

OTTAWA AREA INTEGRATED REGIONAL RESOURCE PLAN - APPENDIX

Part of the Greater Ottawa Planning Region | April 28, 2015



Ottawa IRRP

Appendix A: Demand Forecast

Appendix A: Demand Forecasts

A.1 Gross Demand Forecasts

A.1.1 Hydro One Distribution Methodology for Reference Forecast

In developing the reference forecast, the historical relationship between Hydro One Distribution load and economic/demographic factors were taken into account using regression analysis.

Next, forecast values of economic/demographic factors were used in that relationship to arrive at the load forecast. It was then further tuned to additional local information as gathered from measured loading trends, municipal officials, etc. The forecast also took into account the load impact of CDM as well as embedded generation.

Also, in cases where it was known that a large customer was going to start (or cease) operating at a certain date in the future, the forecast was adjusted upward (downward) accordingly to reflect projected load impact of such event.

The reference forecast is weather normal in the sense that it reflects peak forecast at average peak-time weather conditions in the past.

The Hydro One Distribution load growth was allocated to each transformer/distribution station based on local information such as the community development plan, available vacant lands, etc.

A.1.2 Hydro Ottawa Limited Methodology for Reference Forecast

Hydro Ottawa owns and operates the distribution system of a portion of the City of Ottawa and the Village of Casselman, serving approximately 320,000 (April 2015) customers. Hydro Ottawa is supplied through the Hydro One transmission system at primary voltages of 115 kV and 230 kV. Hydro Ottawa then distributes to its customers at five different voltage levels (27.6 kV, 13.2 kV, 12.43 kV, 8.32 kV and 4.16 kV) through 84 owned and co-owned substations and an additional 6 station owned by Hydro One.

The gross demand forecast provided by Hydro Ottawa was based off of the coincident weather normalized summer peak from 2012, as provided by the former OPA.

Each station was forecast separately using trend analysis to extend past growth rates into the future – an average annual growth rate was calculated using the station's historic load level

from 2008 to 2012. This trending was used to predict the baseline load growth for the 20-year forecast period (2013-2032) and reflects typical addition of new customers and the load maturation of existing customers. These historic trend based forecasts were adjusted to account for anticipated load changes and additions that are not consistent with the historic regional load growth. These adjustments are based on City of Ottawa and developer plans, forecast load transfers and other local knowledge.

A.1.3 Gross Demand Forecast by Sub-System and Station

Nepean/Kanata Sub system		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Gross Demand (weather normal)	LTR																			
Bridlewood MTS	37	21	21	21	22	22	22	22	23	40	40	41	41	41	41	42	42	42	43	43
Marchwood MTS	34	32	33	33	33	34	34	34	35	35	36	36	36	37	37	37	38	38	38	39
Fallowfield DS	26	33	35	38	38	40	49	52	55	57	60	62	64	70	72	76	77	80	84	88
Manotick DS	17	6	7	7	7	7	7	7	7	7	7	7	7	8	8	8	8	8	8	8
Richmond DS	5	8	9	10	11	13	31	34	36	36	37	38	39	39	40	41	42	42	42	42
Manordale MTS	22	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	12
Limebank MTS	68	42	43	46	48	51	54	57	60	63	66	69	73	77	80	84	89	93	97	97
Marionville DS	15	13	13	13	14	14	14	14	14	14	15	15	15	15	15	16	16	16	16	16
Uplands MTS	30	24	24	25	26	26	27	27	28	28	29	29	30	31	31	32	32	33	33	34
South Gloucester DS	8	16	16	17	17	17	17	17	17	17	18	18	18	18	18	18	18	18	18	19
Greely DS	40	4	5	5	5	5	5	5	6	6	6	6	6	6	7	7	7	7	7	8
Russell DS	8	3	3	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4
Kanata MTS	55	45	45	46	46	46	47	47	48	48	49	49	50	50	51	51	52	52	53	53
South March TS - H.O.	109	41	42	42	42	42	42	43	43	27	27	28	28	28	28	28	28	28	29	28
South March TS - H1	109	65	71	65	70	75	80	85	90	94	99	79	81	82	82	83	84	85	85	86
Nepean TS	144	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140
Terry Fox MTS	90	24	38	49	76	81	65	65	65	65	65	66	66	66	66	66	66	66	66	66
National Aeronautical CTS	N/A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Subtotal	N/A	528	555	570	608	627	648	664	681	693	708	698	710	722	732	744	755	765	776	782

Downtown Ottawa		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Gross Demand (weather normal)	LTR																			
Carling TS	93	78	79	81	82	84	85	87	88	90	96	98	99	101	102	104	105	107	109	110
Lincoln Heights TS	71	43	43	44	44	44	44	44	45	45	51	51	51	51	52	52	52	52	53	53
Woodroffe TS	92	37	38	39	40	41	42	43	44	45	54	55	56	57	58	59	60	61	62	63
Hinchey TS	77	42	55	58	60	64	67	70	73	75	69	71	74	77	80	82	85	88	91	94
Slater TS	118	101	102	109	111	113	113	114	114	115	115	116	116	117	117	118	118	119	119	120
Lisgar TS	108	59	62	66	69	74	75	76	77	79	90	91	93	94	95	96	97	98	98	98
King Edward TS	71	68	69	67	69	75	76	77	79	80	81	83	84	84	85	85	85	86	86	87
Russell TS	69	59	59	62	64	73	73	74	74	75	76	76	77	78	78	79	80	80	81	82
Overbrook TS	130	79	83	89	92	98	101	103	109	111	113	114	116	117	119	120	122	123	125	127
Riverdale TS	105	96	99	96	100	109	111	114	116	119	121	123	125	126	128	130	132	133	135	137
Albion TS	88	69	70	70	71	72	73	74	75	76	77	77	78	79	80	81	82	83	84	85
Ellwood TS	59	26	27	27	27	27	28	28	28	28	29	29	29	30	30	30	31	31	31	31
Nation Research TS	25	17	17	17	18	18	18	18	18	18	18	19	19	19	19	19	19	19	19	20
Hawthorne TS - H.O.	89	44	67	76	78	82	85	89	93	96	97	97	98	99	100	100	101	101	101	101
Hawthorne TS - H1	89	56	37	38	39	40	41	41	42	43	44	45	45	46	49	48	49	50	51	51
Centrepont MTS	35	16	16	16	16	16	16	17	17	17	17	17	17	17	17	17	17	17	17	18
Merivale TS	18	14	14	14	14	15	16	16	16	17	17	18	19	21	21	22	22	22	22	22
Epworth	25	14	14	14	15	15	16	16	16	16	16	16	16	16	16	16	16	16	16	16
Subtotal	N/A	918	953	985	1011	1060	1080	1100	1123	1144	1180	1196	1212	1228	1246	1259	1273	1287	1301	1314

East Ottawa/Orleans		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Gross Demand (weather normal)	LTR																			
Bilberry Creek TS - H.O.	85	51	52	52	53	53	54	54	55	55	56	57	57	58	58	59	59	60	61	61
Bilberry Creek TS - H1	85	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Orleans TS	102	5	83	87	89	90	93	96	98	100	102	104	105	107	109	112	113	116	117	120
Cyrville MTS	59	23	23	29	34	35	37	38	40	42	43	44	46	46	47	47	47	48	48	49
Moulton MTS	34	30	30	31	31	32	32	32	33	33	34	34	34	35	35	36	36	36	37	37
Wilhaven DS	58	41	4	4	5	5	6	7	7	8	8	10	11	11	12	12	13	13	14	15
Navan DS	15	17	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Cumberland DS	15	5	5	5	6	6	6	6	6	6	6	6	6	7	7	7	7	7	7	7
Subtotal	N/A	201	204	215	224	227	234	240	244	250	254	261	266	269	273	278	282	286	290	296

Total Ottawa Demand		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Gross Demand (weather normal)	LTR																			
Total	N/A	1647	1712	1769	1842	1914	1962	2004	2049	2087	2142	2155	2187	2219	2251	2281	2310	2338	2367	2391

A.2 Conservation

The forecast conservation savings included in the demand forecasts for the Ottawa IRRP were derived from the provincial conservation forecast, which aligns with the conservation targets described in the 2013 LTEP: “Achieving Balance: Ontario’s Long-Term Energy Plan”. The LTEP set an electrical energy conservation target of 30 TWh in 2032, with about 10 TWh of the energy savings coming from C&S, and the remaining 20 TWh from EE programs. The 30 TWh energy savings target will also lead to associated peak demand savings. Time-of-Use rate impacts and Demand Response resources are focused on peak demand reduction rather than energy savings and, as such, are not reflected in the 30 TWh energy target and are considered separately in forecasting.

To assess the peak demand savings from the provincial conservation targets, two demand forecasts are developed. A gross demand forecast is produced that represents the anticipated electricity needs of the province based on growth projections, for each hour of the year. This forecast is based on a model that calculates future gross annual energy consumption by sector and end use. Hourly load shape profiles are applied to develop province-wide gross hourly demand forecasts. Natural conservation impacts are included in the provincial gross demand forecast, however the effects of the planned conservation are not included. A net hourly demand forecast is also produced, reflecting the electricity demand reduction impacts of C&S, EE programs, and TOU. The gross and net forecasts were then compared in each year to derive the peak demand savings. In other words, the difference between the gross and net peak demand forecasts is equal to the demand impacts of conservation at the provincial level.

The above methodology was used to derive the combined peak demand savings, which was further broken down to three categories as shown in Table-1. Peak demand savings associated with load shifting in response to TOU rates were estimated using an econometric model based on customers’ elasticity of substitution and the TOU price ratio. The remaining peak savings were allocated between C&S and EE programs based on their energy saving projections, with about 1/3 attributed to C&S and 2/3 to EE programs.

The resulting peak demand savings in each year are represented as a percentage of total provincial peak demand in Figure A-1, using 2012 as a base year.

Figure A-1: Approaches to Meeting Medium- and Long-Term Needs

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
C&S	0.1%	0.2%	0.3%	0.7%	0.8%	1.2%	1.7%	2.1%	2.5%	2.66%	2.70%	2.93%	3.1%	3.3%	3.8%	4.2%	4.5%	4.9%	5.2%	5.5%
TOU	0.2%	0.4%	0.5%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%
EE program	0.6%	1.1%	1.39%	1.54%	1.69%	1.83%	2.7%	3.6%	3.7%	4.1%	4.7%	5.5%	5.9%	6.3%	6.6%	7.0%	7.2%	7.4%	7.9%	8.3%
Total	1%	2%	2%	3%	3%	4%	5%	6%	7%	7%	8%	9%	10%	10%	11%	12%	12%	13%	14%	14%

These percentages were applied to the gross demand forecasts provided by the Ottawa Region LDCs at the transformer station level to determine the peak demand savings assumed in the planning forecast. This allocation methodology relies on the assumption that the peak demand savings from the provincial conservation will be realized uniformly across the province. Actions recommended in the Ottawa IRRP to monitor actual demand savings, and to assess conservation potential in the region, will assist in developing region-specific conservation assumptions going forward.

Existing DR resources are included in the base year and gross demand forecasts. Additional DR resources can be considered as potential options to meet regional needs.

A.2.1 Conservation Assumptions by Sub-Area and Station

The following tables show the expected peak demand impact of provincial energy targets at each transformer station, developed according to the methodology described in Appendix A.2 above, for the purposes of the high-growth forecast.

Conservation Assumptions by Sub-System and Station

Nepean/Kanata Sub system		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	
Conservation	LTR																				
Bridlewood MTS	37	0	0	1	1	1	1	1	2	3	3	4	4	4	5	5	5	6	6	7	
Marchwood MTS	34	1	1	1	1	1	2	2	3	3	3	3	4	4	4	5	5	5	6	6	
Fallowfield DS	26	1	1	1	1	2	3	3	4	4	5	6	7	8	8	10	10	11	12	13	
Manotick DS	17	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	
Richmond DS	5	0	0	0	0	1	2	2	3	3	3	4	4	4	5	5	5	6	6	6	
Manordale MTS	22	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	2	2	2	
Limebank MTS	68	1	1	1	2	2	3	4	4	5	6	7	7	8	9	11	12	13	14	15	
Marionville DS	15	0	0	0	0	1	1	1	1	1	1	1	2	2	2	2	2	2	2	3	
Uplands MTS	30	0	1	1	1	1	1	2	2	2	2	3	3	3	4	4	4	5	5	5	
South Gloucester DS	8	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	
Greely DS	40	0	0	1	1	1	1	1	1	1	2	2	2	2	2	3	3	3	3	3	
Russell DS	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	
Kanata MTS	55	1	1	1	1	2	2	3	3	4	4	5	5	5	6	6	7	7	8	8	
South March TS - H.O.	109	1	1	1	1	2	2	3	3	2	2	3	3	3	3	4	4	4	4	4	
South March TS - H1	109	1	2	2	2	3	4	6	6	7	8	8	8	9	10	10	11	12	12	13	
Nepean TS	144	2	3	4	5	5	7	9	10	11	12	13	14	15	16	18	18	19	20	21	
Terry Fox MTS	90	0	1	1	2	3	3	4	5	5	6	6	7	7	8	8	9	9	10	10	
National Aeronautical CTS	N/A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Subtotal	N/A	9	13	17	20	24	34	44	49	54	60	67	72	78	85	93	98	105	113	120	

Downtown Ottawa		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	
Conservation	LTR																				
Carling TS	93	1	2	2	3	3	5	6	6	7	8	9	10	11	12	13	14	15	16	17	
Lincoln Heights TS	71	1	1	1	1	2	2	3	3	4	4	5	5	6	6	7	7	7	8	8	
Woodroffe TS	92	1	1	1	1	2	2	3	3	4	5	5	6	6	7	7	8	8	9	10	
Hinchey TS	77	1	1	1	2	2	3	4	5	5	6	7	7	8	9	10	11	12	13	14	
Slater TS	118	2	2	3	3	4	5	7	8	8	9	10	11	12	12	14	14	15	16	17	
Lisgar TS	108	1	2	2	3	3	4	6	6	7	8	9	9	10	11	12	13	13	14	15	
King Edward TS	71	1	2	2	3	3	4	6	6	7	8	9	9	10	11	12	12	13	14	15	
Russell TS	69	1	1	2	2	3	4	5	5	6	6	7	8	8	9	10	10	11	12	13	
Overbrook TS	130	1	2	3	3	4	5	7	8	8	9	11	11	12	13	15	15	16	18	19	
Riverdale TS	105	2	2	3	3	4	6	8	9	10	11	12	13	14	16	17	18	19	21	22	
Albion TS	88	1	2	2	2	3	4	5	5	6	6	7	8	9	9	10	11	11	12	13	
Ellwood TS	59	0	1	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	5	5	
Nation Research TS	25	0	0	1	1	1	1	1	1	1	2	2	2	2	2	2	3	3	3	3	
Hawthorne TS - H.O.	89	1	2	2	3	3	4	6	7	7	8	9	10	11	12	13	13	14	15	16	
Hawthorne TS - H1	89	1	1	1	1	2	2	3	3	3	4	4	5	5	6	6	6	7	7	8	
Centrepont MTS	35	0	0	0	1	1	1	1	1	1	1	2	2	2	2	2	2	2	3	3	
Merivale TS	18	0	0	0	0	1	1	1	1	1	1	2	2	2	2	3	3	3	3	3	
Epworth	25	0	0	0	0	1	1	1	1	1	1	2	2	2	2	2	2	2	2	3	
Subtotal	N/A	16	23	29	33	41	57	73	81	89	100	115	123	133	145	158	166	177	189	201	

East Ottawa/Orleans		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Conservation	LTR																			
Bilberry Creek TS - H.O.	85	1	1	2	2	2	3	4	4	4	5	5	6	6	7	7	8	8	9	9
Bilberry Creek TS - H1	85	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Orleans TS	102	0	2	3	3	3	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Cyrville MTS	59	0	1	1	1	1	2	3	3	3	4	4	5	5	5	6	6	7	7	7
Moulton MTS	34	1	1	1	1	1	2	2	2	3	3	3	3	4	4	4	5	5	5	6
Wilhaven DS	58	1	0	0	0	0	0	0	1	1	1	1	1	1	1	2	2	2	2	2
Navan DS	15	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1
Cumberland DS	15	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1
Subtotal	N/A	4	5	6	7	9	12	16	18	20	22	25	27	29	32	35	37	39	42	45

Total		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Conservation	LTR																			
Total	N/A	29	41	52	60	74	104	134	147	163	182	206	221	240	261	287	302	321	344	366

A.2.2 Distributed Generation Assumptions by Sub-System and Station

Nepean/Kanata Sub system		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Distributed Generation	LTR																			
Bridlewood MTS	37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Marchwood MTS	34	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Fallowfield DS	26	3.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Manotick DS	17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Richmond DS	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Manordale MTS	22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Limebank MTS	68	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Marionville DS	15	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Uplands MTS	30	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
South Gloucester DS	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Greely DS	40	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Russell DS	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kanata MTS	55	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
South March TS - H.O.	109	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
South March TS - H1	109	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0
Nepean TS	144	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Terry Fox MTS	90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
National Aeronautical CTS	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal	N/A	5	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2

Downtown Ottawa		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	
Distributed Generation	LTR																				
Carling TS	93	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
Lincoln Heights TS	71	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
Woodroffe TS	92	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
Hinchey TS	77	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Slater TS	118	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lisgar TS	108	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	
King Edward TS	71	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.1	
Russell TS	69	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	
Overbrook TS	130	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Riverdale TS	105	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
Albion TS	88	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	
Ellwood TS	59	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Nation Research TS	25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Hawthorne TS - H.O.	89	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	
Hawthorne TS - H1	89	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
Centrepoint MTS	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Merivale TS	18	0.3	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.7	
Epworth	25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Subtotal	N/A	5	6	6	6	6	6	6	6	6	6	6	6	6	6	5	5	5	4	4	

East Ottawa/Orleans		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Distributed Generation		LTR																		
Bilberry Creek TS - H.O.	85	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Bilberry Creek TS - H1	85	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Orleans TS	102	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cyrville MTS	59	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Moulton MTS	34	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Wilhaven DS	58	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Navan DS	15	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Cumberland DS	15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal	N/A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Total		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Distributed Generation		LTR																		
Total	N/A	11	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	7	7

A.2.3 Planning Forecasts by Sub-System and Station

Nepean/Kanata Sub-system		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Net Demand (extreme weather)	LTR																			
Bridlewood MTS	37	22	22	22	23	22	22	22	23	39	39	40	39	39	39	39	39	39	39	39
Marchwood MTS	34	33	34	34	34	35	34	34	34	34	35	35	34	35	35	34	35	35	35	35
Fallowfield DS	26	31	36	39	38	41	49	51	54	55	58	59	61	66	67	70	71	74	76	79
Manotick DS	17	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Richmond DS	5	8	9	10	11	13	31	34	36	35	36	37	37	37	38	38	39	39	38	38
Manordale MTS	22	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	10	10
Limebank MTS	68	43	44	47	49	52	54	56	59	61	64	67	70	73	76	79	82	85	89	88
Marionville DS	15	13	13	14	14	14	14	14	14	14	14	14	14	14	14	14	14	15	15	15
Uplands MTS	30	25	25	26	26	27	27	27	27	28	28	28	29	29	29	30	30	30	30	30
South Gloucester DS	8	17	17	17	18	18	18	18	18	18	18	18	18	18	19	19	19	19	19	19
Greely DS	40	4	4	4	4	4	4	4	4	4	4	4	4	4	4	5	5	5	5	5
Russell DS	8	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Kanata MTS	55	47	46	47	47	47	47	46	47	47	47	47	48	47	48	47	48	48	48	48
South March TS - H.O.	109	43	43	43	43	43	42	42	42	27	26	26	26	26	26	26	26	26	26	25
South March TS - H1	109	68	73	67	72	76	80	84	89	92	96	76	78	78	77	77	78	78	78	78
Nepean TS	144	146	145	144	143	143	141	139	138	137	136	135	134	133	132	130	130	129	128	127
Terry Fox MTS	90	25	39	50	78	83	65	65	64	64	63	64	63	63	62	62	61	61	60	60
National Aeronautical CTS	N/A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Subtotal	N/A	546	573	585	622	638	651	657	671	678	689	671	678	685	688	693	699	703	707	707

Downtown Ottawa		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Net Demand (extreme weather)	LTR																			
Carling TS	93	81	82	83	84	85	86	86	87	88	93	94	95	96	96	97	98	99	99	100
Lincoln Heights TS	71	45	45	45	45	45	44	44	44	44	49	49	49	49	49	48	48	48	48	48
Woodroffe TS	92	39	39	40	41	42	42	43	43	44	53	53	54	54	55	55	56	56	56	57
Hinchey TS	77	44	58	60	62	66	68	70	72	75	67	69	71	73	75	77	79	81	83	85
Slater TS	118	105	106	113	114	116	115	114	114	113	113	112	112	112	112	111	111	111	110	110
Lisgar TS	108	61	64	67	71	74	74	75	75	76	87	87	88	89	90	90	90	90	90	89
King Edward TS	71	69	70	67	69	75	75	75	76	76	77	77	78	78	77	77	77	77	78	77
Russell TS	69	61	61	63	65	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73
Overbrook TS	130	81	85	91	94	100	101	102	108	109	110	110	111	111	112	113	113	114	114	115
Riverdale TS	105	100	102	99	102	111	112	112	114	116	118	118	119	120	120	120	121	122	123	123
Albion TS	88	71	72	72	73	73	73	73	74	74	74	74	75	75	75	76	76	76	77	77
Ellwood TS	59	27	27	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28
Nation Research TS	25	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
Hawthorne TS - H.O.	89	46	69	78	80	83	85	88	91	93	94	94	94	93	94	93	93	93	92	92
Hawthorne TS - H1	89	58	38	39	40	41	41	41	41	42	43	43	43	44	46	45	45	46	46	46
Centrepoint MTS	35	17	17	17	17	17	17	16	16	16	16	16	16	16	16	16	16	16	16	16
Merivale TS	18	14	14	14	13	15	15	15	15	16	16	17	17	19	19	20	20	20	20	19
Epworth	25	15	15	15	16	16	16	16	15	15	15	15	15	15	15	15	15	15	15	15
Subtotal	N/A	952	982	1009	1033	1077	1082	1086	1105	1118	1145	1148	1156	1164	1171	1171	1178	1183	1186	1187

East Ottawa/Orleans		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Net Demand (extreme weather)		LTR																		
Bilberry Creek TS - H.O.	85	53	53	54	54	54	54	54	54	54	54	54	55	55	55	55	55	55	55	55
Bilberry Creek TS - H1	85	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Orleans TS	102	5	86	90	92	92	94	96	96	98	99	100	100	102	103	105	105	107	107	109
Cyrville MTS	59	24	24	30	35	35	37	38	40	41	42	42	44	44	44	44	44	44	44	44
Moulton MTS	34	31	31	32	32	32	32	32	32	32	33	33	33	33	33	33	33	33	34	34
Wilhaven DS	58	42	4	4	5	5	6	6	6	7	7	9	10	10	11	11	12	11	12	13
Navan DS	15	18	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	5	5	5
Cumberland DS	15	5	5	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Subtotal	N/A	208	210	220	229	230	234	238	240	244	247	250	253	255	257	259	261	263	264	267

Total Ottawa Demand		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Net Demand (weather normal)		LTR																		
Total	N/A	1706	1765	1814	1884	1946	1967	1981	2016	2040	2080	2069	2088	2104	2116	2123	2138	2149	2157	2161

Provincially Derived Forecast

Total Ottawa Demand		2024	2025	2026	2027	2028	2029	2030	2031	2032
Total		2134	2148	2156	2172	184	220	2217	23	46