

## **Preparation of Replacement ATV Crossing Design and Specifications Permit Application 085/24 Bowen Property**

Once it was determined that a replacement ATV crossing was required the design and specification process was initiated in the spring of 2023.

The first requirement before even considering the design was to determine the best location for the crossing.

Location was a collaborative exercise between Gary and I through site observations and the use of GIS mapping and measuring tools. The Government of Ontario Geo Hub watershed tool was accessed to gain an understanding of the upstream and downstream components of the watershed.

We factored in the distance to cross, existence of pooled water, the area with the densest vegetation and looked for the beaver dam that was obvious on GIS maps.

A site visit verified that the beaver dam visible on GIS maps still existed, was active and was backing up water. Incorporation of the dam into the crossing was desirable as it would cut down on fill. The dam remaining structurally sound for many years also suggested the location of the dam would also be suitable for the ATV trail.

The initial visit was timed to coincide with spring runoff and high water. At the site visit the section of the beaver dam by the intermittent stream was dug out with a hand shovel in order to determine the width of the stream and observe flow rates.

The initial culvert diameter was determined that day based on the width of the stream at high flow. The culvert would be as wide as the stream.

We were fully aware that the final design of the culvert would still require sizing by an engineer based upon the analysis of watershed runoff response during flood conditions.

In the summer of 2023, an experienced local contractor was taken to the crossing location, and he walked across the wetland with us. We sought his many years of experience not only with the design and construction, but also options for using small-sized equipment. We also called and discussed the proposed crossing designed approach with a logger to discuss the corduroy components.

Once the preliminary assessments were complete, I then relied on my experience gained through working with Hydro One managing rural access road corridors to prepare a sketch and specification for the ATV trail.

I then compared my design to industry's best practices. Ministry of Natural Resources and Ducks Unlimited Access Road publications were compared to the designed ATV trail.

The drawing was then copied and the specification typed out to take to the site meeting with Crowe Valley Conservation Authority (CVCA) staff on May 22, 2024.

At the site meeting the only recommended change to the design from CVCA staff was to reduce the width to 4.0 metres from 5.0 metres.

At the conclusion of the site meeting, I informed staff that I would change the design as requested then continue with the consultation process by forwarding the design materials and completing the permit application.

The package was sent to CVCA in May 2024.

CVCA staff responded on June 19th, 2024, indicating that further review of the design would be required by qualified professionals.

Arrangements were made for the design sketch to be converted to a CAD drawing.

The drawing and specification were then sent to Gary Bowen and he then proceeded to have a P Eng and Consultant address the issues raised by CVCA.

The verification of the design of the ATV trail was outlined in the Environmental Impact Study prepared in support of the application and submitted to CVCA.

John Bowen

February 12. 2025