

Appendix A Population, Flow Data and Storage Calculations

Table 1 - Existing Storage Facilities & Capacities

Description	Storage Volume (ML)
Rosehill WTP Reservoir	11.7
Central Avenue ET	1.5
Stevensville Reservoir	1.9
Total	15.1

Table 2 - Population, Employment, & Water Demand Forecasts Based on MSP, with updates from Niagara Region

Year	Total Population	Forecast Employment	Total	Average Day Demand (MLD)	Maximum Day Demand (MLD)
*2014	30419	10839	41258	12.6	17.6
2021	31881	11729	43610	13.1	20.2
2026	34109	12231	46340	13.9	21.4
2031	37096	12944	50040	15.0	23.2
2036	40611	13699	54310	16.3	25.1
2041	43134	14698	57832	17.4	26.8
2041			59567	17.9	27.6

* MSP has established a baseline condition of year 2014.

Table 3 – Total Storage Required

Max. Day Factor (MDD ÷ ADD)	Suggested Fire Flow (L/s, MECP Recommendation)	Duration (hr)	A	B	C	Total Storage Required (ML)
1.40	378	6	8.16	4.40	3.14	15.71
1.54	378	6	8.16	5.05	3.30	16.52

1.54	378	6	8.16	5.35	3.38	16.89
1.55	378	6	8.16	5.80	3.49	17.46
1.54	378	6	8.16	6.28	3.61	18.05
1.54	378	6	8.16	6.70	3.72	18.58
1.54	378	6	8.16	6.89	3.76	18.82

Table 4 - New ET Size if all Existing Storage is Kept Online

Total Storage Available (ML)	Surplus/ Deficit (ML)	Total Size of New ET (ML)
15.1	(0.61)	0.61
15.1	(1.42)	1.42
15.1	(1.79)	1.79
15.1	(2.36)	2.36
15.1	(2.95)	2.95
15.1	(3.48)	3.48
15.1	(3.72)	3.72

Table 5 - New ET Size if only Rosehill WTP Storage Kept Online

Total Storage Available (ML)	Surplus/ Deficit (ML)	Total Size of New ET (ML)
11.7	(4.01)	4.01
11.7	(4.82)	4.82
11.7	(5.19)	5.19
11.7	(5.76)	5.76
11.7	(6.35)	6.35
11.7	(6.88)	6.88
11.7	(7.12)	7.12