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## REGIONAL MUNICIPALITY OF HALTON – PROSPECT PARK WATER FACILITIES TREATMENT STRATEGY REVIEW

Halton Region (the Region) is actively expanding and upgrading the Prospect Park Water Facilities (PPWF). The objective of the project is to expand the treatment capacity at this water supply to support future growth, while improving operability. The PPWF has a long history of process and operational issues. Highly variable raw water ammonia concentration, where ammonia consumes 8-10 times its weight in chlorine makes it difficult to establish a consistent free chlorine residual. This is critical to the success of the subsequent iron and manganese filtration process.

The water supply has been characterized as a ground water under the influence of surface water, with effective filtration (GUDIWEF). This is equivalent to a subsurface water requiring Category 2 treatment as defined in the proposed changes to the Ministry of the Environment and Climate Change (MOECC) guidance document regarding this issue. These source waters require disinfection commensurate with 2-log Cryptosporidium, 3-log Giardia, and 4-log virus inactivation. As such, the primary disinfection process at the Prospect Park Water Facilities is a multi-step process including UV irradiation followed by free chlorine. Free chlorine is also used for secondary disinfection.

C3 Water is leading an investigation for problem definition, identification and evaluation of alternative solutions, and recommendation of a preferred solution. Specific tasks include:

- Collection and review of background information and all relevant documentation pertaining to PPWF,
- Define the operational and process issues experienced to date, and identify the most likely cause(s) of these issues,
- Establish evaluation criteria that will be used to assess alternative solutions and lead Region staff through a pair-wise evaluation process to rank the relative importance of the criteria.
- Identify alternative solutions to the process and operational issues experienced to date.
- Conduct a conceptual review of the short-listed alternative solutions.
- Lead the project team through an evaluation of the alternatives using the evaluation criteria developed.
- Conduct treatability and/or pilot testing of alternative solutions.
- Provide the Region with a preferred PPWF treatment strategy including an opinion of probable life-cycle cost.

