

# Water Supply System Expansion Class Environmental Assessment

Addendum to the Phase 1 & 2 Report

Prepared For:  
Town of Wasaga Beach

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# **WATER SUPPLY SYSTEM EXPANSION CLASS ENVIRONMENTAL ASSESSMENT ADDENDUM TO THE PHASE 1 & 2 REPORT**

PROJECT NO. 122090

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Town of Wasaga Beach

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## 1 Background

The Town of Wasaga Beach undertook a Municipal Class Environmental Assessment (Class EA) planning process in 2012/2013 to determine water supply requirements to meet projected growth in the Town. The Ainley Group was retained to document the Class EA planning process in a Phase 1 & 2 Report which was completed December 2013. Future water demands were estimated based on the current maximum day demand (MDD) plus the estimated MDD attributed to future connected units. Based on these estimates, it was projected that the MDD would exceed the capacity of the existing water supply system by the year 2026. The Phase 1 & 2 Report considered different options to address the projected future water supply deficit. After evaluating the various options, it was recommended that additional water supply be provided by commissioning an existing drilled well (Phase 1) and drilling two new wells (Phases 2 and 3) at the existing municipal well sites. Specifically, the recommended solution included the following components:

- Phase 1 - Commission the existing drilled well (Well No. 4) at the existing Jenetta Street well site (required by year 2026)
- Phase 2 - Drill one new well (Well No. 5), and possibly an additional standby well, at the existing Jenetta Street well site (subject to a Memorandum of Agreement from the Ministry of Infrastructure – property owner) including the expansion of the pump house and associated piping (required by year 2033)
- Phase 3 - Drill a new well (Well No. 5) at the existing Veterans Way (formerly Powerline Road) well site if required (subject to a Memorandum of Agreement from the Ministry of Infrastructure – property owner) including expansion of the pump house and associated piping (required by year 2039)
- Research and implement water conservation methods on an ongoing basis to ensure adequate water supply capacity.

## 2 Extension of Class EA Approval

The original Class EA for the Wasaga Beach water supply system expansion was carried out as a Schedule B planning process under the framework of the Municipal Engineers Association's (MEA's) Municipal Class Environmental Assessment (MCEA) document (October 2000, as amended in 2007 and 2011). Subsequent amendments to the document were issued in 2015 and 2023. Ontario municipalities are subject to the requirements of the Environmental Assessment Act (EAA) for public works projects. The procedure outlined in the MCEA document is approved under the EAA.

According to Section 11.5 of the EAA, approval for an undertaking expires if the undertaking has not been substantially commenced by the 10th anniversary of the day approval to proceed with the undertaking was given under the EAA, or by the end of the extended period where an extension has been granted by the Minister. Section 11.5 further states that an extension may be granted at any time, including after the 10th anniversary of the approval being given has passed.

The MEA's 2023 MCEA Document further clarifies the procedure for extending approval given under the EAA. Section A.4.1.1 of the Document, under the heading "Revisions to Schedule B Projects" outlines the procedure as follows:

- Similarly, if the period of time from the later of (i) the filing of the Notice of Completion in the public record, or if applicable (ii) the decision on a request for an order under section 16 to the commencement of construction for the project exceeds ten (10) years, the proponent shall review the planning and design process and environmental setting to ensure that the project and the mitigating measures are still valid given the current planning context.

In either event, the reviews shall be documented in the Project File Report and the proponent shall issue a Notice of Addendum to identified Indigenous Communities, members of the public and review agencies. A minimum comment period of 30 calendar days shall be provided for review and response by Indigenous Communities, the public and stakeholders. If the addendum details a change to the project/undertaking, then the Notice of Addendum shall include information on the ability to request a section 16 order.

The original Class EA did not receive any Part II (now section 16) Order requests. Following incorporation of comments from the review period, the Phase 1 & 2 Report was formally filed with the EAA Branch on January 13, 2014; therefore, the Class EA approval will lapse if construction has not commenced by January 13, 2024. An extension of approval for the proposed works will be required before implementing the first phase of the recommended solution (commission existing Well No. 4 at the Jenetta Street well site). A review of the planning and design process and current environmental setting is therefore being undertaken to support an extension of the Class EA approval.

### 3 Updated Water Demands

The Ainley Group has completed annual Water and Sewage Capacity Allocation updates for the Town of Wasaga Beach since 2004, with the exception of years 2015 through 2018. The latest report (currently in draft form) is for the year ending December 31, 2022. The original Class EA relied on the 2011 year-end report for historical water demands and projections of future water connections and demands. The current analysis employs the same methodology utilizing the 2022 year-end report. The original Phase 1 & 2 Report included a summary of historical water demands and number of equivalent connected units for years 2004 through 2012 in Table 1. This table has been updated to include data for the years 2013 through 2022 (see Table 1 (Rev. 1)). A trend of decreasing MDD per equivalent unit over time is evident.

The original Phase 1 & 2 report also included Table 2 with projected future MDD and number of equivalent connected units up to year 2048 (full buildout). The number of new connections per year was estimated to be 387 based on the historical rate for the years 2009 to 2011. The ultimate number of equivalent connected units at full buildout was assumed to be 26,266 as per the 2011 year-end Water and Sewage Capacity Allocation Update. This figure was derived from information provided by the Town of Wasaga Beach Planning Department. Table 2 included low-end and high-end estimates of MDD for each year. For the purpose of forecasting future demands it was assumed that MDD attributable to existing connected units was equal to the 2011 MDD (19,039 m<sup>3</sup>/day). For future connected units, it was assumed that the MDD per equivalent unit would range from a low of 1.566 m<sup>3</sup> (2011 MDD per equivalent unit) to a high of 2.036 m<sup>3</sup> (2011 MDD per equivalent unit plus 30%). The 30% buffer accounted for a potential increase in persons per unit over time.

**Table 1 (Rev. 1): Town of Wasaga Beach – Historical Water Demands**

Year	Equivalent Connected Units	ADD (m <sup>3</sup> /d)	ADD per Equivalent Unit (m <sup>3</sup> /d)	MDD (m <sup>3</sup> /d)	Maximum Day Factor (MDF)	MDD per Equivalent Unit (m <sup>3</sup> /d)
2004	8,752	6,799	0.78	18,870	2.78	2.16
2005	9,703	8,571	0.88	24,465	2.85	2.52
2006	10,361	7,649	0.74	21,379	2.80	2.06
2007	11,095	8,569	0.77	23,989	2.80	2.16
2008	11,212	7,425	0.66	20,114	2.71	1.79
2009	11,386	6,837	0.60	15,354	2.25	1.35
2010	11,767	6,380	0.54	16,336	2.56	1.39
2011	12,159	6,353	0.52	19,039	3.00	1.57
2012	12,881	6,876	0.53	18,528	2.69	1.44
2013	13,143	6,250	0.48	15,579	2.49	1.19
2014	12,950	6,189	0.48	14,256	2.30	1.10
2015	13,259*	6,905	0.52	16,344	2.37	1.23
2016	13,567*	7,154	0.53	16,665	2.33	1.23
2017	13,875*	6,171	0.44	13,361	2.17	0.96
2018	14,183*	7,085	0.50	16,721	2.36	1.18
2019	14,494	6,932	0.48	17,097	2.47	1.18
2020	15,368	7,756	0.50	18,527	2.39	1.21
2021	15,754	8,022	0.51	17,838	2.22	1.13
2022	16,449	8,032	0.49	18,888	2.35	1.15

**\* The equivalent connected units for years 2015 through 2018 are not available. As such, the numbers have been estimated by linearly interpolating between the known values for years 2014 and 2019.**

The same methodology has been applied to update Table 2 to reflect current conditions (see Table 2 (Rev. 1)). The revised number of new equivalent connected units per year is estimated to be 437 based on the historical rate for the years 2015 to 2022. The revised ultimate number of equivalent connected units at full buildout is 34,247 as per the 2022 year-end Water and Sewage Capacity Allocation Update, and will occur in year 2063 based on 437 new equivalent connections per year. For the purpose of forecasting future demands it is assumed that MDD attributable to existing connected units is equal to the 2022 MDD (18,888 m<sup>3</sup>/day) and for future connected units, it is assumed that the MDD per equivalent unit will range from a low of 1.148 m<sup>3</sup> (2022 MDD per equivalent unit) to a high of 1.493 m<sup>3</sup> (2022 MDD per equivalent unit plus 30%).

**Table 2 (Rev. 1): Town of Wasaga Beach – Future Maximum Day Demand Forecast**

Year	Number of Connected Units	Low End MDD (m <sup>3</sup> /day)	High End MDD (m <sup>3</sup> /day)
2022	16,449	18,888	18,888
2023	16,886	19,390	19,540
2024	17,323	19,891	20,193
2025	17,760	20,393	20,845
2026	18,197	20,895	21,498
2027	18,634	21,396	22,150
2028	19,071	21,898	22,803
2029	19,508	22,400	23,455
2030	19,945	22,901	24,108
2031	20,382	23,403	24,760
2032	20,819	23,905	25,412
2033	21,256	24,406	26,065
2034	21,693	24,908	26,717
2035	22,130	25,410	27,370
2036	22,567	25,911	28,022
2037	23,004	26,413	28,675
2038	23,441	26,915	29,327
2039	23,878	27,416	29,979
2040	24,315	27,918	30,632
2041	24,752	28,420	31,284
2042	25,189	28,922	31,937
2043	25,626	29,423	32,589
2044	26,063	29,925	33,242
2045	26,500	30,427	33,894
2046	26,937	30,928	34,547
2047	27,374	31,430	35,199
2048	27,811	31,932	35,851
2049	28,248	32,433	36,504
2050	28,685	32,935	37,156
2051	29,122	33,437	37,809
2052	29,559	33,938	38,461
2053	29,996	34,440	39,114
2054	30,433	34,942	39,766
2055	30,870	35,443	40,419

Year	Number of Connected Units	Low End MDD (m <sup>3</sup> /day)	High End MDD (m <sup>3</sup> /day)
2056	31,307	35,945	41,071
2057	31,744	36,447	41,723
2058	32,181	36,948	42,376
2059	32,618	37,450	43,028
2060	33,055	37,952	43,681
2061	33,492	38,453	44,333
2062	33,929	38,955	44,986
2063	34,247	39,320	45,460

#### 4 Updated Schedule for Recommended Works

The original Phase 1 & Phase 2 Report included Table 5 which summarized projected future MDD to full buildout, together with projected scheduling to implement the recommended works. In order to provide a conservative estimate of the timing for the recommended works, the high-end estimates of future MDD were used in this table. Available supply was also included in the table, and was increased to correspond to the additional supply provided by the recommended works as they were projected to come online. As noted in Section 1 above, Phase 1 works (commission existing Jenetta Street Well No. 4) was projected to be required by year 2026. Phase 2 works (drill new Well No. 5 at Jenetta Street well site) and Phase 3 works (drill new Well No. 5 at Veterans Way (formerly Powerline Road) well site) were projected to be required by years 2033 and 2039, respectively. Table 5 has been updated to reflect the revised projections for future MDD (see Table 5 (Rev. 1)).

As shown in Table 5 (Rev.1), the projected schedule for implementation of the recommended works has changed significantly since the original Class EA was completed. This is due to the decrease in MDD per equivalent unit over time, as per Table 1 (Rev. 1). The updated schedule is year 2041 for Phase 1, year 2049 for Phase 2 and year 2057 for Phase 3. The recommended works (Phases 1 to 3) as per the original Class EA are still projected to meet the updated ultimate MDD at full buildout (47,123 m<sup>3</sup>/day) even though the projected number of connected equivalent units at full buildout has increased from 26,266 (original Class EA) to 34,247 (current estimate). The number of connected equivalent units at full buildout is taken from the respective year-end Water and Sewage Capacity Allocation Updates and is based on information provided by the Town of Wasaga Beach Planning Department.

#### 5 Review of Planning and Design Process and Current Environmental Setting

The Town of Wasaga Beach and its water system operator Ontario Clean Water Agency (OCWA) were consulted to determine if there have been any changes to the operational or environmental settings at either of the Town’s existing well sites (Jenetta Street well site and Veterans Way well site) that would impact the recommended solution outlined in the original Class EA. It was confirmed that there have been no significant changes to the environmental setting at either site since the original Class EA was completed. As previously identified in the Phase 1 & 2 Report, the Jenetta Street well site is located within Beach Area One of Wasaga Beach Provincial Park. The main challenges associated with construction at this site would be



the impact on beach tourism and the nearby nesting grounds of the Piping Plover, an endangered species. Close coordination with the Ministry of Natural Resources during design and construction stages would be essential. The mitigating measures relating to work at this site are described in the Phase 1 & 2 Report and remain unchanged.

The Veterans Way (formerly Powerline Road) well site is located near an existing residential area and Wasaga Beach Provincial Park. The nearby provincial park lands are habitat of the Eastern Hog-nosed Snake, a threatened species. Mitigating measures relating to work at this site are also described in the Phase 1 & 2 Report and remain unchanged.

**Table 5 (Rev. 1): Implementation of Water Supply Wells to Meet Future Demands**

Year	MDD (m <sup>3</sup> /day)	Available Supply (m <sup>3</sup> /day)	Implement Option
2022	18,888	31,415	
2023	19,540	31,415	
2024	20,193	31,415	
2025	20,845	31,415	
2026	21,498	31,415	
2027	22,150	31,415	
2028	22,803	31,415	
2029	23,455	31,415	
2030	24,108	31,415	
2031	24,760	31,415	
2032	25,412	31,415	
2033	26,065	31,415	
2034	26,717	31,415	
2035	27,370	31,415	
2036	28,022	31,415	
2037	28,675	31,415	
2038	29,327	31,415	
2039	29,979	31,415	
2040	30,632	31,415	
2041	31,284	36,651	<b>Add Jenetta Well No. 4 (Option 6)</b>
2042	31,937	36,651	
2043	32,589	36,651	
2044	33,242	36,651	
2045	33,894	36,651	
2046	34,547	36,651	
2047	35,199	36,651	

Year	MDD (m <sup>3</sup> /day)	Available Supply (m <sup>3</sup> /day)	Implement Option
2048	35,851	36,651	
2049	36,504	41,887	<b>Add Jenetta Well No. 5 (Option 7A)</b>
2050	37,156	41,887	
2051	37,809	41,887	
2052	38,461	41,887	
2053	39,114	41,887	
2054	39,766	41,887	
2055	40,419	41,887	
2056	41,071	41,887	
2057	41,723	47,123	<b>Add Veterans Well No. 5 (Option 7B)</b>
2058	42,376	47,123	
2059	43,028	47,123	
2060	43,681	47,123	
2061	44,333	47,123	
2062	44,986	47,123	
2063	45,460	47,123	<b>Ultimate Build-Out</b>

## 6 Potential Limitations at Existing Well Sites

OCWA was asked to comment on any potential limitations regarding utilization of the full current capacities at the Town’s existing well sites. They responded that the only possible limitation is a concern with high pressure at the Jenetta Street site when multiple well pumps are running. This is not considered to be a supply issue, but rather an issue with the configuration and/or sizing of the existing piping at the well pumphouse, and would be addressed as part of a future expansion at the site.

OCWA also confirmed that Well No. 1 at the Veterans Way (formerly Powerline Road) well site was decommissioned in June 2021. This well was only used as a standby well at the time of the original Class EA and its decommissioning does not impact the rated capacity of the well supply at the site.

Results of water distribution system modelling by the Ainley Group indicate that the filling and emptying characteristics of the system storage reservoirs should to be taken into consideration before finalizing the order in which additional water supply wells are developed. The strategy to achieve the total required supply capacity remains the same, however the modelling indicates that the order in which the new wells are drilled at the two sites may need to be revised based on the hydraulics of the water distribution system. This would not affect Phase 1 commissioning of the existing drilled well at the Jenetta Street well site. It should be noted that the Water Well Development Study carried out by Ian D. Wilson and Associates Limited as part of the original Class EA found that the Veterans Way (formerly Powerline Road) well field has a lower quality yield than the Jenetta Street Well Supply. It was considered that the Jenetta Street Well Field

would produce a more consistent supply and as such constructing an additional well at the Jenetta Street site would be a primary choice. This finding should also be considered when finalizing the selection of location for developing a new well supply.

## **7 Conclusions and Recommendations**

A Class EA for the expansion of the Town of Wasaga Beach Water Supply System was completed in 2013 and recommended a solution consisting of commissioning an existing well (Phase 1) and drilling two new wells at the Town's existing well sites (Phases 2 and 3). Due to no construction having commenced within 10 years of the original Class EA, approval to proceed with the works will expire on January 13, 2024. A review of the planning and design process and the current environmental setting has been carried out to ensure that the project and the mitigation measures are still valid given the current planning context. The review found that, due to a significant decrease in the maximum day demand per unit over time, the recommended works will not be needed until further in the future than was previously anticipated. The Phase 1 work is not expected to be required until 2041 whereas the original Class EA identified this work to be done by 2026.

Although the per unit water demands have decreased over time, the projected ultimate number of units that will be connected to the system has increased significantly. As a result, it is anticipated that all of the works recommended in the original Class EA will still be required to provide sufficient water supply to the Town at ultimate buildout.

The current environmental setting is essentially unchanged from the setting at the time of the original Class EA.

The original Class EA recommended that a new well be drilled at the Jenetta Street well site (Phase 2) prior to a new well being drilled at the Veterans Way (formerly Powerline Road) well site (Phase 3). This order of new well development was selected because a Water Well Development Study carried out as part of the Class EA concluded that the Jenetta Street well site would produce a more consistent supply than the Veterans Way well site. However, results of water distribution system modelling by the Ainley Group suggest that the order of new well development may need to be revised to suit system hydraulics. This should be reviewed in the future before a final decision is made on the location to drill a new well (Phase 2).

This addendum is to be placed on the public record with the Phase 1 & 2 Report. A Notice of Filing of this Addendum is also to be placed on the public record and notification provided to the Indigenous Communities, public and the review agencies. A period of 30 calendar days shall be provided for review and response. The Notice will include the right to request a section 16 order during the 30-day addendum review period. If no request is received then the Town is free to proceed with implementation and construction of the works recommended in the Class EA.