

Title: Precipitous Tele-Protection Communication at Glanbrook Landfill
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Background

On June 21, 2022, Jeff Cowan and Terry Crawford from HCE met with Tom Chessman of HRPI to discuss network communication issues HRPI is experiencing regarding tele-protection for the Glanbrook Landfill Gas Energy System. The existing tele-protection communication services are provided by Bell Canada using legacy copper lines and are prone to constant service interruptions. When the line is interrupted, Hydro One disconnects the Glanbrook Engine from the grid preventing it from generating electricity resulting in lost revenue to HRPI.

Hamilton Community Enterprises was engaged by HRPI given HCE Telecom experience in providing mission critical telecommunications services to determine potential solutions to remediate the chronic service interruptions with the existing Bell copper line used for tele-protection.

Tele-protection Options

Tele-protection services are a very specialized form of private, dedicated point to point data communications and is heavily governed by Hydro One. As a result, they're limited options regarding suitable technologies that can be used to provide this type of connectivity. The 3 options are

- Dedicated, private, point to point copper telephone lines
 - (lowest cost, least reliable, can be susceptible to weather events)
- Dedicated, private point - point wireless communication system
 - (mid to high cost, reliable but susceptible to weather events, wireless present higher exposure to security breaches)
- Dedicated, private point to point fibre optics
 - (high cost, very reliable, most secure, not susceptible to weather events)

Recommendation

HCE's non-regulated Energy assets are connected to Hydro One using dark fibre and it is HCE recommendation for HRPI to pursue installing fibre optics from the Hydro One connect point to the Glanbrook Landfill location, conditioned upon, the economics supporting this option.

The following diagram provides a high level visual of the required fibre build from the Glanbrook Landfill to Hydro One Recloser #897 at 1366 Hwy 56

- 11.5km fibre build with approximate cost to build estimated at \$1.3M.
- There's very minimal on-going operational costs, Opex cost would only be occurred on an as needed basis in the event of a fibre cut or locate request.
- The fibre asset would be owned by HRPI



If the economics do not support the fibre option, an alternative is to attempt to repair the existing copper lines. Depending on the level of effort it's difficult for HCE at this time to estimate the cost without performing an audit of the current copper service. Also, given the nature of copper lines, repairs may only hold for a short period of time before interruptions re-occur.

HCE has provided some additional material reviewing rural connectivity activity in Hamilton based on recent Provincial and Federal programs. HCE has also provided a discussion paper regarding the impact of digital services and community broadband in Hamilton for additional commentary.

HCE would be please to further discuss broadband and critical infrastructure with the HRPI Board of Directors.

Best Regards

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President and CEO
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