

TOWNSHIP OF ALGONQUIN HIGHLANDS HAULED SEWAGE MANAGEMENT SYSTEM

Rankings for Hauled Sewage Management System Design Options

Maple Lake:

Weighting (1-5)		4	4	5	2	5	4	3	5	5	4	5
Option	Result	Cost	Approvals Costs	Water Quality	Land	Hydro req'd	Vulnerability	Site Disturbance	Maintenance	Expansion Capabilities	Aesthetics	Reliability
Waterloo Biofilter	26	0	1	0	0	1	1	1	0	1	0	1
Constructed Wetlands	6	-1	1	1	0	1	-1	0	0	0	0	0
Lagoons	-10	1	1	-1	-1	1	-1	-1	-1	-1	-1	1

Pine Springs:

Weighting (1-5)		4	4	5	2	5	4	3	5	5	4	5
Option	Result	Cost	Approvals Costs	Water Quality	Land	Hydro req'd	Vulnerability	Site Disturbance	Maintenance	Expansion Capabilities	Aesthetics	Reliability
Waterloo Biofilter	8	0	-1	0	0	-1	1	1	0	1	0	1
Constructed Wetlands	-10	-1	-1	1	1	-1	-1	0	0	0	0	0
Lagoons	-23	1	-1	-1	-1	0	-1	-1	-1	-1	-1	1

EXPLANATION OF EVALUATION MATRICES

Scoring

1	Positive Aspects associated with this design
0	Neutral
-1	Negative Aspects associated with this design

Ranking

1	Not important
2	Somewhat unimportant
3	Neutral
4	Somewhat important
5	Very important

Design Factors

Cost	Cost to municipality to implement the Design Option (construction)
Approvals Cost	Cost to municipality to receive government approvals for the Design Option
Water Quality	Quality of treated effluent leaving system
Land	Areal land requirements for implementation
Hydro req'd	Requirements for power to operate system
Vulnerability	Susceptibility of design to damage
Site Disturbance	Requirements for vegetation removal or disruption to habitat
Maintenance	Level of maintenance required for system and associated costs
Expansion capabilities	Level of difficulty required to increase capacity of facility
Aesthetics	Visual impact, noise and odour resulting from facility,
Reliability	Robustness and suitability of technology

Site	Maple Lake	Pine Springs
Legislation	Approval by MOE & Certificate of Approval issued under Section 53 of OWRA	Approval by MOE & Certificate of Approval issued under Section 53 of OWRA
Approval Process	application of approval including supporting info detailing the proposed design, condition of local environment and anticipated dynamics between the two entities.	application of approval including supporting info detailing the proposed design, condition of local environment and anticipated dynamics between the two entities; MNR has expressed concerns requiring additional studies; MOE hearing
Cost of Approvals	\$13,500.00 * plus an additional \$18,000.00 if hearing is required	\$31,500.00 - hearing is required because it is crossing municipal boundaries + \$\$\$ for additional studies
Design Criteria	36,500 L/day	36,500 L/day
Cost To Bring in Hydro	Already exists.	\$100,000.00 to \$110,000.00 (estimate)
Waste Receiving and Management Criteria	manually - Standpipe hookup for discharge & cost of full time operator to monitor automated - Metcon IEA Waste Management Loggers (power supplied) (basic package ~ \$80,000)	manually - Standpipe hookup for discharge & cost of full time operator to monitor automated - Metcon IEA Waste Management Loggers (power supplied) (basic package ~ \$80,000)
Road Access	Maintained gravel 2 lane mun. road	Maintained gravel 2 lane mun. road
Soil Type	Bedrock - silty to sandy till 1.5 m overlying bedrock	sand interlayered with silt or gravel
Size of Site	40.5 ha	19.7 ha
Size of Approved Fill Area	1.2 ha	0.8 ha
Size of Remaining Area	39.3 ha	18.9 ha
Compatibility with Solid Waste Plan	This is not a concern - Class EA can proceed. If facility goes ahead, the TOR for the SWM EA must be amended to reflect the introduction of a septage treatment facility	This is not a concern - Class EA can proceed. If facility goes ahead, the TOR for the SWM EA must be amended to reflect the introduction of a septage treatment facility
Groundwater Flow Direction	East-Southeast	Northwesterly

Pine Springs

Option	4	4	4	5	2	5	4	3	5	4	5	4	3	5
	Cost	Approvals Costs	Hydro costs	Water Quality	Land	Hydro requ'd	Vandalism	Sludge	Maintenance	Operations \$	Expansion Capabilities	Aesthetics	Primary Treatment	Dependability
Waterloo Biofilter	1	-1	-1	1	1	-1	4	0	0	-1	-1	1	1	1
Ecoflo Biofilter	-1	-1	-1	-1	1	-1	-4	0	-1	-1	-1	-1	-1	-1
Constructed Wetlands	-1	-1	-1	1	1	-1	-4	0	0	1	-1	1	-1	1
Lagoons	1	-1	0	-1	-1	0	4	0	0	0	-1	-1	1	1

-1

-12 0 4 -15 0 0 -5 -4 -20 0 0 10

Option	4	4	4	5	2	5	4	3	5	4	5	4	3	5
	Cost	Approvals Costs	Hydro costs	Water Quality	Land	Hydro requ'd	Vandalism	Sludge	Maintenance	Operations \$	Expansion Capabilities	Aesthetics	Primary Treatment	Dependability
Waterloo Biofilter	4	-4	-4	5	2	-5	4	0	0	-4	5	4	3	5
Ecoflo Biofilter	-4	-4	-4	-5	-2	-5	-4	-3	-5	-4	-5	-4	-3	-5
Constructed Wetlands	-1	-4	-4	5	2	-1	-4	0	0	4	-5	4	-3	5
Lagoons	1	-4	0	-5	-2	0	4	0	0	0	-5	-4	3	5

15

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adjust hydro cost to neutral

Option	4	4	4	5	2	5	4	3	5	4	5	4	3	5
	Cost	Approvals Costs	Hydro costs	Water Quality	Land	Hydro requ'd	Vandalism	Sludge	Maintenance	Operations \$	Expansion Capabilities	Aesthetics	Primary Treatment	Dependability
Waterloo Biofilter	4	-4	0	5	2	-5	4	0	0	-4	5	4	3	5
Ecoflo Biofilter	-4	-4	-4	-5	-2	-5	-4	-3	-5	-4	-5	-4	-3	-5
Constructed Wetlands	-1	-4	0	5	2	5	-4	0	0	4	-5	4	-3	5
Lagoons	1	-4	0	-5	-2	0	-4	0	0	0	-5	-4	3	5

19

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8

-15

include hydro hook-up in costing category

Option	4	4	4	5	2	5	4	3	5	4	5	4	3	5
	Cost	Approvals Costs	Hydro costs	Water Quality	Land	Hydro requ'd	Vandalism	Sludge	Maintenance	Operations \$	Expansion Capabilities	Aesthetics	Primary Treatment	Dependability
Waterloo Biofilter	-4	0	0	5	2	-5	4	0	0	-4	5	4	3	5
Ecoflo Biofilter	-4	0	-4	0	-2	-5	-5	-3	-5	-4	-5	-4	-3	-5
Constructed Wetlands	-4	0	0	5	2	5	-4	0	0	4	-5	4	-3	5
Lagoons	4	0	0	-5	-2	0	-4	0	0	0	-5	-4	3	5

15

-49

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-8

with costs as high concern

Option	5	4	4	5	2	5	4	3	5	4	5	4	3	5
	Cost	Approvals Costs	Hydro costs	Water Quality	Land	Hydro requ'd	Vandalism	Sludge	Maintenance	Operations \$	Expansion Capabilities	Aesthetics	Primary Treatment	Dependability
Waterloo Biofilter	-5	-4	0	5	2	-5	4	0	0	-4	5	4	3	5
Ecoflo Biofilter	-5	-4	-4	-5	-2	-5	-4	-3	-5	-4	-5	-4	-3	-5
Constructed Wetlands	0	-4	-4	5	2	5	-4	0	0	4	-5	4	-3	5
Lagoons	5	-4	0	-5	-2	0	-4	0	0	0	-5	-4	3	5

10

-58

5

-11

Maple Lake

	4	4	4	5	2	5	5	3	5	4	5	4	3	5
Option	Cost	Approvals Costs	Hydro costs	Water Quality	Land	Hydro requ'd	Vandalism	Sludge	Maintenance	Operations \$	Expansion Capabilities	Aesthetics	Primary Treatment	Dependability
Waterloo Biofilter	1	1	1	0	0	1	1	1	0	-1	1	1	1	1
Ecoflo Biofilter	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
Constructed Wetlands	-1	1	-1	1	0	1	-1	1	0	1	-1	1	1	1
Lagoons	1	1	1	-1	-1	1	-1	1	1	0	-1	-1	-1	1

1 0 8 0 -5 -4 10 -10 6 0 -4 -10 0 0 10

with costs as somewhat important

Factor	4	4	4	5	2	5	4	3	5	4	5	4	3	5	
Option	Cost	Approvals Costs	Hydro costs	Water Quality	Land	Hydro requ'd	Vandalism	Sludge	Maintenance	Operations \$	Expansion Capabilities	Aesthetics	Primary Treatment	Dependability	
Waterloo Biofilter	4	4	4	0	0	5	4	3	0	-4	5	4	3	5	37
Ecoflo Biofilter	-4	-4	-4	-5	-2	5	-5	-3	-5	-4	-5	-4	-3	-5	-48
Constructed Wetlands	-4	4	-4	5	0	5	-4	3	0	4	-5	4	3	5	16
Lagoons	4	4	4	-5	-2	5	-5	3	5	0	-5	-4	-3	5	6

With costs as very important

Factor	5	4	4	5	2	5	4	3	5	4	5	4	3	5	
Option	Cost	Approvals Costs	Hydro costs	Water Quality	Land	Hydro requ'd	Vandalism	Sludge	Maintenance	Operations \$	Expansion Capabilities	Aesthetics	Primary Treatment	Dependability	
Waterloo Biofilter	5	4	4	0	0	5	4	3	0	-4	5	4	3	5	38
Ecoflo Biofilter	-5	-4	-4	-5	-2	-5	-5	-3	-5	-4	-5	-4	-3	-5	-59
Constructed Wetlands	-5	4	TRUE	5	0	5	-4	3	0	4	-5	4	3	5	20
Lagoons	5	4	4	-5	-2	5	-4	3	5	0	-5	-4	-3	5	8