

Evaluation of Municipal Water Supply Class Environmental Assessment Township of Georgian Bluffs



**Phase II Public Meeting
September 21, 2017
2 pm to 4 pm and 7 pm to 9 pm**



Background

- This Class Environment Assessment (Class EA) has been initiated to evaluate municipal water supply alternatives for the Study Area in Georgian Bluffs.
- The Study Area includes the shoreline area south of the Indian River to the City limits, the Brooke Area, and Pottawatomi Village.
- Some residents of this area have indicated an interest in receiving municipal water supply. For long term sustainability, the Pottawatomi Village water system should be connected to a larger water system.
- The Class EA process includes review of feasible alternatives and invites public input. The Class EA considers financial, natural environment, heritage and social impacts when comparing alternatives.
- A second public meeting will be held later this fall.



General Alternatives

- **Alternative 1** – Expand existing East Linton water system to service the Study Area.
- **Alternative 2** – Construct new water treatment plant and water intake to service the Study Area.
- **Alternative 3** – Extend City of Owen Sound water system to Study Area, or to select portions of the Study Area.
- **Alternative 4** – Do Nothing



Technical and Planning Considerations

- Without sanitary sewer servicing, future lot severances, and the number of new residential connections, assumed to be minimal.
- The Study Area has significant elevation differences. This results in different “pressure zones” being required.
- The existing East Linton distribution system has a high pressure area along Grey Road 1 and a low pressure area along the shoreline.
- If the Study Area was connected to the East Linton water system, it would connect to the low pressure area.
- Therefore, a booster station would be required to add extra water pressure for the higher elevation areas of the Study Area.

Technical and Planning Considerations

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- There is significant, remaining treatment capacity in the East Linton water system, after a 20-year growth projection.
- There are 464 ERU's (equivalent residential units) now connected to the East Linton System (July, 2017). The estimated, total capacity of the East Linton system is $\pm 1,700$ ERU's.
- Of the current 464 ERU's, 84 ERU's are in Cobble Beach.
- The estimated, 20 year, ERU's that will be connected to the East Linton water system, north of the Indian River, is 1,165 ERU's. This includes 400 ERU's in Cobble Beach.
- The 20 year projected ERU's in the Study Area is 335. Therefore, total ERU's in 20 years, would be 1,500 ERU's. This compares to the East Linton water plant capacity of 1,700 ERU's.



Summary of Technical Evaluation

- Based on reasonable growth estimates, there is sufficient treatment capacity to provide servicing to the Study Area from the East Linton Water system.
- Additional water storage, however, is required, if fire flows are provided. A water storage facility is recommended at Mount Pleasant Drive.
- Booster pumping is required to increase water pressure for higher elevations in the Study Area.



Summary of Alternatives

- Generally, no environmental, social or heritage impacts identified at this time with Alternative 1 or 2. Watermains would be located in existing roads or road right of ways.
- Potentially, some impact to agricultural land at Mount Pleasant Drive for a booster station and possible reservoir. Some loss of parkland (\pm 4,000 sq. ft.) if new water plant built at Sarawak Family Park.
- To date, no interest shown by City of Owen Sound to expand water system in the Study Area.
- As such, review preliminary cost estimates for Alternatives 1 and 2.

Alternative 1 – Connect to East Linton Water System



- Alternative 1A – expand East Linton water distribution system and provide larger watermains (up to 12” diameter) to provide fire fighting flows.
- With Alternative 1A, provide water reservoir to provide fire water flows for Study Area.
- The fire storage now available in the East Linton system (at East Linton water plant and in standpipe near Cobble Beach) is too far north to provide fire flows in southern Study Area.
- Alternative 1B is the same as 1A, but no fire flows provided. Watermains are 8” diameter (though larger watermains assumed on Range Road, Grey Road 1 and Grey Rd 17A). There is no fire storage reservoir.

Alternative 1 – Connect to East Linton Water System....con't



- The cost for Alternative 1A would be approximately \$8,400,000
- The cost for Alternative 1B would be approximately \$6,700,000
- Assuming there was 50% grant, the cost for Alternative 1A would be \$16,400 per ERU, and the cost for Alternative 1B would be \$13,100 per ERU.
- The standard \$6,000 connection fee would be added to the above cost.
- The above ERU costs are based on an estimated 335 ERU's in 20 years. However, since approximately 78 of these are existing homes in the Victory Subdivision (already on Owen Sound water system), 257 ERU's have been assumed to calculate the above cost per ERU.

Alternative 2 – Construct New Water Treatment Plant



- With Alternative 2, a new water intake and water treatment plant would be constructed at the Sarawak Family Park.
- Building size would be ± 20 m x 20 m. This would take up about 5% of the park area.
- Alternative 2A would feature a booster station and a water standpipe at Mount Pleasant Drive.
- Alternative 2A would feature watermains up to 12 inch diameter and would provide fire fighting flows.
- Alternative 2B would feature a similar water plant as Alternative 2A, but fire fighting flows would not be provided.

Alternative 2 – Construct New Water Treatment Plant...con't



- With Alternative 2B, watermains would be 200 mm \varnothing (though larger watermains assumed on Range Road, portions of Grey Road 1 and Grey Rd 17A).
- There would be no water standpipe at Mount Pleasant Drive.
- The estimated cost of Alternative 2A is \$11,700,000.
- The estimated cost of Alternative 2B is \$9,350,000.
- Assuming 50% grant, the approximate cost per ERU for Alternative 2A is \$22,800. The approximate cost per ERU for Alternative 2B is \$18,200.
- The standard \$6,000 connection fee would be added to the above cost.



Compare Cost of Alternatives 1 and 2

Including the \$6,000 connection fee, total costs are summarized as follows:

- Total estimated cost for Alternative 1A is \$22,400.
- Total estimated cost for Alternative 1B is \$19,100.
- Total estimated cost for Alternative 2A is \$28,800.
- Total estimated cost for Alternative 2B is \$24,200.

The annual operating and reserve fund cost, for Alternative 1A and 1B, would be approximately \$900/year.

The annual operating and reserve fund cost, for Alternative 2A and 2B, would be approximately \$1,500 to \$2,000/year.



Preliminary Recommendations

- There are extra operating, and capital depreciation costs, to construct and operate a second water treatment plant.
- As such, there are long term savings to own/operate one treatment plant as opposed to a second treatment plant.
- However, long term (30 years plus?) there are limitations with additional, major expansions of the East Linton water plant.
- However, the East Linton Water Plant could be expanded to at least 3,000 m³/d from the current 2,600 m³/d.
- Therefore, a new water system for the Study Area should be designed to be adaptable to a second, new water treatment plant in the future.

Questions

