



WASTEWATER TREATMENT ALTERNATIVES EVALUATION

Evaluation of the Chelmsford Wastewater Treatment Alternatives

- 1 Alternative 1: Redirect wastewater flows from the Chelmsford WWTP to the Valley East WWTP
- 2 Alternative 2: Redirect wastewater flows from the Chelmsford WWTP and the Azilda WWTP to the Valley East WWTP
- 3 Alternative 3: All plants remain independant and Chelmsford WWTP is upgraded for additional capacity
- 4 Alternative 4: Do Nothing

EVALUATION

CRITERIA	ALTERNATIVE 1	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4
Healthy Watersheds	N/A	N/A	N/A	N/A
Natural Heritage	A new lift station would be required between the Chelmsford WWTP and the Valley East WWTP, which would have some new impact on the natural heritage. The sewers and forcemains would be aligned along existing road right of ways and would therefore have limited impact.	Two new lift stations would be required between the Chelmsford WWTP and the Valley East WWTP as well as between the Azilda WWTP and Valley East WWTP, which would have some new impact on the natural heritage. The sewers and forcemains would be aligned along existing road right of ways and would therefore have limited impact.	Infrastructure would be introduced in already disturbed areas on the existing Chelmsford WWTP site; therefore, no impacts to natural heritage are expected.	No additional infrastructure would be implemented therefore there would be no impact to additional natural heritage features.

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Community Well Being	Some construction impacts due to the requirement for new linear infrastructure through the Chelmsford community.	Some construction impacts due to the requirement for new linear infrastructure through the Chelmsford and Azilda communities. More impact than Alternative 1.	Would include minimal impact to residents since all construction activity would be undertaken on the site as opposed to throughout the community.	No construction impact on the community; however, the Chelmsford community would not be able to grow to its target population per the City's Official Plan. Growth would be limited.
Cost Effectiveness	Lesser cost effective solution. Requires additional capital infrastructure projects/expenditures. NPV (25 yrs) = \$140,000,000	Least cost effective solution due to the requirement for the most additional capital infrastructure. NPV (25 yrs) = \$170,000,000	Most cost effective solution for alternatives that fulfill the goal to service a growing community of Chelmsford. This option optimizes the use of existing infrastructure. NPV (25 yrs) = \$86,000,000	No cost, therefore no cost impact.
Constructability and Ease of Integration	Integration within the system would be required. While it wouldn't pose a great challenge, effort will be required. Construction of the new lift station on or near the Chelmsford WWTP may be a challenge given the space on the site is limited.	Integration within the system would be required. While it wouldn't pose a great challenge, effort will be required. Construction of the new lift station on or near the Chelmsford WWTP may be a challenge given the space on the site is limited.	No construction or integration would be required within the system, but coordination for construction activities within the WWTP would be required. Would be challenging given the site constraints.	No construction required therefore there would be no issues with regards to the constructability or integration of additional infrastructure.

EVALUATION

CRITERIA	ALTERNATIVE 1	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4
Operability	Operational requirements would not be significantly lessened given that although the operation of the Chelmsford WWTP would no longer be required, the operation of a new facility (the new lift station) would be added.	Operational requirements would be significantly lessened given that although the operation of the Chelmsford WWTP and the Azilda WWTP would no longer be required, the operation of two new facilities (the two new lift stations) would be added.	Operation requirements remain as is.	Operation requirements remain as is.
Sustainability	Less sustainable since existing infrastructure is not being used to the end of its useful life and additional infrastructure is being added into the system that requires additional maintenance.	Less sustainable since existing infrastructure is not being used to the end of its useful life and additional infrastructure is being added into the system that requires additional maintenance.	More sustainable given that there is less additional infrastructure being introduced that would require maintenance. This alternative optimizes the use of existing infrastructure.	Not sustainable from the standpoint that growth in the community would be limited and therefore additional demands and funding (through water rates) to maintain the system would be limited.
Preferred Selection	Less Preferred	Less Preferred	Preferred	Least Preferred (Does not support the City's objective of supporting growth in its communities)