# EVALUATION OF SANITARY SERVICING ALTERNATIVES

## TABLE 1

<table>
<thead>
<tr>
<th>Evaluation Criteria</th>
<th>Gravity Sewer Alternatives</th>
<th>Pumping Station and Forceemain Alternatives</th>
</tr>
</thead>
</table>
| **Serviceable Area**                     | - Limited theoretical flow capacity in the existing Middle Strasburg trunk sanitary sewer (575mm diameter)  
- Requires up sizing of existing sewer to accommodate all tributary areas  
- Impacts existing Huron Road Right-of-Way (roadside closures)  
- Adequate theoretical capacity provided  
- Addresses servicing needs with the study area boundary, however, does not provide for future growth, unless additional pumping facilities are provided in the upstream drainage area | - Adequate theoretical capacity provided  
- Services land well beyond the study area (areas that would normally require pumping stations would be serviced by this gravity sewer). Provides options for future growth.  
- Adequate theoretical capacity provided  
- Would service lands within the study boundary, however, would be an inefficient use of infrastructure, as future pumping stations would drain to this facility. |
| **Social Environment**                   | - Required sewer upgrades on the existing Middle Strasburg Trunk Sanitary Sewer would impact environmentally sensitive lands  
- Significant disruption to existing municipal storm water management facility  
- Potential municipal service interruptions due to sewer upgrades  
- Impacts existing Huron Road Right-of-Way (roadside closures)  
- Limited right-of-way width for conventional deep trunk sewer  
- Negligible social impacts (sewer would be located within future public rights-of-way) | - Construction disturbance to existing residential community  
- Potential for groundwater contamination  
- Potential noise/odour concerns  
- Ineffective use of existing infrastructure |
| **Natural Environment**                  | - Potential construction impacts (sediment/dewatering) due to proximity to Middle Branch of Strasburg Creek, mitigation required during construction  
- Sediment disturbance during excavation/dewatering of PSW and existing SWMF; mitigation and restoration required  
- No environmental impact (sewer location is planned to follow future road alignments)  
- Minor encroachment in floodplain parallel to north side of South Branch of Strasburg Creek; mitigation and site restoration required | - Negligible environmental impacts (pumping station and forceemain would be located away from any identified features) |
| **Financial Requirements**               | - Partial open trench excavation would be required, due to concrete encasement of existing sewers through the existing municipal SWM facility  
- Significant tunneling/trenchless methods would be necessary to limit environmental impact  
- Estimated preliminary construction cost $2,400,000  
- Serviceable area (gravity sewer) limited  
- Pipe material thicker and heavier due to depth (>12.0m)  
- Additional ‘local’ collector sewers required  
- Estimated preliminary construction cost $1,800,000  
- Serviceable area accommodates proposed development areas, however, cost to construct may exceed available DC funds for construction | - Standard construction practices should be applicable (sewer depths ranging from 6.0-10.0m)  
- Estimated preliminary construction cost $1,500,000  
- Requires land dedication/access to municipal ROW  
- Duplication of infrastructure costs (ineffective use of existing infrastructure)  
- Requires additional forceemain and local sewer to convey drainage  
- Significantly more expensive than gravity sewer alternatives (operating/maintenance cost) |
| **Preliminary Conclusion**               | - Represents a possible solution, however, requires significant capital to construct, with significant risk to the environment. Least preferred option based on preliminary analysis  
- Represents a possible solution, however, requires significant capital to construct, due to depth of sewer required in proposed roadways | - Represents a viable and supportable solution, and poses the least environmental impact.  
- Not viable. Natural topographic relief throughout the subject area is conducive to a ‘gravity drainage’ solution, and as such, this option would lead to unacceptable long-term operational costs to the municipality. |

*Kitchener Development & Technical Services*