

Evaluation Criteria	Alternative 1 Original Class E.A. Design	Alternative 2 Proposed New Design
<b>Technical</b>		
Constructability	Constructability challenges are expected related to the proximity to water bodies at both facilities. Both Well 2 and 5 facilities will require an expansion to house the new equipment.	Challenges related to Alternative 2 are comparable to Alternative 1 for Well 5 facility. Well 2 facility construction is simplified but the addition of the watermain connecting the two facilities introduces challenges related to excavation on an active road. Conflicts with existing utilities and traffic control are among the additional challenges and risks.
Redundancy of Supply/Service	Lower redundancy expected with this alternative. The iron and manganese filters will be designed with full redundancy but since they will only service Well 5 facility in this option, the redundancy at Well 2 will not be improved. Majority of Nobleton's raw water supply will be serviced through existing sodium silicate dosing measures.	This alternative provides a higher degree of redundancy. With the elimination of chemical dosage at Well 2, chemical deliveries will be strictly limited to Well 5 facility. Overall quality of the water supply will also be significantly improved. Iron and manganese filters provide an overall superior treatment when compared to sodium silicate dosing.
Resilience to Climate Change	This alternative has minimal impacts to climate change	This alternative has minimal impacts to climate change.
O&M Requirements	O&M resources required at all well sites increase with increasing production and on-site treatment capacity	O&M resource requirement at Well 5 facility will increase drastically while the Well 2 site will have decreased O&M requirements with the removal of on-site treatment. With the centralized treatment, all O&M efforts can be focused at a single treatment plant with centralized chemical deliveries as opposed to spreading Region resources.
Adaptability to Existing Infrastructure	There will be a building expansion at both sites in this alternative.	There will only be a single building expansion but there will be a new raw watermain connecting the two facilities, approximately 700m in length.
Maximizing Use of Existing Infrastructure	Existing infrastructure is not able to house the upgrades. New infrastructure is required at both sites.	This alternative includes the removal of large pieces of equipment from the Well 2 site. As a result, the space that will be emptied can be used to house equipment in the future, maximizing the use of existing infrastructure.
Overall Technical Rating	<ul style="list-style-type: none"> <li>• Better Constructability;</li> <li>• Lower Redundancy;</li> <li>• More O&amp;M Resources Required.</li> </ul>	<ul style="list-style-type: none"> <li>• Worse Constructability;</li> <li>• Better Redundancy of Water Supply/Service;</li> <li>• Concentrated O&amp;M Resources Required;</li> <li>• Maximizes Use of Existing Infrastructure.</li> </ul>
<b>Environmental</b>		
Aquatic Vegetation and Life	Moderate impact to aquatic vegetation and life due to excavation activities on site.	Moderate impact to aquatic vegetation and life due to excavation activities on Well 5 facility. Well 2 excavation is significantly decreased and the impact will be lower for Alternative 2 at this facility.
Terrestrial Vegetation and Wildlife	Moderate impact to terrestrial vegetation and life. Excavation for building expansion and chlorine contact tank replacement.	Moderate impact to terrestrial vegetation. Minimal tree removal is expected for the construction of the watermain. Bulk of vegetation removal will be for the Well 5 facility building expansion. However, vegetation will be replaced, and removal at Well 2 will be minimized.
Groundwater Resources - Construction	Active construction dewatering is expected during construction. Effects to be mitigated through recommendations from hydrogeological study.	Impact is slightly greater than Alternative 1 related to increased construction dewatering due to deeper excavation. Following the recommendations from hydrogeological study, mitigation measures will be put in place to minimize impact to nearby groundwater features during construction. Measures include dewatering rate and water quality monitoring, discharge to be treated through sedimentation tank and filter bags for suspended solids treatment.

Groundwater Resources - Increased Well Water Taking	Alternative 1 proposed an increase to the water taking of Wells 2 and 6. Capacity increase was proposed to meet future demand scenarios. Impact identified as moderate with no significant risks to groundwater resources, or private wells.	<p>Compared to Alternative 1, a greater amount of water taking (7 L/s each) is required from Wells 2 and 6 as part of Alternative 2. Potential impact to private wells within the predicted zone of influence to 2041 was identified through York Region's recent Hydrogeological Assessment (Impact Assessment).</p> <p>Further investigation, field verification and monitoring are required to validate the results of the desktop impact assessment. Field verification of private wells, along with a phased enhanced groundwater monitoring program comprising new deep and shallow monitoring wells throughout the predicted zone of influence to 2041, are proposed to understand the long term response of the increased municipal water taking in the local aquifer systems. An adaptive mitigation strategy is proposed to proactively minimize any potential impacts to private well users. The following long-term programs are proposed to support and inform the mitigation strategy:</p> <p>i) Private well field verification ii) Enhanced groundwater monitoring program iii) Groundwater-surface water interaction monitoring program.</p>
Surface Water Resources - Construction	Low impact is expected on surface water resources.	Low impact is expected on surface water resources.
Surface Water Resources - Long Term	No significant risk identified for surface water resources in the long term due to increased water taking from the supply aquifer.	Potential increased influence due to increased water taking from the supply aquifer to 2041. Long term monitoring of the surface water-groundwater interaction and of shallow groundwater levels is proposed to identify potential adverse effects to nearby natural surface water features due to long-term municipal well operation and develop an appropriate mitigation plan.
GHG Emissions	Low GHG emissions.	Increase of GHG emissions compared to Alternative 1 due to increased construction duration. Contractor to follow strict environmental guidelines.
Overall Environmental Rating	Overall low to moderate environmental impact is expected for this alternative. Mitigation measures will be taken during construction to minimize the impact on the environment surrounding the two facilities.	<p>Overall, a moderate to high environmental impact is expected for this alternative. Mitigation measures will be taken during construction to minimize the impact on the environment surrounding the two facilities. Alternative 2 accounts for future expansion by providing necessary underground and aboveground infrastructure. This approach minimizes environmental impact of future projects.</p> <p>Potential long term impact of Alternative 2 on the groundwater and surface water resources is greater compared to Alternative 1. A long term monitoring program is proposed to be put in place. Adaptive mitigation requirements are to be updated periodically based on the monitoring program findings.</p>
<b>Socioeconomic</b>		
Short-Term Community Impacts	Short term community impact will be similar in both alternatives. Alternative 1 includes a smaller building expansion at the Well 5 facility but also an expansion at the Well 2 Facility.	This alternative has a greater negative short term community impact around the Well 5 facility due to the size of the expansion but a smaller impact on the community around Well 2 facility. The community will be impacted during raw watermain installation. However, timing of the construction activities will be optimized, and a traffic control plan will be put in place to mitigate impact.
Long-Term Community Impacts	No long-term community impacts are expected with this alternative.	Greater positive long term community impact is expected with Alternative 2. The water quality of the overall system will improve drastically. Ongoing iron and manganese concerns filed by the general public will be addressed.

Archeological Sites	All construction activities take place on previously disturbed properties. Archeological potential not expected to be significant. The archeological assessments did not identify any archeological resources at either facility.	All construction activities take place on previously disturbed properties. Archeological potential not expected to be significant. The area affected by construction around Well 2 and 5 facilities have not changed, and are covered through the archeological assessments completed through the Original Class E.A. and the Stage II Archeological Assessment appended to this addendum. Additionally, the lands proposed for the construction of the new raw watermain connecting Well 2 and 5 facilities had previously been subjected to deep and extensive disturbances from residential development. As such, Criteria for Evaluating Archaeological Potential checklist has not identified any areas of archeological potential. No further archeological concerns exist for the project area.
Natural Heritage Features	Fish habitat was identified around the Well 5 facility in the Natural Heritage Assessment completed in August, 2023. The clearance requirements will be followed during design to protect the natural habitat.	Fish habitat was identified around the Well 5 facility in the Natural Heritage Assessment completed in August, 2023. The clearance requirements will be followed during design to protect the natural habitat. The Ministry of Environment, Conservation and Parks have been contacted, and it was confirmed that the projected works do not violate sections 9 nor 10 of the Endangered Species Act.
Built Heritage Resources and Cultural Heritage Landscapes	Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment dated October 2021 identified four (4) Built Heritage Resources (BHRs) and nine (9) Cultural Heritage Landscapes (CHLs). No direct impacts were identified, multiple measures such as temporary fencing, and buffer zones were recommended to avoid negative impacts.	Heritage Impact Assessment Addendum dated August 2025 evaluated the area proposed for the new raw watermain, and identified six (6) new BHRs additional to the previously identified resources. The potential for adverse impacts related to construction activities during excavation has been identified for seven (7) BHRs. Vibration monitoring is recommended during construction activities such as excavation to ensure adjacent potential BHRs are not adversely impacted.
Overall Socioeconomic Rating	<ul style="list-style-type: none"> <li>Minimal negative short term community impact due to construction;</li> <li>No long-term community impact.</li> </ul>	<ul style="list-style-type: none"> <li>Moderate negative short term community impact due to the watermain construction;</li> <li>Positive long-term community impact with increasing service water quality.</li> </ul>
<b>Financial</b>		
Land Acquisition	No land acquisition is expected.	No land acquisition is expected.
Capital Cost	Relatively lower capital cost due to smaller expansion at Well 5 facility. The cost of construction at the Well 2 site will be higher due to the building expansion and replacement of the chlorine contact tank.	Higher capital cost associated with this alternative due to bigger expansion at the Well 5 Site and watermain connecting Well 5 and 2 sites.
20 Year Lifecycle Cost	The lifecycle cost is expected to be higher with this alternative. O&M cost over the years will be higher for Well 2. With the Iron & Manganese treatment maintained at Well 2 site, there will be continuous use of chemicals.	Relatively lower lifecycle cost. The addition of a centralized treatment system will account for future treatment requirements for the entire system. Iron & Manganese filters are more reliable and will reduce the O&M cost over their lifetime. Alternative 2 will also eliminate the need of continuous sodium silicate consumption.
Overall Financial Rating	Overall financial rating is lower than that of Alternative 2. This alternative has a lower capital cost and a higher lifecycle cost.	With a higher capital cost and lower lifecycle cost, Alternative 2 has a higher overall financial rating to Alternative 1.
<b>Jurisdictional/Regulatory</b>		
Ability to Accommodate Potential Future Regulatory Changes	This alternative does not allow enough provision for either facility to accommodate potential future regulatory changes. Any new equipment addition at either facility will require a new expansion.	This alternative provides more flexibility for both well sites. With the removal and relocation of equipment, both facilities will have more free space that can be used in the future for new equipment required as part of any potential future regulatory changes.
Permits and Approvals	Some permit and approvals are anticipated for Alternative 1.	On top of the permits for Alternative 1, additional permits are expected for the watermain included for Alternative 2.
Overall Jurisdictional/Regulatory Rating	<ul style="list-style-type: none"> <li>Provides less flexibility for future regulatory requirements;</li> <li>Potentially less permits and approvals</li> </ul>	<ul style="list-style-type: none"> <li>More flexibility to accommodate potential future regulatory changes and new equipment;</li> <li>More potential permit requirements with the new watermain.</li> </ul>