

Main Street Renewal – Carleton Electric March 22, 2013 Undergrounding Estimates Summary

PG Draft March 24, 2013

Background and Understandings:

- The existing hydro poles on the west side of Main Street between Clegg Street and Oblate Avenue / the south limit of Immaculata High School (Clegg to IMAC) are presently located more or less in the centre of the proposed new 2 m to 3 m wide clear sidewalk. Therefore the hydro poles need to be removed and relocated from their present locations. The existing poles, wiring and appurtenances could be relocated to the east approx 2 m to 3 m, so as to be located inside of new curbside utility/street furniture boulevard zone, or alternatively removed and replaced with an undergrounding system. (There are other possibilities and/or combinations of scenarios that should be considered, however the attached estimates are based on this understanding.)
- Cost savings for undergrounding are available due to the concurrent installation of an LRT electrical duct bank on the west side of Main Street from Clegg to Greenfield.
- Ottawa Hydro/City has provided several Level 'B' cost estimates (+75%, -25%) for various sections of Main Street. On March 12/13, Ottawa Hydro provided an undergrounding estimate for the priority section from Clegg to IMAC in the amount of ~\$2.0M. (Which means the Level 'B' estimate has a range from \$1.5M to \$3.5M). This estimate includes a \$2.4M estimated undergrounding cost, for an approximate 0.4 km, from Clegg to IMAC distance, less a cost saving of \$0.12M for combining works with the LRT undergrounding and less a cost of \$0.24M for not having to laterally relocate the overhead hydro infrastructure. This estimate does not include: telecom overhead relocations; customer electrical upgrades and corrections, as well as, several other exclusions which can be considered N/A or part of the LRT / Renewal works. (It is assumed this estimate does not include for reinstatement of secondary electrical services to the affected existing buildings.)
- OOECA finds these estimates to be too vague in scope and inadequate for reasonable consideration.

Estimates Assumptions:

- Distance from Clegg to IMAC is 470 metres (SW corner of Clegg & Main to hydro pole located north of south limit of IMAC).
- LRT duct bank must be located on the west side of Main Street from Clegg to IMAC.
- Removal of (14) existing poles and (1) guy pole to the south of the NW corner of Clegg. (These poles have reached end of life.)

- (4) concrete encased duct banks are required to replace the HV overhead servicing the existing buildings from Clegg to IMAC. (The Project Information and General Terms of Reference indicates “...Ensure that the related servicing and utility design include adequate capacity to serve the projected dwelling units as outlined in Section 4.3 of the CDP, as well as potential commercial, institutional and other uses as permitted in the zoning.” Therefore, duct banks for future Oblate development are not included in the estimates.)
- Transformers must be located on the east side of Main, where there is a 4 to 5 metre wide strip of city owned land to the east of the 20 metre ROW.

Carleton Electric Estimates based on:

A - Undergrounding c/w transformer bases, transformers, sectionalizers, switches and secondary connections – Clegg to IMAC

1. Provide (4) concrete encased ducts in the same trench as the LRT duct bank. (Assume manholes required by LRT.)
2. Provide (12) 25 metre long concrete encased (4) cell duct banks across to the east side of Main Street – (6) for HV to east side transformers and (6) for the secondary wires crossing back to the west side to service the existing (23) buildings on the east side of Main. The existing (3) duct banks crossing Main to service St. Paul & Oblates need to be modified.
3. Provide secondary wiring to service the existing (23) buildings on the east side of Main and reconnect (3) HV service connections to existing St. Paul & Oblates.
4. Provide (6) sectionalizers and transformers.
5. Provide (12) switches and bases.

Estimated Cost ~\$1.66M

B – 3 conductor HV cable underground– Clegg to IMAC

1. Provide (470) metres of HV 3 conductor cable including terminations and cross overs.

Estimated Cost ~\$0.15 M

C – Relocate Existing Overhead – Clegg to IMAC

1. Provide (15) new poles and relocate existing hydro wires and telecom wires to new the poles.

2. Remove (15) existing poles.
3. Provide secondary wiring to service the existing (23) buildings on the east side of Main.
4. Reconnect (3) HV service connections to existing St. Paul & Oblates.

Estimated Cost ~\$0.70 M

Estimated Cost of Undergrounding $\approx A + B - C = \$1.66M + \$0.15 M - \$0.70 M = \sim\$1.11M$

Considerations for Savings:

1. There is City of Ottawa property on the east side of Main from Clegg to Oblate Ave, which increases the east side width of the ROW by approx 4 m - 5m. This is the logical location for transformers. Opportunity for undergrounding savings should be analysed and considered. Can the LRT duct bank run on the east side of Main from Clegg to IMAC?
2. Is there another method to temporarily provide secondary service to the existing (23) buildings that does not involve installation of the (\$600,000) sectionalizers and transformers? Can the existing transformers be temporarily installed (perhaps on temporary poles) to undergrounded HV wires, with secondary reconnection undergrounded to the existing (23) buildings? The civil undergrounding work for future development could then be provided, but the cost of future development electrical equipment and wiring would be to the developers account.