

Wastewater Project Update

Summer Village of Crystal Springs
August 27, 2016

Today's Update

- ▶ Status of Regional Lines
- ▶ Local collection system plans
- ▶ Estimated Costs and Funding
- ▶ Next Steps and Timing

South Pigeon Lake Regional Wastewater System

- ▶ **Regional Line Phase I: Lagoon to Village at Pigeon Lake (VPL)**
 - Fully commissioned and operational
 - Lagoon Upgrade, pump stations and pipe –
Approx. \$13.5 M

- ▶ **Regional Line Phase II: VPL to Poplar Bay**
- ▶ Water for Life funding approved for Engineering design at 90% of cost.
- ▶ Estimated cost to Crystal Springs for their share of the Phase II line is approx. \$50K.

Management Structure

- ▶ New Regional Wastewater Commission is in process of being approved
 - Six municipalities including the County of Wetaskiwin will own and operate system
 - NEPL will provide lagoon services under contract
 - A Commission is a corporation that does not operate for profit and will be managed by representatives of the participating Municipalities.

Regional System Costs

- ▶ Operating cost of the Regional system, is estimated at \$144,755 shared by six municipalities.
- ▶ The Crystal Springs share is 9.27% of the total so our share of the cost, is \$13,400.
- ▶ This is approx. \$75 per lot per year.

Local Collection Line

- ▶ Geotechnical data collected.
- ▶ Detailed Design to begin this fall.
- ▶ Low-pressure system with an Effluent pump (STEP) in each holding tank.
- ▶ Directional drilling will be used to reduce disturbance to ground surface and remediation costs.
- ▶ Initial estimated cost of Crystal Springs line: \$1.8 M.

Local Collection Line (Con't)

- ▶ Pipes will be 3", 4" and 6" diameter HDPE (High Density Poly Ethylene).
- ▶ HDPE is an inert plastic in use for over 60 years.
- ▶ Residential lines will be 1-2" diameter.
- ▶ Each line will have a c.c. valve at the property line.
- ▶ Each line will have check valves at the property line and the tank.
- ▶ The pump also functions as a check valve.

Municipal Infrastructure Costs

Infrastructure Construction	\$1.8 M
Building Canada Grant	(\$1.2) M
Reserves and Deferred Revenue	(\$0.6) M
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Capital Cost /lot for municipal lines	
	<u>\$ 0</u>

Based on the information we have at this time, the total cost of the municipal portion of the system will be funded through grants and reserves.

On Lot Costs

Base Costs – all Cases

Pump, Biotube and Electrical (installed)	\$4.2 K – \$4.8 K
Line and Connection at/to Property line	\$0.6 K – \$1.7 K
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	\$4.8 K – \$6.5 K

PLUS

Case I Existing good 2 compartment tank

Riser insulation, pump out, inspections, plumbing	\$1.3 K – \$1.5 K
Contingency	\$0.3 K – \$0.4 K
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Total Case I	\$6.4 K – \$8.5 K

Case II Single compartment new pump vault

Ultra Rib basin, insulation, installation	\$1.9 K – \$2.3 K
Riser insulation, pump out, inspections, plumbing	\$1.5 K – \$1.6 K
Contingency	\$0.4 K – \$0.5 K
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<i>Existing tank at least 1000 gal</i>	Total Case II \$8.6 K – \$10.9 K

**based on contractor pricing for materials, does not include surface costs/landscaping*

***Higher costs shown allow for longer pipeline distances, longer electrical service lines, obstructions, electrical panel modifications.*

On Lot Costs – Con't:

On Lot Costs– based on contractor pricing for materials, does not include surface costs/ landscaping

Base Costs – all Cases \$ 4.8 K – \$ 6.5 K

PLUS

Case III Single Compartment with new concrete tank

New 500 gal tank installed and insulation \$ 3.4 K – \$ 4.0 K

Riser insulation, pump out, inspections, plumbing \$ 1.3 K – \$ 1.4 K

Contingency \$ 0.5 K – \$ 0.6 K

Existing tank less than 1000 gal **Total Case III** \$10.0 K – \$12.5 K

Case IV New 2 compartment tank

New 1200 gal tank, insulation, installation \$ 6.4 K – \$ 7.1 K

Inlet sewer plumbing \$ 0.3 K – \$ 0.8 K

Contingency \$ 0.6 K – \$ 0.7 K

Total Case IV \$12.0 K – \$15.5 K

**based on contractor pricing for materials, does not include surface costs/ landscaping*

***Higher costs shown allow for longer pipeline distances, longer electrical service lines, obstructions, electrical panel modifications.*

Estimated Annual Operating Costs

- ▶ Regional System Operation
 - includes NEPL lagoon, power costs, operators, administration, equipment replacement costs
 - and general maintenance. \$75

 - ▶ Municipal System Operation
 - Includes operations, maintenance, replacement
 - costs and administration. \$75

 - ▶ Direct Costs to Owners
 - includes power, pump servicing, replacement costs and pump outs every 10 years. \$150

 - ▶ Total Estimated **Annual Operating Cost**
 - ▶ per Developed Lot per Year:
\$300
- or about \$25 per month

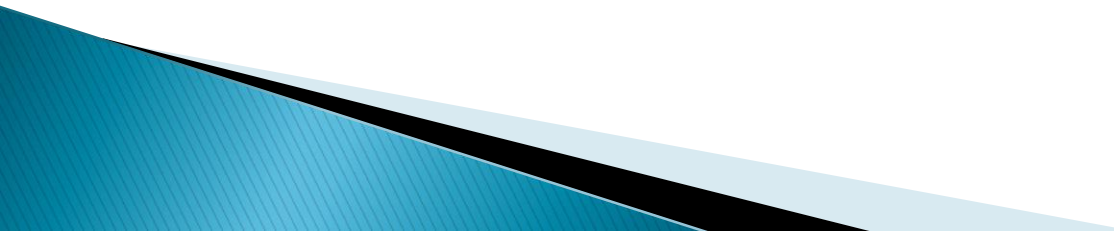
Contingency Planning – Low Flow Periods

- The engineering study modelled the flows for both high flow periods and low flow periods.
- They considered the volumes and related pipe sizing.
- Lower volumes may mean lower flow velocity.
- The use of an effluent system significantly reduces the potential for sedimentation in the lines.
- Flushing points have been provided for in the design.
- Lines will be installed below the frost line to avoid freezing.

Next Steps

- ▶ Finalize design and tender process for local system.
- ▶ Form Municipal Utility – set rate structure, bylaws and policies – transparent process governed by MGA
- ▶ Form agreement with the County for pipeline sharing.
- ▶ Construct local system.

When?

- ▶ Design Engineering will be completed late this Fall.
 - ▶ Tendering and Award of Contract will be in the Winter of 2016–17
 - ▶ Construction will begin in the Spring of 2017
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Questions?

