



Downtown Streetlights

Replacement Options

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Downtown Streetlight History

Cobourg's downtown streetlight fixtures were installed in 1986 (Division to Abbott) and 2001 (Division to William) and were then retrofitted in 2009 to suit an induction lamp that was ahead of its time upon installation and was quite a lot more efficient than the previous high pressure sodium lights. The typical lifespan of the induction lights was expected to be 60,000-70,000 hours (16.5 years).

Existing DOWNTOWN Light
Fixture

The induction technology has not advanced especially in comparison to LED technology so replacement parts for the induction style lights are no longer available. There are retrofit kits available for LED lights however considering the age of the existing fixtures, the fact that they have been retrofitted once already, and the fact that LED lights generate a significant amount of heat, it is being recommended that the entire fixture be replaced.

LED fixtures are designed to dissipate the heat generation and extend the life of the lamp. LED lifetime is expected to be 70,000-100,000 hours and they consume roughly half the energy of the induction lights while providing equal or more light output per fixture.

Streetlight Poles

The existing streetlight poles are a 4" aluminum fluted style with a decorative base. The poles have two sets of double arms for accessories such as banners and flower baskets. The Town has approximately 205 hanging baskets and the banner size is 17" x 72".

There are approximately 358 decorative fixtures/poles in the downtown area as shown:



GIS map of existing heritage light fixtures

Pole Loading

Poles have an Effective Projected Area (EPA) rating which is a calculation that determines the amount of wind force the pole can withstand. Each accessory and fixture on a street light pole also has an EPA rating and when all are added up per pole, the total EPA for the accessories must be less than the EPA rating of the pole. The higher the EPA, the stronger the pole.

The EPA of a fixture will be higher for a fixture that has closed-in sides as the siding creates more of a drag force on the pole. Banners by far create the highest force on poles since they act like a sail. The larger the sail, the stronger the force.

The existing banners installed on the downtown poles are 72" x 17" in dimension. This size of banner, along with the existing closed-sided fixture, and very large flower baskets are all too much load for the existing poles. We have already experienced poles breaking off at the base due to high winds in the past. It is unknown if the poles were ever rated high enough for the size of these accessories however engineering standards have changed at least twice since

their installation. In 2020, a 4" aluminum pole would not meet EPA requirements for the existing accessories.

Some of these poles are now going on 20 years old and due to the historic overloading are likely nearing their end of life. Consideration of replacement is warranted.



Pole Replacement Options

Option 1: Reduce load on existing poles

The first option utilizes the existing poles while replacing the fixtures and accessories with lower EPA ratings. Due to the age of the existing poles, it will not be possible to exactly determine their current EPA rating. Reducing the weight and size of accessories or eliminating accessories all together will extend the life of the poles and save money in the short term.

Accessory replacement costs are estimated to be as follows:

Accessory	Est. \$ / Unit	Est. # Units	Total \$ + HST
Hanging Baskets	\$ 25.00	205	\$ 5,125.00
Banners*	\$120.00	230	\$ 27,600.00

*double sided

Option 2: Replace poles with 4" steel pole on existing concrete base

This proposed pole option is a stronger material than aluminum and is able to utilize the existing concrete base meaning there is no requirement to disturb the surrounding sidewalk. The steel pole has a smooth wall as opposed to the more decorative fluted pole style that currently exists downtown. This option does come with a 39.5" tall, decorative base that will cover the steel bolts that the pole attaches to at grade. The steel pole will be capable of

accommodating the existing accessories however it is still strongly recommended that the banner size be reduced especially if any are being considered for replacement in future.

Option 3: Replace poles with 5" fluted cast aluminum pole on new concrete base

The final option is the most expensive however the style of the pole is the most similar to the existing pole style and will be strong enough to accommodate the existing accessories. Not only are the poles more expensive but the existing concrete base is too small and will have to be replaced meaning the surrounding sidewalk has to be removed and reinstated.

Streetlight Fixture Replacement Options

Option A: Villa-Maria



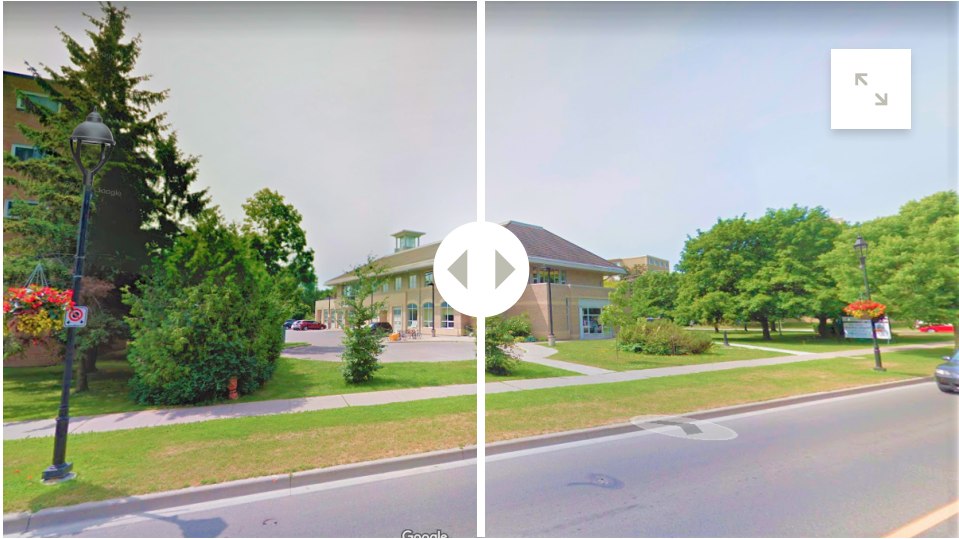
Option B: Cartier Fixture



Option A: Villa Maria Hall _____ Victoria
Option B: Cartier



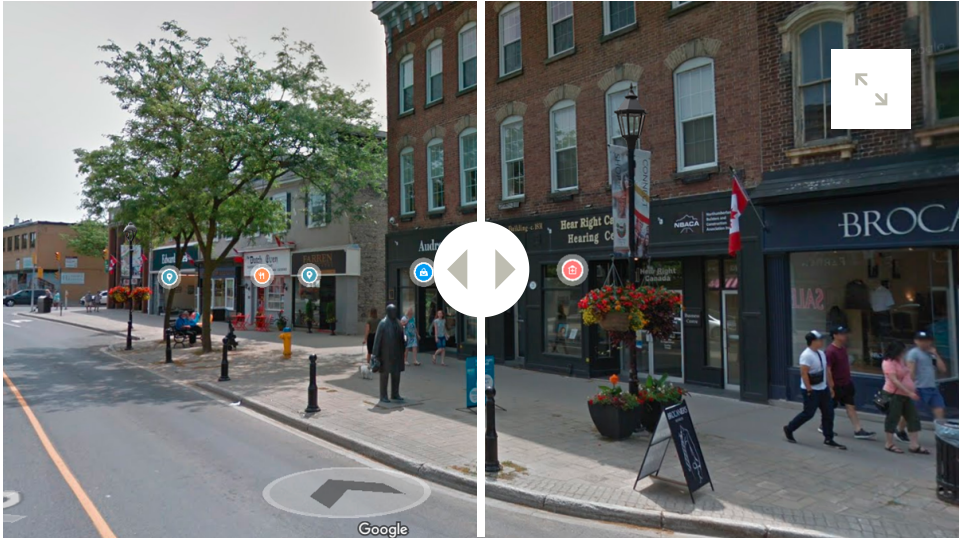
Option A: Villa Maria _____ Marie Dressler
House _____ Option B: Cartier



Option A: Villa Maria
_____ Library _____
Option B: Cartier



Option A: Villa Maria_____30 King
Street_____Option B: Cartier



Option A: Villa Maria_____23 King
Street_____Option B: Cartier

Option C: Hudson



Option C: Hudson Fixture (typical residential decorative fixture)

The third option (C) is the Hudson style fixture which the Town is currently specifying for all decorative replacement fixtures around town and also for any new developments. There are already a few of these installed in the heritage district temporarily since there is no other way to repair the heritage lights currently without replacing the fixture.

Option Cost Estimates

The range of expenses associated with the many options starts at \$193,500 for Option 1 (no pole replacement) and Option C (Hudson) fixture type plus the cost of replacement accessories.

The highest cost option is Option 3 (5" aluminum fluted) and Option B (Cartier) at \$1,672,700 plus the cost of replacement accessories.

Option	Fixture Type	\$ / Each	Total \$ + HST
1	A	\$ 1,600.00	\$ 275,200.00
	B	\$ 2,075.00	\$ 356,900.00
	C	\$ 1,125.00	\$ 193,500.00
2	A	\$ 3,825.00	\$ 657,900.00
	B	\$ 4,300.00	\$ 739,600.00
	C	\$ 3,350.00	\$ 576,200.00
3	A	\$ 9,250.00	\$ 1,591,000.00
	B	\$ 9,725.00	\$ 1,672,700.00
	C	\$ 8,775.00	\$ 1,509,300.00

Range of Cost Options

Implementation Alternatives

Alternative 1: Replace only fixtures all at one time

- Consistent aesthetic for fixture style
- Risk of unexpected pole failure and fixture damage
- Inconsistent aesthetic for pole style if replaced as needed
- Contractor onsite twice to replace fixture and again to replace pole
- Utilize existing maintenance contractor (quick) or open tender (delay)

Alternative 2: Replace all fixtures and poles at one time

- Consistent aesthetic
- Most cost effective
- Utilize existing maintenance contractor (quick) or open tender (delay)

Alternative 3: Replace fixtures and poles as needed (upon failure)

- Consistent with approach for residential areas where not all

fixtures will match for a period of time before they are all replaced.

- Risk of unexpected pole failure
- Assume upon failure of either component, both are replaced
- Utilize existing maintenance contractor

Alternative 4: Replace fixtures temporarily with residential Hudson fixtures, as needed and defer full replacement of fixtures/poles

- Assumes Option A or B chosen for fixture type
- Hudson fixtures continuously in stock and can be relocated/reused elsewhere.
- Risk of unexpected pole failure
- Contractor onsite twice to replace fixture and again to replace pole
- Utilize existing maintenance contractor

2021 Budget Allocation

Given the number of options available for Council's consideration, a lump sum of \$500,000 has been proposed for 2021. Should Council's chosen options exceed \$500k, it is unlikely that expenditures would begin until mid to late 2021 and the proposed budget would be more than sufficient to at least start the project in 2021.

Next Steps

1. Council to choose preferred fixture type (*Option to install one of each fixture type to assist in selection*)
2. Council to choose preferred pole type
3. Council to choose preferred implementation plan
4. Prepare tender, if required.

Special Thanks to Otonabee Electrical Services and Cyclone Lighting for preparing the streetlight renderings and for providing high level cost estimates to assist with this capital project proposal.



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