodel 2nd Line in the Township of Asphodel-Norwood, in the County of Peterborough.

Following up on our initial correspondence dated October 28, 2011, we would like to clarify that the County is currently considering the alternatives of replacing the structure and rehabilitating the structure.

- Replacement 2012
  - The replacement structure would have a service life of approximately 75 years.
- Rehabilitation 2012
  - Rehabilitation would extend the service life of the structure for 5-10 years.
  - At this point the County would either eliminate the crossing or convert it into a recreational crossing (pedestrian, cyclist, ATV, skidoo, etc.)

The preferred alternative identified by the County at this time would be to rehabilitate the structure and then remove the crossing entirely at some point in the future. This would reduce the short term capital costs and eliminate long term maintenance costs for a crossing that experiences very low traffic volumes and for which a relatively short detour is available.

Please note that a final decision concerning the renewal of the Birdsall Bridge has not yet been made. We would be pleased to receive your comments and suggestions for consideration during this Environmental Assessment on these and any other alternatives.

The public information session held on November 16, 2011 at the Westwood Branch of the Asphodel-Norwood Library provided valuable feedback from the community on the proposed alternatives. We would like to invite those members of the public who were not able to attend the Public Information Session to attend the Asphodel-Norwood Township Council Meeting on December 13, 2011 at 9:00 a.m. at the municipal office where the County will be presenting information provided at the Public Information Session.

39 Robertson Road, Suite 221, Ottawa, Ontario CANADA K2H 8R2
Telephone: 613-828-4445 ~ Fax: 613-828-4077 ~ www.genivar.com

If you should have any questions or would like to provide feedback please feel free to contact myself or the County at the addresses provided below.

Peter Nielsen, Manager of Technical Services
County of Peterborough
310 Armour Road
Peterborough ON K9H 1Y6
Phone: (705) 775-2737 x 322
Fax: (705) 749-0735
Email: pnielsen@county.peterborough.on.ca

Jennifer Huntley, P. Eng, Structural Engineer
GENIVAR - Structural Branch
39 Roberson Road, Suite 221
Ottawa Ontario K2H 8R2
Phone: (613) 828-4445
Fax: (613) 828-4077
Email: jennifer.huntley@genivar.com

Regards,
GENIVAR

Jennifer Huntley, P. Eng.
Structural Engineer

APPENDIX E

PUBLIC OPEN HOUSES 1 & 2
PRESENTATION MATERIALS

COUNTY OF PETERBOROUGH
BIRDSALL BRIDGE REPLACEMENT

PURPOSE OF REPLACEMENT

- To provide a structure capable of permitting the safe passage of all users.
- To upgrade the roadway cross section and railing over the structure to current standards in order to increase vehicular and pedestrian safety.

ANTICIPATED CONSTRUCTION SCHEDULE

- Work to commence in June, 2012.
- Work to be completed October 2012.

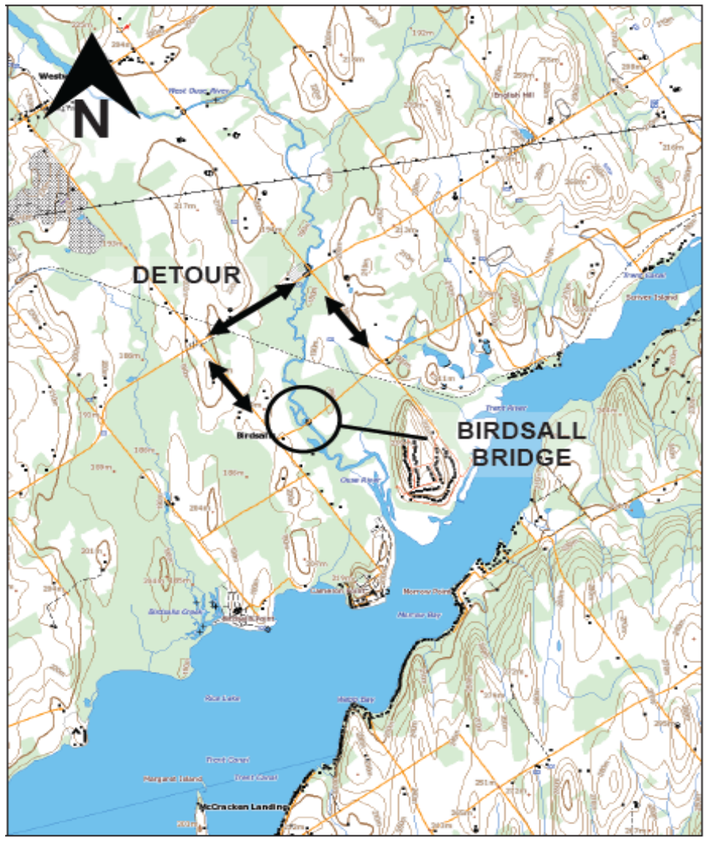
TRAFFIC CONTROL DURING CONSTRUCTION

- Construction of the bridge will be completed in 1 stage.
- The structure will be closed to traffic during construction.
- Safety provisions will be implemented to prevent the entrance of vehicular and pedestrian access in the construction zone.

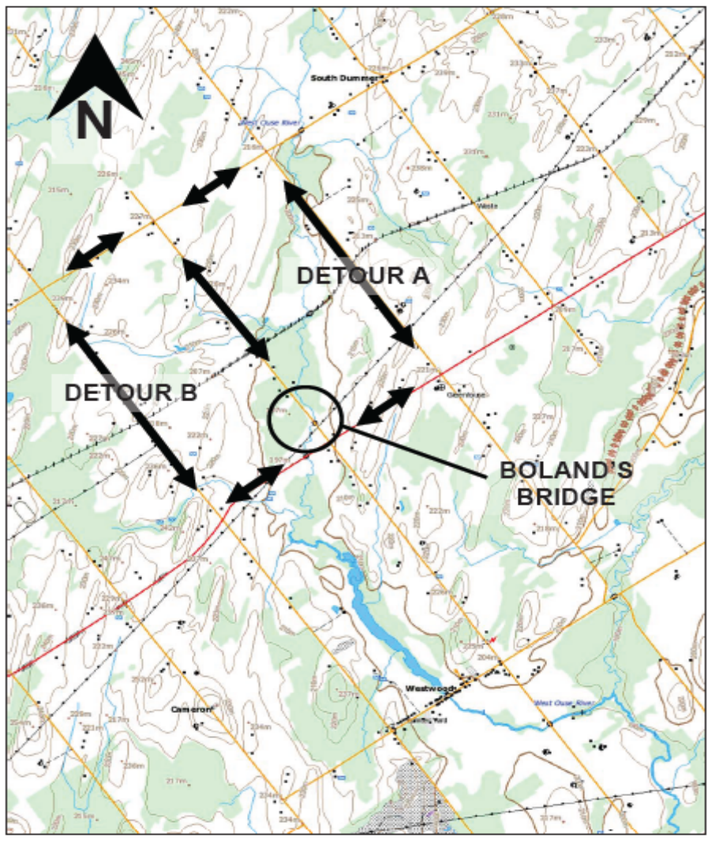
JUSTIFICATION FOR REMOVAL OF CROSSING

- Costs – Minor initial capital cost, but no ongoing maintenance costs.
- Environmental impact- Temporary impact of removal of structure could be mitigated but not eliminated.
- Impact on vehicular/other traffic – Elimination of crossing results in maximum detour of 5.4Km.

COUNTY OF PETERBOROUGH
DETOURS FOR BIRDSALL, BOLAND'S AND MCNEIL'S BRIDGE

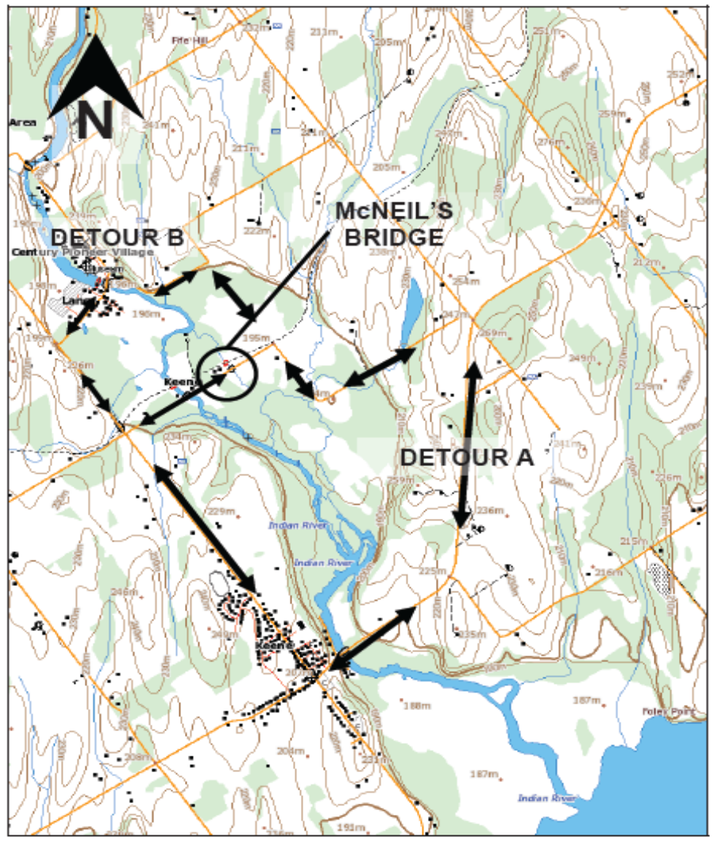


- Detour Length 5.4km
  - Take River Road to Asphodel 2nd Line,
  - Take Asphodel 2nd Line to County Road 2,
  - Take County Road 2 to Asphodel 3nd Line,
  - Take Asphodel 3nd Line to River Road



- Detour A: Length 8.8km
  - Take Asphodel 3rd Line (N/S) to Highway 7 (E/W),
  - Take Highway 7 (E/W) to Asphodel 2nd Line (N/S),
  - Take Asphodel 2nd (N/S) Line to Dummer/Asphodel Road (E/W),
  - Take Dummer/Asphlodel Road (E/W) to Asphodel 3rd Line (N/S).

- Detour B : Detour Length – 9.0km
  - Take Asphodel 3rd Line (N/S) to Highway 7,
  - Take Highway 7 (E/W) to County Road 38 (N/S),
  - Take County Road 38 (N/S) to Dummer/Asphodel Road (E/W),
  - Take Dummer/Asphodel Road (E/W) to Asphodel 3rd Line (N/S).



- Detour A: Length 16.7km
  - Take Base Line Road to Heritage Line,
  - Take Heritage Line to County Road 2,
  - Take County Road 2 to Dixon Drive,
  - Take Dixon Drive to Base Line Road
- Detour B: Length 7.4km
  - Take Base Line Road to Heritage Line,
  - Take Heritage Line to Long Road,
  - Take Long Road to Allandale Road,
  - Take Allandale Road to Base Line Road

PURPOSE OF REHABILITATION AND JUSTIFICATION FOR REMOVAL OF CROSSING

- Rehabilitation
  - o Rehabilitation will maximize lifespan (5 – 10 years) of existing crossing at minimal costs.
  - o Structure will continue to be load posting. Structural review will be carried out to determine revised Load Posting.

- Removal
  - o Removal of little used structure (following 5-10 years extended use from rehabilitation) will eliminate future capital costs and maintenance costs.

- Costs
  - o Capital costs for rehabilitation of existing structure and removal of structure will be significantly less than the replacement costs of the structure.
  - o Removal of structure will eliminate future lifecycle costs.

- Environmental Impact
  - o Minimal temporary impact for rehabilitation.
  - o Minimal temporary and removal of structure.
  - o All environmental impacts will be mitigated.

- Impact on vehicular/other traffic
  - o Rehabilitation will maximize lifespan of existing crossing.
  - o Elimination of crossing results in maximum detour of 5.4Km.
  - o Roadway is not maintained during the winter limiting impact of removal.

COUNTY OF PETERBOROUGH
REHABILITATION OF BIRDSALL BRIDGE

ANTICIPATED CONSTRUCTION SCHEDULE

- Work to commence in June 2012.
- Work to be completed October 2012.

TRAFFIC CONTROL DURING REHABILITATION

- Construction of the bridge will be completed in 1 stage.
- The structure will be closed to traffic during construction.
- Safety provisions will be implemented to prevent the entrance of vehicular and pedestrian access in the construction zone.

GENIVAR - Structural Branch, 39 Roberson Road, Suite 221, Ottawa Ontario K2H 8R2
Phone: (613) 828-4445, Fax: (613) 828-4077

OPTIONS

Birdsall Bridge:
Age and Deterioration of the existing required County to address Public Safety

Option 1:
Replace Existing Structure

Lifespan: 75 years
Benchmark Cost: $450,000.00

Option 2:
Rehabilitate Existing Structure

Lifespan: 5-10 years
Benchmark Cost: $100,000.00

Option 2A
Remove Crossing

Lifespan: N/A
Benchmark Cost: $50,000.00

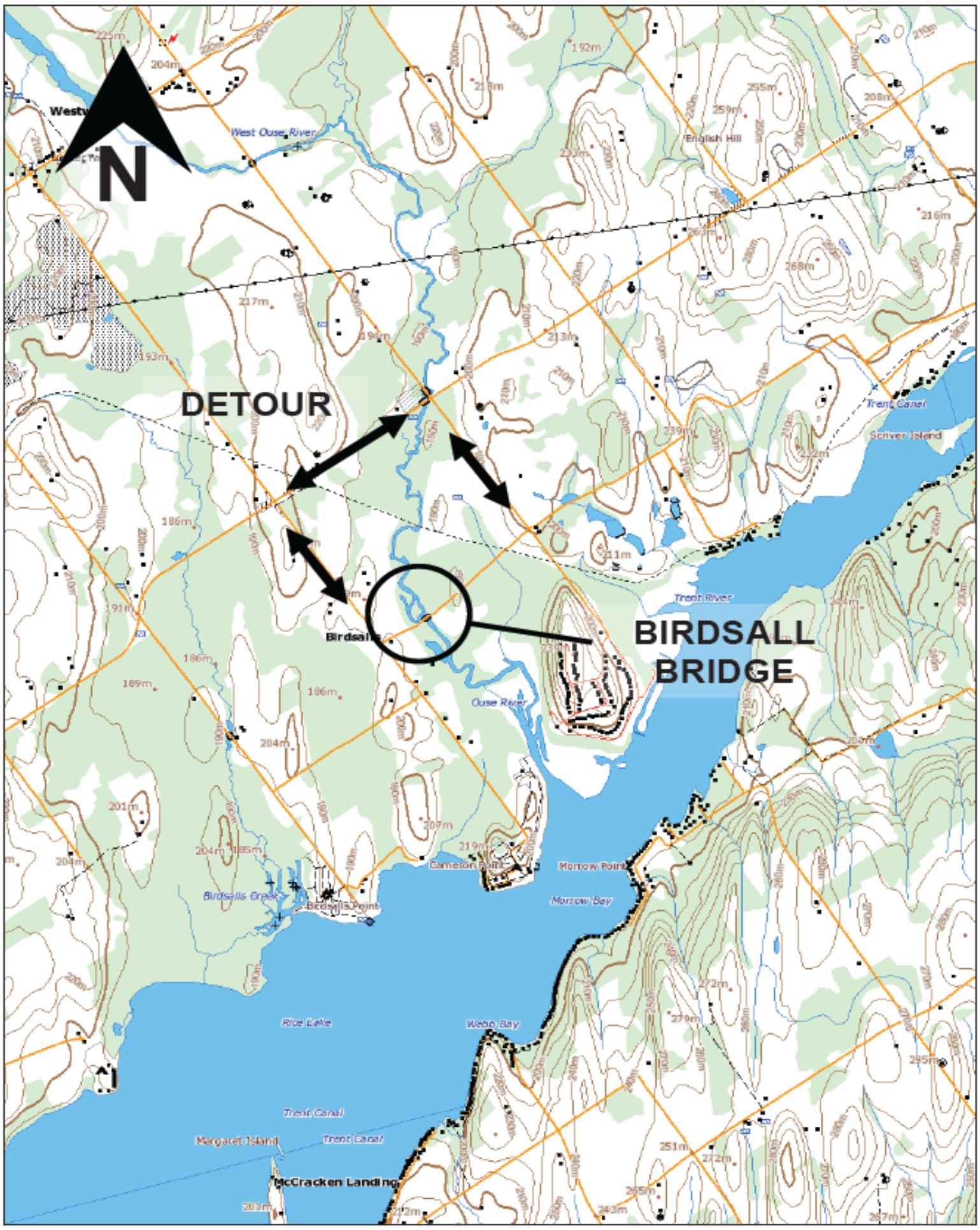
Option 2B
Create Pedestrian Crossing

Lifespan: 25 years
Benchmark Costs: $50,000.00

Preferred Option – Option 2A: Rehabilitate structure for 5-10 years and remove structure

COUNTY OF PETERBOROUGH
REHABILITATION OF BIRDSALL BRIDGE

DETOUR



Detour Length 5.4km

- Take River Road to Asphodel 2nd Line,
- Take Asphodel 2nd Line to County Road 2,
- Take County Road 2 to Asphodel 3nd Line,
- Take Asphodel 3nd Line to River Road

GENIVAR - Structural Branch, 39 Roberson Road, Suite 221, Ottawa Ontario K2H 8R2
Phone: (613) 828-4445, Fax: (613) 828-4077

APPENDIX F

STAKEHOLDER, REVIEW AGENCY AND PUBLIC FEEDBACK

February 10, 2010

Marek Stutz, B.Eng. EIT
Genivar, Structural Branch,
39 Robertson Road, Ottawa.

Re: RENEWAL OF THE BIRDSALL BRIDGE (River Road, Asphodel-Norwood Twp.)

Sir:

I will not be in attendance at the informal drop-in to be held Feb. 18, 2010, at the Otonabee South Monaghan Community Centre. I submit this letter in response.

As an owner and interested person concerning this bridge, I begin by informing you that it is built on a one-lane road and is usable for only six months of the year, as the posted signs indicate. A bridge over the Ouse River at that point, has been in existence since the early 1870's. It is situated on a road between the 2nd and 3rd concessions of the Township of Asphodel-Norwood; it is a road of particularly natural beauty, and is frequented by bird-watchers, photograghers and artists plying their trade. Walkers and runners love it, because of its sparse travel and safety. It happens to be one of the few roads left, which has not been destroyed in some way, by either municipal bureaucrats or those who think that new bridges are the way to go.

It is the approach to this bridge, both on the east and west side, that concern me. Let's not have a big high bridge, trees slaughtered on both sides, and a miserable piece of property left. I won't like it, the bird watchers won't thank you, and all those people who feel the same way as I do, won't like it. Replace the bridge if you must, but do it with pizzazz. My understanding is that a bridge, no matter how insignificant, costs over a million dollars. Surely there is a better way to use taxpaper's money – especially since it is only travelled from May 1st, to November 1st, as the signs indicate.

Yours truly,

[redacted]

[redacted]

[redacted]

December 27, 2011

Peter Neilson
Manager of Technical Services
County of Peterborough
310 Armour Road
Peterborough, ON
K9H 1Y6

Dear Peter,

By now you know that I am a supporter of "Option A" for the Birdsall Bridge replacement, however I am forwarding my feelings in writing.

This bridge has served the residences of this municipality for the past 142 years. As indicated in family diaries, it stated Richard Birdsall (my great great grandfather) and aunt Lotte travelled the new road for the first time in 1870. The steel bridge replaced the wooden one in 1950-51 and was moved there from the 3rd line and county road 2, "Steele's Bridge".

This road is not just a road between two concessions, it is a connecting link of a road that starts on our boundary road Birdsall line and runs through to the village of Hastings.

The road is a very important part to the farming operations of the Elmhurst's. Closure of this bridge will drive their farming operations out onto county road 2, forcing them to battle traffic that is already very heavy and having them turning against traffic flow at the intersection of county road 38 and 2. An already known area for many accidents, (one just two days prior to the meeting in Westwood). They also use the Birdsall Bridge to transport crops ~~to~~ their OTHER farms ON BIRDSALL LINE

Replacement of the bridge will also increase the load weight standards allowing larger equipment and loads of grain and corn to cross. This will also make for easier road maintenance. We always had to make sure the gravel and calcium trucks were close to empty before crossing.

Vehicle counts of 20 cars per day is a fairly accurate count, I do believe that by times this count can be much higher. However we have concession roads that don't carry that many vehicles per day.

If the road were to be closed, it would need to be gated to allow Elmhurst's to access their property. This would be a severe inconveince opening and closing after every load to keep vehicles out. ATV's and snowmobiles would be all through farmers' woods and fields DOING DAMAGE as seen at Birdsall Station property ON the rail line that intersects River road between the 2nd and 3rd lines.

"Option B"
Lets not thro w good money at bad and replace this bridge,on a very scenic and busy little road. We already have lots of trails costing hundreds of thousands of dollars for biking, horseback riding, ATV's and snowmobiles. One of which intersects this very road. But very few scenic routes for old and young alike that don't run, walk, hike or ride horses to drive and enjoy. It also takes the slower traffic off your county road.

At the meeting I attended in Westwood, the one couple that supported the trail did so *only* if the bridge was to be closed and expressed concern over the farming operations of the Elmhurst's.

Unfortunately we are very few residences to respond to your options. However many of the summer residences, from the three trailer parks located on the Birdsall line and 2nd line alon**g** as well as people from all areas, City of Peterborough included use this scenic route every year.

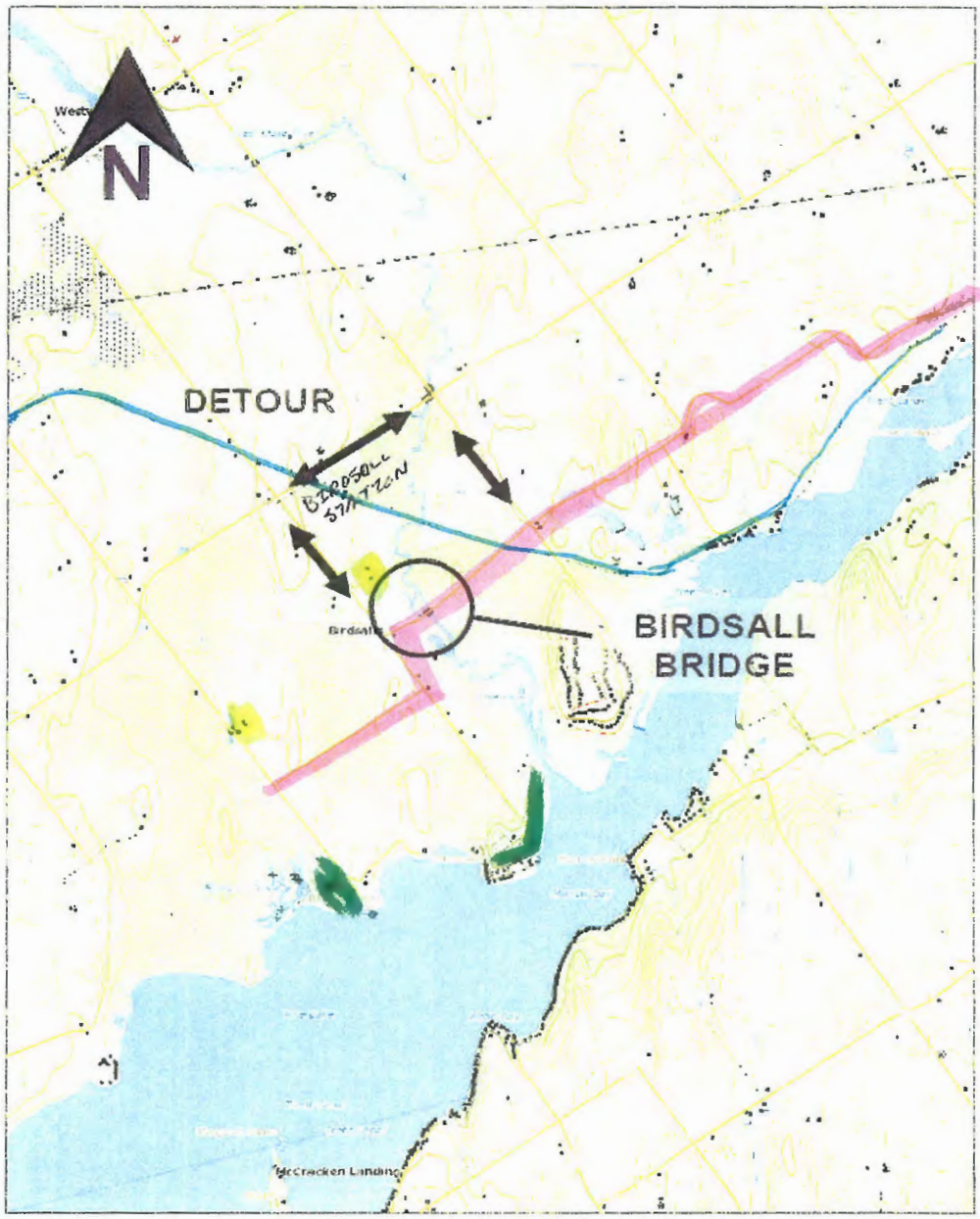
I am hoping this letter will help sway your decision towards "Option A" and the replacement of Birdsall Bridge.

Sincerely,

[redacted]

COUNTY OF PETERBOROUGH
REHABILITATION OF BIRDSALL BRIDGE

DETOUR



Detour Length 5.4km

- Take River Road to Asphodel 2nd Line,
- Take Asphodel 2nd Line to County Road 2,
- Take County Road 2 to Asphodel 3nd Line,
- Take Asphodel 3nd Line to River Road

RIVER ROAD ROUTE.

RAIL TRAIL SYSTEM

ELMHURST FAMILY FARMS.

BIRDSALL BEACH
HOLIDAY PINES
HERITAGE PARK
} 500 TRAILERS

GENIVAR - Structural Branch, 39 Roberson Road, Suite 221, Ottawa Ontario K2H 8R2
Phone: (613) 828-4445, Fax: (613) 828-4077

QUESTIONS AND COMMENTS

Feel free to make comments or ask any questions we have not had the opportunity to address during the open house and a representative of Genivar or County of Peterborough will respond in writing. Please print.

[redacted]

QUESTIONS AND/OR COMMENTS

I'm surprised and disappointed at the direction the cty is needed. I would like to see the cty. move towards replacing the existing structure with an adequate bridge. This is not the proposal pitched 3yrs ago.

39 Robertson Road, Suite 221, Ottawa, Ontario CANADA K2H 8R2
Telephone: 613-828-4445 ~ Fax: 613-828-4077 ~ www.genivar.com

COUNTY OF PETERBOROUGH
BIRDSALL BRIDGE REHABILITATION
PUBLIC INFORMATION SESSION

QUESTIONS AND COMMENTS

Feel free to make comments or ask any questions we have not had the opportunity to address during the open house and a representative of Genivar or County of Peterborough will respond in writing. Please print.

[redacted]

QUESTIONS AND/OR COMMENTS

if bridge is removed: access to land south and north of River Rd east of Birdsall bridge?
Would the whole road be closed?
What about access off of the rail way bed?
If a walking trail would all land owers have vehicle access to their land?

39 Robertson Road, Suite 221, Ottawa, Ontario CANADA K2H 8R2
Telephone: 613-828-4445 ~ Fax: 613-828-4077 ~ www.genivar.com

Jennifer Huntley

From: Nielsen, Peter [PNielsen@county.peterborough.on.ca]
Sent: Thursday, November 17, 2011 10:13 AM
To: [redacted]
Cc: Jennifer Huntley; Reid, Kendra
Subject: RE: Comments on the Birdsall Bridge Rehabilitation Proposals

John

Thank you for forwarding your comments concerning the Birdsall Bridge. We appreciate you taking the time to attend the public meeting.

Your comments and other comments that we anticipate receiving from attendees at last night's meeting will assist the County Peterborough through the decision making process.

We will continue to involve the public as this project continues to develop.

Thank you.

Peter Nielsen, C.E.T.
Manager of Technical Services
County of Peterborough
310 Armour Road
Peterborough, Ontario
K9H 1Y6
(705) 775-2737 ext. 322
(705) 749-2551
pnielsen@county.peterborough.on.ca

From: [redacted]
Sent: Wednesday, November 16, 2011 9:16 PM
To: Nielsen, Peter
Subject: Comments on the Birdsall Bridge Rehabilitation Proposals

After reviewing the information presented at the Westwood Library on Wednesday, November 16, 2011, my preference would be to go from the current state of the bridge directly to Plan 2B. Spending $100K on an interim solution that would last 5 to 10 years makes no sense given that very few people (if any) will be in any major way inconvenienced. For purely personal reasons, we would hate to see the bridge removed as it is used by equestrian, pedestrian, bike, ATV and snowmobile alike and makes a nice connection (all be it small) to the Trans-Canada/Ontario Loop trail system that runs through this area.

Cordially,

[redacted]

[redacted]

November 2011

Dear Sir or Madam,

I am sorry we could not be at your meeting but I realize as much info as you can collect is valuable.

The Birdsall bridge is at present used as a shortcut for many service vehicles such as Purolator, Ups all local traffic from the trailer sites and yes even trucks and moving vehicles. This does not need to be a main thoroughfare as there is a perfectly good safe highway Cty Rd 2. In winter we get many snowmobilers and all year ATV's.

I think your idea is a good one, do not make so strong that heavy trucks are safe on it, yet on the other hand Mr. Emhurst needs it to be strong enough for his farm tractors and other machinery. It is a lovely walkable lane and cross country skiers can be seen on it in Winter.

Hope our viewpoint adds to some you've already heard.

Your truly

[redacted]

Township of Asphodel – Norwood

2357 County Road 45, Norwood, ON K0L 2V0 • Telephone: (705) 639-5343 • Fax: (705) 639-1880
www.asphodelnorwood.com

November 23rd, 2011

County of Peterborough
County Court House
470 Water Street
Peterborough, Ontario
K9H 3M3

Dear Chris Bradley,

Re: Birdsall Bridge Project

At its regular council meeting on November 23rd 2011 the Council of the Township of Asphodel-Norwood approved the following resolution:

*"**THAT** the Council of the Township of Asphodel-Norwood send a letter to the County of Peterborough indicating strong support for the replacement of the Birdsall Birdge".*

Carried

We look forward to speaking with Peter Neilson at the December 13th council meeting regarding the various options for the bridge. If you have any questions please do not hesitate to contact the Municipal Office.

Sincerely,

Valerie Przybilla
CAO/Clerk-Treasurer
Township of Asphodel-Norwood
(705) 639-5343 ext. 205
valeriep@asphodelnorwood.com

Natural Heritage Review Memo

OTONABEE CONSERVATION

Date: January 19, 2012

To: Bruce Flemons, ORCA, Jennifer Clinesmith, ORCA Manager of Planning and Regulations;

From: Erin McGauley, Watershed Biologist

CC: Jennifer Huntley, Genivar; Peter Nielsen, County of Peterborough

ORCA File: ***2010-ST 001***

Proponent: Genivar Consulting

Review of: **2010-ST001 Birdsall Bridge**

Further to our site meeting on January 12, 2012 the following comments are provided from a review of the two documents provided on site:

1. sample Environmental Protection, Erosion and Sediment Control Plan
   (note that the plan provided is for McNeil's Bridge. It is understood thot this wos provided to show ORCA the 'general intent' of the EP&ESC Plan)
2. Preliminary General Arrangement drawing for the Birdsall bridge replacement

The proposed works fall within the boundary of the Ouse River Mouth Provincially Significant Wetland. As such, fill activity such as that proposed to raise the height of the bridge is only permitted if it is deemed a road maintenance activity. Changes to the vertical clearance of the bridge will affect the road approach grades, and a significant amount of fill is proposed to be placed in the wetland. **This is not a first choice scenario from a natural heritage perspective – if there is any option of not raising the bridge height, or lowering the approach grades to limit infill, it should be explored.** If there is no option but to raise the bridge height, then the current designs will need to do more to minimize fill and riparian disturbance for the road maintenance activity. A vertical treatment (such as armour stone) would minimize the impacts of the approach grading. Furthermore, staging of the construction project should not occur west of the river in wetland-designated areas (see attachment 1). Under Environmental Protection Measures in the EP&ESC Plan, please amend point 5(c) to include no refueling within 30m of the wetland boundary.

In assessing the impact of the proposed works on fish and fish habitat pursuant to the federal Fisheries Act, it is understood that downstream flows will be maintained between the cofferdams and a turbidity curtain will be installed. A turbidity curtain is generally installed on the downstream side of a work area, and a single curtain on the south side of the bridge extending from the area of the straw bale flow check dams is sufficient rather than the two included on the sample EP&ESC Plan. Extending the curtain south of the cofferdams will ensure that any sediment associated with their removal is trapped rather than released to the Muskellunge spawning areas.

Due to the identified Muskellunge spawning area immediately downstream of the bridge, **no in-water work shall take place from March 15 – June 30.** In order to fully assess fisheries impacts via DFO's *Risk Management Framework*, please provide the horizontal extent of fill placement for the approach regrading.

The sample Environmental Protection, Erosion and Sediment Control Plan (EP&ESC) generally appears acceptable. It is understood that no streambed excavation is anticipated for this project, which is to have abutments on steel pilings. Silt fencing should extend from the cofferdams to completely enclose the area of regrading work related to the approach and minimize impacts on wetland habitat. No inclusion of an inspection schedule for the sediment and erosion controls is noted - this should be added to the plans.

Sincerely,

Erin McGauley
Watershed Biologist
Otonabee Region Conservation Authority

Natural Heritage Review Memo

Date: February 5, 2010

To: Jennifer Clinesmith, ORCA Manager of Planning and Regulations,

From: Erin McGauley, Watershed Biologist

CC: Dan Bujas, ORCA Regulations Officer
Lucas Pitts, ORCA Manager of Engineering and Natural Hazards,
Dave Johnston, ORCA Engineering Technologist.

ORCA File: ***2010-ST 001,002 and 003***

Proponent: Genivar Consulting

Review of: **2010-ST001 Birdsall Bridge / 2010-ST002 McNeil's Bridge / 2010-ST003 Boland's Bridge**

ORCA Understanding

This series of comments is based on the proposed bridge replacements, as outlined in the three January 13th Letters of Intent provided to our office.

Our understanding is that these bridges are replacement structures, and therefore, significant changes in hydraulic conditions are unlikely. If the bridge structures are being redesigned, our preference is to see clear-span bridges built, with approaches, abutments and footing located above the ordinary high water mark. Due to the locations of these bridges within wetland and riparian areas, construction should entail minimal removal of and impacts to riparian vegetation.

ORCA Comments

Natural Heritage Features

Further to our review, ORCA Biology Staff offer the following comments related to the natural heritage features for the bridge locations you've provided.

- **Boland's Bridge:** Crosses the cold-water West Ouse River and is located within the Westwood Provincially Significant Wetland. No in-water work from October 1 to May 31st.

- **McNeil's Bridge:** Crosses a warm-water tributary of the Indian River just upstream of the Indian River Mouth Provincially Significant Wetland and an identified fish spawning area. No in-water work from April 1 – June 30.

- **Birdsall Bridge:** Crosses the warm-water Ouse River within the Ouse River Mouth Provincially Significant Wetland, directly within an identified fish spawning area. No in-water work from April 1 – June 30.

In-water Work Mitigation

Given the sensitivity of these three sites (Boland's and Birdsall being more sensitive than McNeil's), in-water work impacts carry considerable weight. Timing restrictions are noted above, and below are the links to two DFO operational statements that provide some generalized guidance on the types of design parameters to limit impacts to fish and fish habitat. We would encourage you to implement the practices outlined in these documents at this preliminary design stage of your project.

Clear-span Bridges: http://www.dfo-mpo.gc.ca/regions/central/habitat/os-eo/provinces-territories-territoires/on/pdf/os-eo05_e.pdf

Bridge Maintenance: http://www.dfo-mpo.gc.ca/regions/central/habitat/os-eo/provinces-territories-territoires/on/pdf/os-eo04_e.pdf

Information Required for Natural Heritage Review

In order to assess the impact of the proposed works on fish and fish habitat pursuant to the federal Fisheries Act, a fisheries habitat assessment must be provided. This assessment must outline the ways in which the following requirements will be met:

- The maintenance of downstream flows (to maintain existing fish habitat)
- Details of any in-water works planned and their mitigation (for example, in-water placement of rock to stabilize the base of structures – use rounded stone vs. rip rap; shrub plantings in riparian areas disturbed by construction).
- Sediment and erosion control measures and inspection schedules
- Means of preventing bridge materials from entering the watercourse

It must also include information and mapping of land use, current drainage pattern(s), channel and bank configuration, soil types in the work area, delineation of ORCA's Development Control Area (DCA) and mapping of known natural heritage features including species at risk, watercourse thermal regimes, and wetland areas. Fish sampling at the site helps to identify the fish community that will be subject to the highest impact. The Ministry of Transportation has forms and protocols that may help to structure the field and report components of the required fish and fish habitat assessment.

In Summary

I hope the above information is helpful. If you have any questions about the comments provided, please don't hesitate to contact the undersigned.

Sincerely,

Erin McGauley
Watershed Biologist
Otonabee Region Conservation Authority

GOVERNMENT SERVICES BUILDING
AND CULTURAL CENTRE

CURVE LAKE
FIRST NATION

CURVE LAKE, ONTARIO K0L 1R0

PHONE (705) 657-8045
FAX (705) 657-8708

November 7th, 2011

Marek Stutz
Genivar
39 Robertson Road
Ottawa, Ontario K2H 8R2

Dear Marek Stutz,

RE: Birdsall Bridge Rehabilitation

We would like to acknowledge receipt of your correspondence, which we received on 10/28/2011 regarding the above noted project.

As you may be aware, the area in which your project is proposed is situated within the Traditional Territory of Curve Lake First Nation. Our First Nation's Territory is incorporated within the Williams Treaty Territory and is the subject of a claim under Canada's Specific Claims Policy. We strongly suggest that you provide Karry Sandy-Mackenzie, Williams Treaty First Nation Claims Coordinator, 8 Creswick Court, Barrie, ON L4M 2S7, with a copy of your proposal as your obligation to consult to also extend to the other First Nations of the Williams Treaty.

Although we have not conducted exhaustive research nor have we the resources to do so, Curve Lake First Nation Council is not currently aware of any issues that would cause concern with respect to our Traditional, Aboriginal and Treaty rights.

Please note that we have particular concern for the remains of our ancestors. Should excavation unearth bones, remains or other such evidence of a native burial site or any Archaeological findings, we must be notified without delay. In the case of a burial site, Council reminds you of your obligations under the *Cemeteries Act* to notify the nearest First Nation Government or other community of Aboriginal people which is willing to act as a representative and whose members have a close cultural affinity to the interred person. As I am sure you are aware, the regulations further state that the representative is needed before the remains and associated artifacts can be removed. Should such a find occur, we request that you contact our First Nation immediately.

If any new, undisclosed or unforeseen issues should arise, that has potential for anticipated negative environmental impacts or anticipated impacts on our Treaty and Aboriginal rights we require that we be notified regarding these as well.

Thank you for recognizing the importance of consultation and respecting your duty to consult obligations as determined by the Supreme Court of Canada.

Should you have further questions, please feel free to contact me.

Yours sincerely,

Chief Keith Knott
Curve Lake First Nation

C.C. Jennifer Huntley

Transport Canada **Transports Canada**
Marine **Maritime**

Navigable Waters Protection Program
Programme de protection des eaux navigables
100 Front Street South
Sarnia, Ontario N7T 2M4

Your File Votre référence

Our File Notre référence
8200-2010-400049 (8200-10-6012)

January 26, 2012

County of Peterborough
c/o Genivar
39 Robertson Road, Suite 221
Ottawa, ON K2H 8R2

Attention: Jennifer Huntley

Dear Madam:

Re.: Application under the *Navigable Waters Protection Act* by County of Peterborough for Approval of the Bridge located at Ouse River in the Province of Ontario

Receipt is hereby acknowledged of your correspondence received on January 24, 2012 that is presently under review by officials of the Navigable Waters Protection Program pursuant to the *Navigable Waters Protection Act* (R.S.C. 1985, c. N-22), as amended by Part 7 of the *Budget Implementation Act*, 2009, S.C. 2009, c. 2.

Please note that you may be required to deposit plan(s) related to the above-referenced work and provide notice by advertising in the *Canada Gazette* and in one or more newspapers. However, in order to minimize the cost of having to re-deposit and re-advertise, we recommend you do not proceed until advised by our office.

Should your project require approval under the NWPA, you may be further required to undertake the following:

a) Undergo a federal environmental assessment in accordance with the *Canadian Environmental Assessment Act (CEAA)*. This assessment must be completed before a decision is made on whether to issue an Approval as described above. **You will be advised by Environmental Affairs Branch, Transport Canada of additional information requirements if CEAA applies to your project.**

It is the applicant's responsibility to obtain any other forms of approval, including building permits, under any other applicable laws.

Please allow a minimum of ninety (90) days for processing your application. Should you have any questions, please do not hesitate to contact our office at (866) 821-6631 or by facsimile transmission at (519) 383-1989 or by e-mail at NWPontario-PENontario@tc.gc.ca.

Donna Patterson
Information Management Supervisor
Navigable Waters Protection Program
Marine Safety
Transport Canada
Ontario

DP/kg

Cc: County of Peterborough

Canada

Jennifer Huntley

From: Julia Marson
Sent: Monday, January 23, 2012 3:09 PM
To: Jennifer Huntley
Subject: Fwd: Birdsall Bridge

Julia Marson, P.Eng
GENIVAR
39-221 Robertson Road, Ottawa

Sent from my iPhone

Begin forwarded message:

From: "Berube, Margaret (MNR)" <Margaret.Berube@ontario.ca>
Date: 23 January, 2012 1:32:22 PM EST
To: Marek Stutz <Marek.Stutz@genivar.com>
Subject: RE: Birdsall Bridge

Hi Merek,

This email is in response to the documentation for the Schedule B Municipal Class Environmental Assessment – Birdsall Bridge Rehabilitation received by the Ministry of Natural Resources (MNR Peterborough District Office) on November 4, 2011 with respect to the project area located in the geographic township of **Asphodel - lot 3, concession 2**. We provide the following general information for your consideration:

MNR Data and Information (General):

We would like to inform you that MNR's natural heritage and natural resources data and information for the study area can be obtained through the Ministry's Land Information Ontario (LIO) website at: http://www.mnr.gov.on.ca/en/Business/LIO/2ColumnSubPage/STDPROD_068994.html.
A data sharing agreement is required to access data within the LIO database. The following link provides information about obtaining an agreement:
http://www.mnr.gov.on.ca/en/Business/LIO/2ColumnSubPage/STEL02_167959.html

You can also obtain Species at Risk occurrence information on our Natural Heritage Information Centre (NHIC) website: http://www.biodiversityexplorer.mnr.gov.on.ca/nhicWEB/.
In addition, the Species at Risk in Ontario (SARO) List can be obtained at: http://www.e-laws.gov.on.ca/html/regs/english/elaws_regs_080230_e.htm
NEW Environmental Registry posting regarding additional species to be added to SARO List in 2012 can be viewed at:
http://www.ebr.gov.on.ca/ERS-WEB-External/displaynoticecontent.do?noticeId=MTE0ODY5&statusId=MTcyMjA3&language=en

We recommend that you use the above-noted sources of information during the review of your project proposal. MNR may provide additional information and technical advice if details of the proposed location(s) and design(s) of the proposed works are circulated to our office.

Natural Heritage Features:

-Rivers and Streams: Ouse River
-Wetlands: Ouse River Mouth Provincially Significant Wetland

-Area's of Natural and Scientific Interest (ANSI's): None
-Significant Wildlife Habitat: Black Tern, Map Turtle and Snapping Turtle
-Significant Woodlands: Contact the appropriate upper tier or lower tier municipality (the subject area contains wooded areas)
-Significant Valleylands: Contact the appropriate upper tier or lower tier municipality

Information Regarding MNR Approvals:

Species at Risk and the Endangered Species Act (ESA), 2007

A review of our best available information indicates that are occurrences of Snapping Turtle (Special Concern) on the subject location. In addition, there are occurrences of Butternut (Endangered) and Least Bittern (Threatened) in the immediate area (1km) as well as occurrences of Black Tern (Special Concern), Eastern Ribbonsnake (Special Concern), Northern Map Turtle (Special Concern) and Blanding's Turtle (Threatened) in the general area (5km). Although no other threatened or endangered species or their habitat have been documented in the area of the proposed project, these features may be present and this list should not be considered complete.

Species listed as endangered or threatened on the Species at Risk in Ontario (SARO) list are protected under the Endangered Species Act, 2007 (ESA). Section 9(1) of the ESA prohibits a person from killing, harming, harassing, capturing or taking a member of a species listed as endangered, threatened or extirpated on the SARO list. Section 10(1) of the ESA, 2007 prohibits the damage or destruction of habitat of a species listed as endangered or threatened on the SARO list.

Since comprehensive mapping for most Species at Risk is not available, a site assessment is generally needed to identify the presence of any Species at Risk and/or their habitat. The focus of the site assessment can include a review of the information about known occurrences provided by MNR above along with other information sources such as species distributions and habitat requirements as well as *field visits using MNR approved protocols during the appropriate seasons by a qualified professional.* Since this proposal involves site alterations, we recommend that a site assessment be conducted before any site alterations begin. It is the responsibility of a person(s) undertaking any proposed activity to ensure they are in compliance with all provincial and federal legislation including the ESA. Therefore a person(s) should ensure their proposed activities will not adversely affect a Species at Risk or its habitat protected under the ESA. If an impact to a Species at Risk or its habitat cannot be avoided, a person(s) may apply for an authorization under the ESA. However, if an authorization is not issued by MNR, the person(s) must comply with the ESA by modifying proposed activities to avoid impacts to Species at Risk and habitat protected under the ESA.

Should any Species at Risk or their habitat be potentially impacted by on site activities, MNR should be contacted immediately and operations should be modified to avoid any negative impacts to Species at Risk or their habitat until further discussions with MNR can occur regarding opportunities for mitigation.

If any species at risk is found please contact the Species at Risk Biologist at the Peterborough District MNR office at 705-755-3104.

Species at Risk – Technical Advice:

- MNR recommends that in areas where Species at Risk turtles occur that no work occur from May 1st through to September 30th to avoid potential impacts to nesting turtles and nests. If work is to occur during May-September, we recommend installing a fence (e.g. silt fencing) or appropriate barrier in March or April (prior to nesting season) along the entire edge of the proposed work area to deter any nesting turtles (as well as other reptiles or amphibians) from entering the construction area. This fencing should be maintained and checked each day prior to activities commencing to ensure species are not trapped inside the work area.
- MNR recommends that no in-water works occur from October 15th to April 15th to protect hibernating turtles.
- MNR recommends that any vegetation clearing or grubbing be scheduled outside of the breeding bird season (April 15th to July 31st) to avoid impacts to species at risk birds present (and all other birds present).

Lakes & Rivers Improvement Act (LRIA)

Please note that you may require a permit under the *Lakes & Rivers Improvement Act* (LRIA) from our office if any dyking, dredging or damming activities are planned along or near watercourses or wetland areas. If near or in-water works are proposed, please contact the Senior Lands Specialist at the Peterborough District MNR office at 705-755-3305.

Public Lands Act (PLA)

Except for federal canals and harbours, the beds of most lakes and streams are public land in Ontario. In the case of the **Ouse River**, the bed of this water course below the Birdsall Bridge to the best of our knowledge is provincial land. Please note that you may require a work permit under the *Public Lands Act* (PLA) if you are proposing work in water or near shore (shoreline) areas below the spring high water mark. This would of course pertain to the relocation of any abutment or the repair or expansion of these structures in water or near shore. Please contact the Senior Lands Specialist at the Peterborough District MNR office at 705-755-3305 if you have any additional questions. We ask that you please provide us with a detail plan(s) of the work proposed and based on the information provided we can better determine if submission of an application for the work is necessary.

MTO/DFO/OMNR Fisheries Protocol, 2006

For more information on fisheries management, please contact Holly Simpson, Management Biologist, at 705-755-3302 or holly.simpson@ontario.ca.

MTO/DFO/MNR Protocol: Request for Existing Data

Request date:	Jan 9, 2011		
Date prepared:	Jan 9, 2011	Compiled by:	Holly Simpson

Location	Birdsall Bridge
Waterbody Name	Ouse River
Thermal Regime	Warmwater
Habitat Information	The area contains: Ouse River Marsh Regionally Significant Life Science ANSI, downstream side of the bridge contains important spawning areas for muskellunge
Fish Species	rock bass, white sucker, muskellunge, bluegill, largemouth bass, golden shiner, yellow perch, bluntnose minnow, striped bass, smallmouth bass
In-water work timing window*	Apr 1-Jun 30
MNR fisheries management objectives	*To manage the warmwater fish community where muskellunge are the top predator species, based on naturally reproducing populations.*
Fish and habitat sensitivity	Moderate – ensure that proposed work is properly mitigated to avoid/minimize impacts to muskellunge and the weed beds they use for spawning
Species at Risk known from the area	

* In-water work timing window indicates the time period when MNR recommends that work in water **DOES NOT** occur

Other Approvals

It is the responsibility of the proponent to acquire all other necessary approvals from any other municipal, provincial or federal authority under other legislation. We recommend that you contact your local Conservation Authority, Department of Fisheries and Oceans, Ministry of the Environment, Ministry of Tourism and Culture, etc.

If you have any specific questions regarding natural heritage and natural resource features as they relate to the study area and project proposal, please do not hesitate to contact the undersigned.

Sincerely,

Margaret

Margaret Bérubé, Strategic Officer
Ontario Ministry of Natural Resources, Peterborough District
300 Water Street - 1st Floor, South Tower - Peterborough ON, K9J 8M5
Phone: **(705) 755-3360**, Fax: (705) 755-3125
Email: Margaret.Berube@Ontario.ca

From: Marek Stutz [mailto:Marek.Stutz@genivar.com]
Sent: December 13, 2011 2:07 PM
To: Berube, Margaret (MNR)
Subject: Birdsall Bridge

Margaret,
Attached is the Key Plan and the General Arrangement Drawing for the Birdsall Bridge Rehabilitation Project.
The general area is the County of Peterborough, Town of Westwood.

If there are any points of interest around the structure that may be affected during construction, please let us know.
Regards,

GENIVAR

Marek Stütz, B.Eng, EIT
GENIVAR | *Constructive People*
T 613-828-4445 www.genivar.com

Jennifer Huntley

From: Berube, Margaret (MNR) [Margaret.Berube@ontario.ca]
Sent: Wednesday, February 08, 2012 3:28 PM
To: Jennifer Huntley
Subject: RE: Birdsall Bridge Replacement

Hi Jennifer,

Believe it or not, I was just about to email you! Unfortunately, MNR doesn't have an official timing window for Eastern Ribbonsnake. That said, our Herptology Species at Risk Specialist offers the following information:

"Eastern Ribbonsnakes emerge in the early spring, probably around the beginning of April. In southwestern Ontario it could be in March, especially if we have an early/warm spring. They will likely be out basking near their hibernacula on the first sunny day once the snow cover has mostly melted. By mid May they will probably be hanging around their summer habitat and would typically be close to water for the rest of the summer. They probably head to their hibernacula in October and are typically underground by late October or early November."

It is also recommended that you conduct additional research. I hope that helps. Please don't hesitate to contact me if you have any further questions.

Thanks,

Margaret

Margaret Bérubé, Strategic Officer
Ontario Ministry of Natural Resources, Peterborough District
300 Water Street - 1st Floor, South Tower - Peterborough ON, K9J 8M5
Phone: **(705) 755-3360**, Fax: (705) 755-3125
Email: Margaret.Berube@Ontario.ca

From: Jennifer Huntley [mailto:Jennifer.Huntley@genivar.com]
Sent: February 8, 2012 12:20 PM
To: Berube, Margaret (MNR)
Cc: Nielsen, Peter
Subject: Birdsall Bridge Replacement

Margret,

I was hoping you had had a chance to ask your SAR biologist about the protection measure for nesting snakes. If you could let me know if we require any additional measure it would be much appreciated.

Regards,

GENIVAR

Jennifer Huntley, P. Eng. | Structural Engineer
GENIVAR | *Constructive People*
221-39 Robertson Road, Ottawa, Ontario K2H 8R2
T 613-828-4445 | www.genivar.com

Jennifer Huntley

From: Toll, Matt (MNR) [Matt.Toll@ontario.ca]
Sent: Thursday, January 26, 2012 8:49 AM
To: Jennifer Huntley
Attachments: ApplicationforWorkPermit.doc; RoadorTrailConstruction_WaterCrossing.doc

Hi Jennifer

Based on the research I've compiled at this office, it appears that the bed of the Ouse River at the location of this proposed construction project is owned by the crown. After the description you provided to me on Tuesday regarding the type of work that will be involved, I've determined an application will need to be submitted for approvals under the public lands act. I have attached the relevant forms and will do my best to respond to your submission in a timely manner.

Thank you

Matt Toll
Lands & Waters Technical Specialist
Peterborough District
Ministry of Natural Resources
300 Water Street
1st Floor, South Tower
Peterborough, ON, K9J 8M5
T (705) 755 3305
F (705) 755 3125