

Table 3-2

Year	Billed (GWh)	Growth (GWh)	Percent Change	Customer/Connection Count	Growth	Percent Change (%)
Billed Energy (GWh) and Customer Count / Connections						
2015 Board Approved	520.5			29,878		
2010 Actual	566.7			29,956		
2011 Actual	564.9	(1.8)	(0.3%)	30,055	99.0	0.3%
2012 Actual	548.3	(16.6)	(2.9%)	30,013	(42.0)	(0.1%)
2013 Actual	548.2	(0.1)	(0.0%)	30,030	17.0	0.1%
2014 Actual	538.0	(10.2)	(1.9%)	29,885	(145.0)	(0.5%)
2015 Actual	516.7	(21.3)	(4.0%)	29,857	(28.0)	(0.1%)
2016 Actual	488.8	(28.0)	(5.4%)	29,964	107.0	0.4%
2017 Actual	482.4	(6.4)	(1.3%)	29,977	13.0	0.0%
2018 Actual	497.0	14.6	3.0%	30,001	24.0	0.1%
2019 Actual	495.8	(1.2)	(0.2%)	30,047	46.0	0.2%
2020 Bridge - Normalized	491.9	(3.8)	(0.7%)	30,075	28.0	0.1%
2021 Test - Normalized	491.1	(0.8)	(0.2%)	30,104	29.0	0.1%

Table 3-3

Year	Residential	General Service < 50 kW	General Service 50 to 2999 kW	General Service 3000 to 4999 kW	Street Lighting	Sentinel Lighting	Unmetered Scattered Load	Total
Billed Energy (GWh)								
2015 Board Approved	205.5	85.4	209.9	17.3	2.0	0.4	0.0	520.5
2010 Actual	206.5	85.0	230.0	41.0	3.3	0.6	0.2	566.7
2011 Actual	207.4	85.0	231.7	37.1	3.2	0.5	0.1	564.9
2012 Actual	200.6	84.9	223.7	35.7	2.8	0.5	0.1	548.3
2013 Actual	207.8	85.1	216.6	35.8	2.3	0.4	0.1	548.2
2014 Actual	206.0	85.4	217.2	26.9	2.0	0.4	0.1	538.0
2015 Actual	196.7	83.6	216.2	17.7	2.0	0.4	0.0	516.7
2016 Actual	188.2	80.6	200.9	16.8	2.0	0.2	0.0	488.8
2017 Actual	184.5	78.8	200.3	16.5	2.0	0.1	0.0	482.4
2018 Actual	196.8	81.8	200.0	16.2	2.0	0.1	0.0	497.0
2019 Actual	197.8	80.4	200.0	15.4	2.0	0.1	0.0	495.8
2020 Bridge - Normalized	199.7	79.6	195.5	14.9	2.0	0.1	0.0	491.9
2021 Test - Normalized	201.7	79.0	193.7	14.5	2.0	0.1	0.0	491.1

14,897,243.5
14,897,243.5

Number of Customers/Connections

2015 Board Approved	21,124	2,668	247	1	5,419	412	7	29,878
2010 Actual	20,952	2,633	269	2	5,572	509	19	29,956
2011 Actual	21,096	2,623	268	2	5,574	474	18	30,055
2012 Actual	21,074	2,645	254	2	5,574	447	17	30,013
2013 Actual	21,108	2,649	255	2	5,574	427	15	30,030
2014 Actual	21,117	2,657	252	2	5,419	427	11	29,885
2015 Actual	21,122	2,646	254	1	5,422	402	10	29,857
2016 Actual	21,173	2,659	253	1	5,424	444	10	29,964
2017 Actual	21,192	2,653	261	1	5,424	436	10	29,977
2018 Actual	21,229	2,654	258	1	5,424	425	10	30,001
2019 Actual	21,280	2,653	263	1	5,424	417	9	30,047
2020 Bridge - Normalized	21,316	2,651	266	1	5,424	408	9	30,075
2021 Test - Normalized	21,352	2,649	269	1	5,424	400	9	30,104

Table 3-4

Year	Residential	General Service < 50 kW	General Service 50 to 2999 kW	General Service 3000 to 4999 kW	Street Lighting	Sentinel Lighting	Unmetered Scattered Load
Energy Usage per Customer/Connection (kWh per customer/connection)							
2015 Board Approved	9,728	31,994	849,735	17,254,810	373	985	4,578
2010 Actual	9,858	32,299	855,159	20,514,052	597	1,119	8,691
2011 Actual	9,829	32,414	864,430	18,543,426	575	1,016	4,671
2012 Actual	9,520	32,117	880,863	17,861,386	501	1,091	5,222
2013 Actual	9,845	32,133	849,468	17,887,518	421	1,040	5,939
2014 Actual	9,753	32,130	862,048	13,463,278	374	993	4,601
2015 Actual	9,314	31,583	851,334	17,738,636	376	930	4,293
2016 Actual	8,888	30,328	793,994	16,805,472	377	352	4,293
2017 Actual	8,708	29,693	767,610	16,522,752	375	296	4,293
2018 Actual	9,270	30,827	775,169	16,185,720	375	293	4,207
2019 Actual	9,297	30,309	760,279	15,352,960	375	294	4,388
2020 Bridge - Normalized	9,368	30,040	734,976	14,897,244	375	294	4,388
2021 Test - Normalized	9,447	29,836	720,065	14,455,054	375	294	4,388

Annual Growth Rate in Usage per Customer/Connection

C:\Users\skinnon\AppData\Roaming\Microsoft\Work Folders\Recent\106365-000022 - North Bay Hydro - 2021 Rate Application\North Bay 2021 Load Forecast Model - 20201229(118693466.1).xlsx
Exhibit 3 Tables

2015 Board Approved vs 2015 Actual	4.4%	1.3%	-0.2%	-2.7%	-0.8%	5.9%	6.6%
2010 Actual							
2011 Actual	-0.3%	0.4%	1.1%	-9.6%	-3.6%	-9.2%	-46.3%
2012 Actual	-3.2%	-0.9%	1.9%	-3.7%	-12.9%	7.4%	11.8%
2013 Actual	3.4%	0.0%	-3.5%	0.1%	-15.8%	-4.7%	13.7%
2014 Actual	-0.9%	0.0%	1.5%	-24.7%	-11.2%	-4.5%	-22.5%
2015 Actual	-4.5%	-1.7%	-1.2%	31.8%	0.4%	-6.3%	-6.7%
2016 Actual	-4.6%	-4.0%	-6.7%	-5.3%	0.3%	-62.2%	0.0%
2017 Actual	-2.0%	-2.1%	-3.3%	-1.7%	-0.3%	-15.9%	0.0%
2018 Actual	6.4%	3.8%	1.0%	-2.0%	-0.2%	-0.9%	-2.0%
2019 Actual	0.3%	-1.7%	-1.9%	-5.1%	0.2%	0.1%	4.3%
2020 Bridge - Normalized	0.8%	-0.9%	-3.3%	-3.0%	0.0%	0.0%	0.0%
2021 Test - Normalized	0.8%	-0.7%	-2.0%	-3.0%	0.0%	0.0%	0.0%

Table 3-5

Statistic	Value
R Square	95.7%
Adjusted R Square	95.4%
F Test	307.3
MAPE (Monthly)	2.3%
T-stats by Coefficient	
#REF!	29.3
#REF!	8.9
#REF!	3.8
#REF!	(5.1)
Constant	1.0

Table 3-6

Year	Actual	Predicted	% Difference
Purchased Energy (GWh)			
2010	592.1	0.0	(100.0%)
2011	593.7	0.0	(100.0%)
2012	572.6	0.0	(100.0%)
2013	573.2	0.0	(100.0%)
2014	561.2	0.0	(100.0%)
2015	538.3	514.9	(4.4%)
2016	509.0	513.9	1.0%
2017	500.7	507.1	1.3%
2018	514.9	524.5	1.9%
2019	514.1	516.6	0.5%
2020 Bridge - Normalized		513.8	
2021 Test - Normalized		512.9	
2021 Test - Normalized - 20 year trend		513.3	

Table 3-7

Year	Residential	General Service < 50 kW	General Service 50 to 2999 kW	General Service 3000 to 4999 kW	Street Lighting	Sentinel Lighting	Unmetered Scattered Load	Total
Number of Customers/Connections								
2010	20,952	2,633	269	2	5,572	509	19	29,956
2011	21,096	2,623	268	2	5,574	474	18	30,055
2012	21,074	2,645	254	2	5,574	447	17	30,013
2013	21,108	2,649	255	2	5,574	427	15	30,030
2014	21,117	2,657	252	2	5,419	427	11	29,885
2015	21,122	2,646	254	1	5,422	402	10	29,857
2016	21,173	2,659	253	1	5,424	444	10	29,964
2017	21,192	2,653	261	1	5,424	436	10	29,977
2018	21,229	2,654	258	1	5,424	425	10	30,001
2019	21,280	2,653	263	1	5,424	417	9	30,047

Table 3-8

Year	Residential	General Service < 50 kW	General Service 50 to 2999 kW	General Service 3000 to 4999 kW	Street Lighting	Sentinel Lighting	Unmetered Scattered Load
Growth Rate in Customers/Connections							
2010							
2011	0.7%	(0.4%)	(0.4%)	0.0%	0.0%	(6.9%)	(5.3%)
2012	(0.1%)	0.8%	(5.2%)	0.0%	0.0%	(5.7%)	(5.6%)
2013	0.2%	0.2%	0.4%	0.0%	0.0%	(4.5%)	(11.8%)
2014	0.0%	0.3%	(1.2%)	0.0%	(2.8%)	0.0%	(26.7%)
2015	0.0%	(0.4%)	0.8%	(50.0%)	0.1%	(5.9%)	(9.1%)
2016	0.2%	0.5%	(0.4%)	0.0%	0.0%	10.4%	0.0%
2017	0.1%	(0.2%)	3.2%	0.0%	0.0%	(1.8%)	0.0%
2018	0.2%	0.0%	(1.1%)	0.0%	0.0%	(2.5%)	0.0%
2019	0.2%	(0.0%)	1.9%	0.0%	0.0%	(1.9%)	(10.0%)
Geo Mean - 2017 to 2019	0.17%	(0.1%)	1.3%	0.0%	0.0%	(2.1%)	0.0%

Table 3-9

Year	Residential	General Service < 50 kW	General Service 50 to 2999 kW	General Service 3000 to 4999 kW	Street Lighting	Sentinel Lighting	Unmetered Scattered Load	Total
Forecast number of Customers/Connections								
2020	21,316	2,651	266	1	5,424	408	9	30,075
2021	21,352	2,649	269	1	5,424	400	9	30,104

Table 3-10

Year	Residential	General Service < 50 kW	General Service 50 to 2999 kW	General Service 3000 to 4999 kW	Street Lighting	Sentinel Lighting	Unmetered Scattered Load
Annual kWh Usage Per Customer/Connection							
2010	9,858	32,299	855,159	20,514,052	597	1,119	8,691
2011	9,829	32,414	864,430	18,543,426	575	1,016	4,671
2012	9,520	32,117	880,663	17,861,386	501	1,091	5,222
2013	9,845	32,133	849,468	17,887,518	421	1,040	5,939
2014	9,753	32,130	862,048	13,463,278	374	993	4,601
2015	9,314	31,583	851,334	17,738,636	376	930	4,293
2016	8,888	30,328	793,994	16,805,472	377	352	4,293
2017	8,708	29,693	767,610	16,522,752	375	296	4,293
2018	9,270	30,827	775,189	16,185,720	375	293	4,207
2019	9,297	30,309	760,279	15,352,960	375	294	4,388

Table 3-11

Year	Residential	General Service < 50 kW	General Service 50 to 2999 kW	General Service 3000 to 4999 kW	Street Lighting	Sentinel Lighting	Unmetered Scattered Load
Growth Rate in Customer/Connection							
2010							
2011	(0.3%)	0.4%	1.1%	(9.6%)	(3.6%)	(9.2%)	(46.3%)
2012	(3.2%)	(0.9%)	1.9%	(3.7%)	(12.9%)	7.4%	11.6%

2013	3.4%	0.0%	(3.5%)	0.1%	(15.8%)	(4.7%)	13.7%
2014	(0.9%)	(0.0%)	1.5%	(24.7%)	(11.2%)	(4.5%)	(22.5%)
2015	(4.5%)	(1.7%)	(1.2%)	31.8%	0.4%	(6.3%)	(6.7%)
2016	(4.6%)	(4.0%)	(6.7%)	(5.3%)	0.3%	(62.2%)	(0.0%)
2017	(2.0%)	(2.1%)	(3.3%)	(1.7%)	(0.3%)	(15.9%)	0.0%
2018	6.4%	3.8%	1.0%	(2.0%)	(0.2%)	(0.9%)	(2.0%)
2019	0.3%	(1.7%)	(1.9%)	(5.1%)	0.2%	0.1%	4.3%
Geo Mean - 2017 to 2019	1.5%	(0.0%)	(1.4%)	(3.0%)	(0.1%)	(5.9%)	0.7%

Table 3-12

Year	Residential	General Service < 50 kW	General Service 50 to 2999 kW	General Service 3000 to 4999 kW	Street Lighting	Sentinel Lighting	Unmetered Scattered Load
Forecast Annual kWh Usage per Customers/Connection							
2020	9,438	30,303	749,362	14,897,244	375	294	4,388
2021	9,580	30,296	738,601	14,455,054	375	294	4,388

Table 3-13

Year	Residential	General Service < 50 kW	General Service 50 to 2999 kW	General Service 3000 to 4999 kW	Street Lighting	Sentinel Lighting	Unmetered Scattered Load	TOTAL
NON-normalized Weather Billed Energy Forecast (GWh)								
2020 (Not Normalized)	201.2	80.3	199.3	14.9	2.0	0.1	0.0	497.9
2021 (Not Normalized)	204.6	80.3	198.7	14.5	2.0	0.1	0.0	500.1

Table 3-14

Residential	General Service < 50 kW	General Service 50 to 2999 kW	General Service 3000 to 4999 kW	Street Lighting	Sentinel Lighting	Unmetered Scattered Load
Weather Sensitivity						
91%	91%	82%	0%	0%	0%	0%

Table 3-15

Former CFF 6 year (2015-2020) kWh Target: 20,260,000 kWh							
	2015	2016	2017	2018	2019	2020	2021
2015 CDM Programs	16,748,850	16,682,974	16,674,278	16,670,505	16,663,767	16,660,104	16,656,981
2016 CDM Programs		4,554,824	4,554,804	4,554,783	4,554,761	4,554,740	4,554,740
2017 CDM Programs			6,401,725	5,503,683	5,502,829	5,501,975	5,501,832
2018 CDM Programs				4,027,457	2,917,353	2,907,174	2,907,174
2019 CDM Programs					1,827,951	1,946,094	2,199,926
Total in Year	16,748,850	21,237,798	27,630,807	30,756,427	31,466,661	31,570,087	31,820,653

Table 3-16

Year	Residential	GS < 50 kW	GS 50 to 2,999 kW	TOTAL
2021 Manual adjustment k	19,861	107,439	972,664	1,099,963
Less CEP	-	-	(777,539)	-777,539
Total	19,861	107,439	195,125	322,424
NBHDL CEP Adj				
	-	-	2,322,262	2,322,262
Total Manual Adjustment	19,861	107,439	2,517,387	2,644,686
2021 Manual adjustment k				
	-	-	1,372	1,372
Less CEP	-	-	(990)	-990
Total	-	-	382	382

Table 3-17

Year	Residential	General Service < 50 kW	General Service 50 to 2999 kW	General Service 3000 to 4999 kW	Street Lighting	Sentinel Lighting	Unmetered Scattered Load	TOTAL
Non-normalized Weather Billed Energy Forecast (GWh)								
2020 (Not Normalized)	201.2	80.3	199.3	14.9	2.0	0.1	0.04	497.9
2021 (Not Normalized)	204.6	80.3	198.7	14.5	2.0	0.1	0.04	500.1
Adjustment for Weather (GWh)								
2020	(1.5)	(0.6)	(1.3)	0.0	0.0	0.0	0.00	(3.4)
2021	(2.8)	(1.1)	(2.5)	0.0	0.0	0.0	0.00	(6.4)
Adjustment for CDM (GWh)								
2020	(0.0)	(0.1)	(2.5)	0.0	0.0	0.0	0.00	(2.6)
2021	(0.0)	(0.1)	(2.5)	0.0	0.0	0.0	0.00	(2.6)
Weather Normalized Billed Energy Forecast (GWh)								
2020 Bridge - Normalized	199.7	79.6	195.5	14.9	2.0	0.1	0.0	491.9
2021 Test - Normalized	201.7	79.0	193.7	14.5	2.0	0.1	0.0	491.1

Table 3-18

Year	General Service 50 to 2999 kW	General Service 3000 to 4999 kW	Street Lighting	Sentinel Lighting	TOTAL
Billed Annual kW					
2010	588,203	78,060	9,285	1,541	677,089
2011	582,946	70,473	9,042	1,287	663,748
2012	540,969	68,480	7,788	1,601	618,838
2013	535,313	69,448	6,559	1,224	612,544
2014	533,378	54,355	5,677	1,179	594,589

2015	537,898	39,466	5,690	1,034	584,088
2016	529,360	35,717	5,690	406	571,174
2017	528,741	30,516	5,690	330	565,277
2018	522,247	30,271	5,690	316	558,525
2019	523,294	29,275	5,690	310	558,570

Table 3-19

Year	General Service 50 to 2999 kW	General Service 3000 to 4999 kW	Street Lighting	Sentinel Lighting
Ratio of kW to kWh				
2010	0.2557%	0.1903%	0.2793%	0.2706%
2011	0.2516%	0.1900%	0.2822%	0.2671%
2012	0.2418%	0.1917%	0.2791%	0.3282%
2013	0.2471%	0.1941%	0.2793%	0.2757%
2014	0.2455%	0.2019%	0.2801%	0.2780%
2015	0.2488%	0.2225%	0.2794%	0.2765%
2016	0.2635%	0.2125%	0.2786%	0.2598%
2017	0.2639%	0.1847%	0.2794%	0.2555%
2018	0.2611%	0.1870%	0.2801%	0.2532%
2019	0.2617%	0.1907%	0.2794%	0.2535%
Average 2017-2019	0.2622%	0.1875%	0.2797%	0.2540%

2.0 2,034,328.52821
2.0 2,032,290.38045

Table 3-20

Year	General Service 50 to 2999 kW	General Service 3000 to 4999 kW	Street Lighting	Sentinel Lighting	TOTAL
Predicted Billed kW					
2020 Bridge - Normalized	518,927	27,927	5,690	304	552,848
2021 Test - Normalized	514,190	27,098	5,690	298	547,277

Table 3-21

	2015 Actual	2016 Actual	2017 Actual	2018 Actual	2019 Actual	2020 Bridge - Normalized	2021 Test - Normalized
Actual kWh Purchases	538,323,196	508,987,624	500,698,339	514,889,565	514,147,824	0	0
Predicted kWh Purchases before CDM adjustment	514,903,442	513,927,827	507,121,219	524,508,323	516,585,739	513,771,071	512,910,056
% Difference between actual and predicted purchases	(4.4%)	1.0%	1.3%	1.9%	0.5%		
Loss Factor						1.0388	1.0388
Total Billed Before Adjustments						494,560,346	493,731,527
CDM Adjustment						2,644,687	2,644,687
Total Billed After Adjustments	516,728,999	488,765,497	482,398,546	496,980,971	495,761,810	491,915,639	491,086,840

Table 3-22

	2015 Board Approved	2015 Actual	2016 Actual	2017 Actual	2018 Actual	2019 Actual	2020 Bridge - Normalized	2021 Test - Normalized
Residential								
Customers	21,124	21,122	21,173	21,192	21,229	21,280	21,316	21,352
kWh - Actuals	205,497,425	196,730,101	188,194,722	184,546,623	196,784,130	197,847,018	199,682,217	201,705,111
kWh - weather normalized	205,497,425	187,442,874	189,963,368	189,047,599	196,027,587	197,370,718	199,682,217	201,705,111
kWh per customer - Actual	9,728	9,314	8,888	8,708	9,270	9,297	9,368	9,447
kWh per customer - weather norm.	9,728	8,874	8,972	8,921	9,234	9,275	9,368	9,447
Variance Analysis Compare to Board Approved								
Customers		(0.01%)	0.23%	0.32%	0.50%	0.74%	0.91%	1.08%
kWh - Actuals		(4.27%)	(8.42%)	(10.20%)	(4.24%)	(3.72%)	(2.83%)	(1.85%)
kWh - weather normalized		(8.79%)	(7.56%)	(8.00%)	(4.61%)	(3.95%)	(2.83%)	(1.85%)
General Service < 50 kW								
Customers	2,668	2,646	2,659	2,653	2,654	2,653	2,651	2,649
kWh - Actuals	85,361,037	83,568,206	80,643,103	78,774,627	81,814,082	80,410,230	79,636,964	79,035,853
kWh - weather normalized	85,361,037	79,623,121	81,400,983	80,695,891	81,499,545	80,216,649	79,636,964	79,035,853
kWh per customer - Actual	31,994	31,583	30,328	29,693	30,827	30,309	30,040	29,836
kWh per customer - weather norm.	31,994	30,092	30,613	30,417	30,708	30,236	30,040	29,836
Variance Analysis Compare to Board Approved								
Customers		(0.82%)	(0.34%)	(0.56%)	(0.52%)	(0.56%)	(0.64%)	(0.71%)
kWh - Actuals		(2.10%)	(5.53%)	(7.72%)	(4.16%)	(5.80%)	(6.71%)	(7.41%)
kWh - weather normalized		(6.72%)	(4.64%)	(5.47%)	(4.52%)	(6.03%)	(6.71%)	(7.41%)
General Service 50 to 2999 kW								
Customers	247	254	253	261	258	263	266	269
kWh - Actuals	209,884,489	216,238,874	200,880,475	200,346,165	199,998,668	199,953,324	195,503,598	193,697,533
kWh - weather normalized	209,884,489	206,030,678	202,768,342	205,232,482	199,229,767	199,471,953	195,503,598	193,697,533
kWh - Actuals	519,865	537,898	529,360	528,741	522,247	523,294	518,927	514,190
kWh - Weather Normalized	519,865	523,492	515,203	521,464	506,212	506,827	518,927	514,190
kWh per customer - Actual	2,105	2,118	2,092	2,026	2,024	1,990	1,951	1,911
kWh per customer - weather norm.	2,105	2,061	2,036	1,998	1,962	1,927	1,951	1,911
Variance Analysis Compare to Board Approved								
Customers		2.83%	2.43%	5.67%	4.45%	6.48%	7.69%	8.91%
kWh - Actuals		3.03%	(4.29%)	(4.54%)	(4.71%)	(4.73%)	(6.85%)	(7.71%)
kWh - weather normalized		(1.84%)	(3.39%)	(2.22%)	(5.08%)	(4.96%)	(6.85%)	(7.71%)
kWh - Actuals		3.47%	1.83%	1.71%	0.46%	0.66%	(0.18%)	(1.09%)

408868804
49453
8267.826098

kW - Weather Normalized		0.70%	(0.90%)	0.31%	(2.63%)	(2.51%)	(0.18%)	(1.09%)
General Service 3000 to 4999 kW								
Customers	1	1	1	1	1	1	1	1
kWh - Actuals	17,254,810	17,738,636	16,805,472	16,522,752	16,185,720	15,352,960	14,897,244	14,455,054
kWh - weather normalized	17,254,810	16,901,231	16,963,409	16,925,731	16,123,493	15,315,999	14,897,244	14,455,054
kW - Actuals	33,801	39,466	35,717	30,516	30,271	29,275	27,927	27,098
kW - Weather Normalized	33,801	33,217	33,340	33,266	31,689	30,102	27,927	27,098
kW per customer - Actual	33,801	39,466	35,717	30,516	30,271	29,275	27,927	27,098
kW per customer - weather norm.	33,801	33,217	33,340	33,266	31,689	30,102	27,927	27,098
Variance Analysis Compare to Board Approved								
Customers		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
kWh - Actuals		2.80%	(2.60%)	(4.24%)	(6.20%)	(11.02%)	(13.66%)	(16.23%)
kWh - weather normalized		(2.05%)	(1.69%)	(1.91%)	(6.56%)	(11.24%)	(13.66%)	(16.23%)
kW - Actuals		16.76%	5.67%	(9.72%)	(10.44%)	(13.39%)	(17.38%)	(19.83%)
kW - Weather Normalized		(1.73%)	(1.37%)	(1.59%)	(6.25%)	(10.95%)	(17.38%)	(19.83%)
Street Lighting								
Connections	5,419	5,422	5,424	5,424	5,424	5,424	5,424	5,424
kWh - Actuals	2,018,762	2,036,369	2,042,502	2,036,369	2,031,595	2,036,369	2,036,369	2,036,369
kWh - weather normalized	2,018,762	1,940,236	2,061,697	2,086,034	2,023,785	2,031,466	2,036,369	2,036,369
kW - Actuals	5,641	5,690	5,690	5,690	5,690	5,690	5,690	5,690
kW - Weather Normalized	5,641	5,427	5,767	5,835	5,661	5,682	5,690	5,690
kW per customer - Actual	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
kW per customer - weather norm.	1.0	1.0	1.1	1.1	1.0	1.0	1.0	1.0
Variance Analysis Compare to Board Approved								
Connections		0.06%	0.09%	0.09%	0.09%	0.09%	0.09%	0.09%
kWh - Actuals		0.87%	1.18%	0.87%	0.64%	0.87%	0.87%	0.87%
kWh - weather normalized		(3.89%)	2.13%	3.33%	0.25%	0.63%	0.87%	0.87%
kW - Actuals		0.87%	0.87%	0.87%	0.87%	0.87%	0.87%	0.87%
kW - Weather Normalized		(3.80%)	2.23%	3.43%	0.35%	0.73%	0.87%	0.87%
Sentinel Lighting								
Connections	412	402	444	436	425	417	408	400
kWh - Actuals	405,959	373,880	156,291	129,078	124,703	122,420	119,778	117,430
kWh - weather normalized	405,959	356,230	157,760	132,224	124,224	122,126	119,778	117,430
kW - Actuals	1,193	1,034	406	330	316	310	304	298
kW - Weather Normalized	1,193	968	429	359	338	332	304	298
kW per customer - Actual	3	3	1	1	1	1	1	1
kW per customer - weather norm.	3	2	1	1	1	1	1	1
Variance Analysis Compare to Board Approved								
Connections		(2.43%)	7.77%	5.83%	3.16%	1.21%	(0.97%)	(2.91%)
kWh - Actuals		(7.90%)	(61.50%)	(68.20%)	(69.28%)	(69.84%)	(70.49%)	(71.07%)
kWh - weather normalized		(12.25%)	(61.14%)	(67.43%)	(69.40%)	(69.92%)	(70.49%)	(71.07%)
kW - Actuals		(13.38%)	(65.97%)	(72.37%)	(73.55%)	(74.00%)	(74.50%)	(75.00%)
kW - Weather Normalized		(18.86%)	(64.07%)	(69.88%)	(71.71%)	(72.18%)	(74.50%)	(75.00%)
Unmetered Scattered Load								
Customers	7	10	10	10	10	9	9	9
kWh - Actuals	32,045	42,934	42,934	42,934	42,073	39,490	39,490	39,490
kWh - weather normalized	32,045	40,907	43,337	43,981	41,911	39,395	39,490	39,490
kWh per customer - Actual	4,578	4,293	4,293	4,293	4,207	4,388	4,388	4,388
kWh per customer - weather norm.	4,578	4,091	4,334	4,398	4,191	4,377	4,388	4,388
Variance Analysis Compare to Board Approved								
Customers		42.86%	42.86%	42.86%	42.86%	28.57%	28.57%	28.57%
kWh - Actuals		33.98%	33.98%	33.98%	31.29%	23.23%	23.23%	23.23%
kWh - weather normalized		27.65%	35.24%	37.25%	30.79%	22.94%	23.23%	23.23%
Total								
Customer/Connections	29,878	29,857	29,964	29,977	30,001	30,047	30,075	30,104
kWh	520,454,527	516,728,999	488,765,497	482,398,546	496,980,971	495,761,810	491,915,659	491,086,840
kWh-Weather Normalized	520,454,527	492,335,278	493,358,897	494,163,943	495,070,312	494,568,306	491,915,659	491,086,840
kW from applicable classes	560,501	564,088	571,174	565,277	558,525	558,570	552,849	547,277
kW from applicable classes - wn	560,501	563,105	554,738	560,924	543,899	542,943	552,849	547,277
Variance Analysis Compare to Board Approved								
Customer/Connections		(0.07%)	0.29%	0.33%	0.41%	0.57%	0.66%	0.76%
kWh		(0.72%)	(6.09%)	(7.31%)	(4.51%)	(4.74%)	(5.48%)	(5.64%)
kWh-Weather Normalized		(5.40%)	(5.21%)	(5.05%)	(4.88%)	(4.97%)	(5.48%)	(5.64%)
kW from applicable classes		4.21%	1.90%	0.85%	(0.35%)	(0.34%)	(1.37%)	(2.36%)
kW from applicable classes - wn		0.46%	(1.03%)	0.08%	(2.96%)	(3.13%)	(1.37%)	(2.36%)

Table 3-24

Billing Determinants	Customer/Connections			kWh		kW		Volumetric Difference
	2015 Board Approved	2015 Actual	Difference	2015 Board Approved	2015 Actual	2015 Board Approved	2015 Actual	
Residential	21,124	21,122	(2)	205,497,425	196,730,101			(8,767,324)
General Service < 50 kW	2,668	2,646	(22)	85,361,037	83,568,206			(1,792,831)
General Service 50 to 2999 kW	247	254	7			519,865	537,898	18,033
General Service 3000 to 4999 kW	1	1	0			33,801	39,466	5,665

2015 rates

HDD

	5,158.05	4,971	-0.042663913
-0.021002921			
0.034687963	0.028340081		

INT RATES

1.1279

0.0172

Sentinel Lighting	412	402	(10)			1,193	1,034	(160)
Unmetered Scattered Load	7	10	3	32,045	42,934			10,889
Total	29,878	29,857	(21)	290,890,507	280,341,240	560,501	584,088	

Table 3-26

Billing Determinants	Customer/Connections			kWh		kW		Volumetric Difference
	2015 Actual	2016 Actual	Difference	2015 Actual	2016 Actual	2015 Actual	2016 Actual	
Residential	21,122	21,173	51	196,730,101	188,194,722			(8,535,379)
General Service < 50 kW	2,646	2,659	13	83,568,206	80,643,103			(2,925,103)
General Service 50 to 2999 kW	254	253	(1)			537,898	529,360	(8,537)
General Service 3000 to 4999 kW	1	1	0			39,466	35,717	(3,749)
Street Lighting	5,422	5,424	2			5,690	5,690	0
Sentinel Lighting	402	444	42			1,034	406	(628)
Unmetered Scattered Load	10	10	0	42,934	42,934			(0)
Total	29,857	29,964	107	280,341,240	268,880,758	584,088	571,174	

4.3%
3.5%
1.6%
9.5%

60.7%

Table 3-28

Billing Determinants	Customer/Connections			kWh		kW		Volumetric Difference
	2016 Actual	2017 Actual	Difference	2016 Actual	2017 Actual	2016 Actual	2017 Actual	
Residential	21,173	21,192	19	188,194,722	184,546,623			(3,648,098)
General Service < 50 kW	2,659	2,653	(6)	80,643,103	78,774,627			(1,868,475)
General Service 50 to 2999 kW	253	261	8			529,360	528,741	(619)
General Service 3000 to 4999 kW	1	1	0			35,717	30,516	(5,201)
Street Lighting	5,424	5,424	0			5,690	5,690	0
Sentinel Lighting	444	436	(8)			406	330	(76)
Unmetered Scattered Load	10	10	0	42,934	42,934			0
Total	29,964	29,977	13	268,880,758	263,364,184	571,174	565,277	

1.9%
2.3%
0.1%
14.6%

18.8%
0.0%

Table 3-30

Billing Determinants	Customer/Connections			kWh		kW		Volumetric Difference
	2017 Actual	2018 Actual	Difference	2017 Actual	2018 Actual	2017 Actual	2018 Actual	
Residential	21,192	21,229	37	184,546,623	196,784,130			12,237,507
General Service < 50 kW	2,653	2,654	1	78,774,627	81,814,082			3,039,455
General Service 50 to 2999 kW	261	258	(3)			528,741	522,247	(6,494)
General Service 3000 to 4999 kW	1	1	0			30,516	30,271	(245)
Street Lighting	5,424	5,424	0			5,690	5,690	0
Sentinel Lighting	436	425	(11)			330	316	(14)
Unmetered Scattered Load	10	10	0	42,934	42,073			(861)
Total	29,977	30,001	24	263,364,184	278,640,285	565,277	558,525	

-6.6%
-3.9%
1.2%
0.8%
0.0%
4.3%
2.0%

Table 3-32

Billing Determinants	Customer/Connections			kWh		kW		Volumetric Difference
	2018 Actual	2019 Actual	Difference	2018 Actual	2019 Actual	2018 Actual	2019 Actual	
Residential	21,229	21,280	51	196,784,130	197,847,018			1,062,888
General Service < 50 kW	2,654	2,653	(1)	81,814,082	80,410,230			(1,403,852)
General Service 50 to 2999 kW	258	263	5			522,247	523,294	1,047
General Service 3000 to 4999 kW	1	1	0			30,271	29,275	(996)
Street Lighting	5,424	5,424	0			5,690	5,690	0
Sentinel Lighting	425	417	(8)			316	310	(6)
Unmetered Scattered Load	10	9	(1)	42,073	39,490			(2,583)
Total	30,001	30,047	46	278,640,285	278,296,738	558,525	558,570	

-0.5%
1.7%
-0.2%
3.3%
0.0%
1.7%
6.1%

Table 3-34

Billing Determinants	Customer/Connections			kWh		kW		Volumetric Difference
	2019 Actual	2020 Bridge	Difference	2019 Actual	2020 Bridge	2019 Actual	2020 Bridge	
Residential	21,280	21,316	36	197,847,018	199,682,217			1,835,199
General Service < 50 kW	2,653	2,651	(2)	80,410,230	79,636,964			(773,266)
General Service 50 to 2999 kW	263	266	3			523,294	518,927	(4,368)
General Service 3000 to 4999 kW	1	1	0			29,275	27,927	(1,348)
Street Lighting	5,424	5,424	0			5,690	5,690	0
Sentinel Lighting	417	408	(9)			310	304	(6)
Unmetered Scattered Load	9	9	0	39,490	39,490			0
Total	30,047	30,075	28	278,296,738	279,358,670	558,570	552,849	

-0.9%
1.0%
0.8%
4.6%
0.0%
1.9%
0.0%

Table 3-36

Billing Determinants	Customer/Connections			kWh		kW		Volumetric Difference
	2020 Bridge	2021 Test	Difference	2020 Bridge	2021 Test	2020 Bridge	2021 Test	
Residential	21,316	21,352	36	199,682,217	201,705,111			2,022,894
General Service < 50 kW	2,651	2,649	(2)	79,636,964	79,035,853			(601,111)
General Service 50 to 2999 kW	266	269	3			518,927	514,190	(4,736)
General Service 3000 to 4999 kW	1	1	0			27,927	27,098	(829)
Street Lighting	5,424	5,424	0			5,690	5,690	0
Sentinel Lighting	408	400	(8)			304	298	(6)
Unmetered Scattered Load	9	9	0	39,490	39,490			0
Total	30,075	30,104	29	279,358,670	280,780,454	552,849	547,277	

-1.0%
0.8%
0.9%
3.0%
0.0%
2.0%
0.0%

EX1 Table

Billing Determinants	Customer/Connections			kWh		kW		Volumetric Difference
	2015 Board Approved	2021 Test	Difference	2015 Board Approved	2021 Test	2015 Board Approved	2021 Test	
Residential	21,124	21,352	228	205,497,425	201,705,111			(3,792,314)
General Service < 50 kW	2,668	2,649	(19)	85,361,037	79,035,853			(6,325,184)
General Service 50 to 2999 kW	247	269	22			519,865	514,190	(5,674)
General Service 3000 to 4999 kW	1	1	0			33,801	27,098	(6,703)
Street Lighting	5,419	5,424	5			5,641	5,690	49
Sentinel Lighting	412	400	(12)			1,193	298	(895)
Unmetered Scattered Load	7	9	2	32,045	39,490			7,445
Total	29,878	30,104	226	39,490	280,780,454	560,501	547,277	

Table 3-24 XX

Average Consumption or Demand per Customer/Connection	kWh/kW	2015 Board Approved	2015 Weather Actual		2015 Weather Normalized	
			Average	Variance	Average	Variance
Residential	kWh	9,728	9,314	-4.3%	8,874	-8.8%
General Service < 50 kW	kWh	31,994	31,583	-1.3%	30,092	-5.9%
General Service 50 to 2999 kW	kW	2,105	2,118	0.6%	2,061	-2.1%
General Service 3000 to 4999 kW	kW	33,801	39,466	16.8%	33,217	-1.7%
Street Lighting	kW	1.0	1.0	0.0%	1.0	-3.8%
Sentinel Lighting	kW	2.9	2.6	-11.2%	2.4	-16.8%
Unmetered Scattered Load	kWh	4,578	4,293	-6.2%	4,091	-10.6%

Table 3-26 XX

Average Consumption or Demand per Customer/Connection	kWh/kW	Weather Actual			Weather Normalized		
		2015	2016	Variance	2015	2016	Variance
Residential	kWh	9,314	8,888	-4.6%	8,874	8,972	1.1%
General Service < 50 kW	kWh	31,583	30,328	-4.0%	30,092	30,613	1.7%
General Service 50 to 2999 kW	kW	2,118	2,092	-1.2%	2,061	2,036	-1.2%
General Service 3000 to 4999 kW	kW	39,466	35,717	-9.5%	33,217	33,340	0.4%
Street Lighting	kW	1.0	1.0	0.0%	1.0	1.1	6.2%
Sentinel Lighting	kW	2.6	0.9	-64.4%	2.4	1.0	-59.9%
Unmetered Scattered Load	kWh	4,293	4,293	0.0%	4,091	4,334	5.9%

Table 3-28 XX

Average Consumption or Demand per Customer/Connection	kWh/kW	Weather Actual			Weather Normalized		
		2016	2017	Variance	2016	2017	Variance
Residential	kWh	8,888	8,708	-2.0%	8,972	8,921	-0.6%
General Service < 50 kW	kWh	30,328	29,693	-2.1%	30,613	30,417	-0.6%
General Service 50 to 2999 kW	kW	2,092	2,026	-3.2%	2,036	1,998	-1.9%
General Service 3000 to 4999 kW	kW	35,717	30,516	-14.6%	33,340	33,266	-0.2%
Street Lighting	kW	1.0	1.0	0.0%	1.1	1.1	1.2%
Sentinel Lighting	kW	0.9	0.8	-17.3%	1.0	0.8	-14.6%
Unmetered Scattered Load	kWh	4,293	4,293	0.0%	4,334	4,398	1.5%

Table 3-30 XX

Average Consumption or Demand per Customer/Connection	kWh/kW	Weather Actual			Weather Normalized		
		2017	2018	Variance	2017	2018	Variance
Residential	kWh	8,708	9,270	6.4%	8,921	9,234	3.5%
General Service < 50 kW	kWh	29,693	30,827	3.8%	30,417	30,708	1.0%
General Service 50 to 2999 kW	kW	2,026	2,024	-0.1%	1,998	1,962	-1.8%
General Service 3000 to 4999 kW	kW	30,516	30,271	-0.8%	33,266	31,689	-4.7%
Street Lighting	kW	1.0	1.0	0.0%	1.1	1.0	-3.0%
Sentinel Lighting	kW	0.8	0.7	-1.8%	0.8	0.8	-3.6%
Unmetered Scattered Load	kWh	4,293	4,207	-2.0%	4,398	4,191	-4.7%

Table 3-32 XX

Average Consumption or Demand per Customer/Connection	kWh/kW	Weather Actual			Weather Normalized		
		2018	2019	Variance	2018	2019	Variance
Residential	kWh	9,270	9,297	0.3%	9,234	9,275	0.4%
General Service < 50 kW	kWh	30,827	30,309	-1.7%	30,708	30,236	-1.5%
General Service 50 to 2999 kW	kW	2,024	1,990	-1.7%	1,962	1,927	-1.8%
General Service 3000 to 4999 kW	kW	30,271	29,275	-3.3%	31,689	30,102	-5.0%
Street Lighting	kW	1.0	1.0	0.0%	1.0	1.0	0.4%
Sentinel Lighting	kW	0.7	0.7	0.2%	0.8	0.8	0.2%
Unmetered Scattered Load	kWh	4,207	4,388	4.3%	4,191	4,377	4.4%

Table 3-34 XX

Average Consumption or Demand per Customer/Connection	kWh/kW	Weather Actual			Weather Normalized		
		2019	2020 (WN)	Variance	2019	2020	Variance
Residential	kWh	9,297	9,368	0.8%	9,275	9,368	1.0%
General Service < 50 kW	kWh	30,309	30,040	-0.9%	30,236	30,040	-0.6%
General Service 50 to 2999 kW	kW	1,990	1,951	-2.0%	1,927	1,951	1.2%
General Service 3000 to 4999 kW	kW	29,275	27,927	-4.6%	30,102	27,927	-7.2%
Street Lighting	kW	1.0	1.0	0.0%	1.0	1.0	0.1%
Sentinel Lighting	kW	0.7	0.7	0.2%	0.8	0.7	-6.3%
Unmetered Scattered Load	kWh	4,388	4,388	0.0%	4,398	4,398	0.0%

North Bay Hydro 2021 Rate Application North Bay 2021 Load Forecast Model - 20201229(118693466.1).xlsx

Table 3-36 XX

Average Consumption or Demand per Customer/Connection	kWh/kW	Weather Normalized		
		2020	2021	Variance
Residential	kWh	9,368	9,447	0.8%
General Service < 50 kW	kWh	30,040	29,836	-0.7%
General Service 50 to 2999 kW	kW	1,951	1,911	-2.0%
General Service 3000 to 4999 kW	kW	27,927	27,098	-3.0%
Street Lighting	kW	1.0	1.0	0.0%
Sentinel Lighting	kW	0.7	0.7	0.0%
Unmetered Scattered Load	kWh	4,388	4,388	0.0%

North Bay Hydro Distribution Ltd. Weather Normal Load Forecast for 2015 Budget

	2010 Actual	2011 Actual	2012 Actual	2013 Actual	2014 Actual	2015 Actual	2016 Actual	2017 Actual	2018 Actual
Actual kWh Purchases	592,105,954	593,738,608	572,612,693	573,172,085	561,189,732	538,323,196	508,987,624	500,698,339	514,889,565
Predicted kWh Purchases	0	0	0	0	0	514,903,442	513,927,827	507,121,219	524,508,323
% Difference	-100.0%	-100.0%	-100.0%	-100.0%	-100.0%	-4.4%	1.0%	1.3%	1.9%
CEP impact uplift									
Total Adjusted Predicted Purchases									
Billed kWh	566,701,778	564,905,304	548,341,092	548,196,762	537,983,046	516,728,999	488,765,497	482,398,546	496,980,971
CEP - Manual Adjustment									
Total Adjusted Sales									
By Class									
Residential									
Customers	20,952	21,096	21,074	21,108	21,117	21,122	21,173	21,192	21,229
kWh	206,535,118	207,358,082	200,614,424	207,806,639	205,950,080	196,730,101	188,194,722	184,546,623	196,784,130
General Service < 50 kW									
Customers	2,633	2,623	2,645	2,649	2,657	2,646	2,659	2,653	2,654
kWh	85,042,099	85,023,144	84,948,671	85,119,331	85,369,055	83,568,206	80,643,103	78,774,627	81,814,082
General Service 50 to 2999 kW									
Customers	269	268	254	255	252	254	253	261	258
kWh	230,037,737	231,667,366	223,688,453	216,614,454	217,236,187	216,238,874	200,880,475	200,346,165	199,998,668
kW	588,203	582,946	540,969	535,313	533,378	537,898	529,360	528,741	522,247
General Service 3000 to 4999 kW									
Customers	2	2	2	2	2	1	1	1	1
kWh	41,028,104	37,086,852	35,722,772	35,775,036	26,926,556	17,738,636	16,805,472	16,522,752	16,185,720
kW	78,060	70,473	68,480	69,448	54,355	39,466	35,717	30,516	30,271
Street Lighting									
Customers	5,572	5,574	5,574	5,574	5,419	5,422	5,424	5,424	5,424
kWh	3,324,190	3,204,123	2,790,238	2,348,268	2,026,566	2,036,369	2,042,502	2,036,369	2,031,595
kW	9,285	9,042	7,788	6,559	5,677	5,690	5,690	5,690	5,690
Sentinel Lighting									
Connections	509	474	447	427	427	402	444	436	425
kWh	569,408	481,664	487,759	443,951	423,993	373,880	156,291	129,076	124,703
kW	1,541	1,287	1,601	1,224	1,179	1,034	406	330	316
Unmetered Scattered Load									
Customer	19	18	17	15	11	10	10	10	10
kWh	165,123	84,073	88,774	89,084	50,610	42,934	42,934	42,934	42,073
Total									
Customer/Connections	29,956	30,055	30,013	30,030	29,885	29,857	29,964	29,977	30,001
kWh	566,701,778	564,905,304	548,341,092	548,196,762	537,983,046	516,728,999	488,765,497	482,398,546	496,980,971
kW from applicable classes	677,089	663,748	618,838	612,544	594,589	584,088	571,174	565,277	558,525
Check totals	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Customer Count - Resi / GS	23,878	24,011	23,975	24,014	24,028	24,023	24,086	24,107	24,142
Street Lights	1	1	1	1	1	1	1	1	1
Sentinal Lights	263	263	263	263					
USL	21	21	17	15	11	10	10	10	10
	24,163	24,296	24,256	24,293	24,040	24,034	24,097	24,118	24,153
	#REF!	133	-40	37	-253	-6	63	21	35

2019 Actual	2020 Weather Normal	2021 Weather Normal
514,147,824		
516,585,739	513,771,071	512,910,056
0.5%		
	-2,747,417	-2,747,417
	511,023,653	510,162,639
495,761,810	494,560,346	493,731,527
	-2,644,687	-2,644,687
	491,915,659	491,086,840
21,280	21,316	21,352
197,847,018	199,682,217	201,705,111
2,653	2,651	2,649
80,410,230	79,636,964	79,035,853
263	266	269
199,953,324	195,503,598	193,697,533
523,294	518,927	514,190
1	1	1
15,352,960	14,897,244	14,455,054
29,275	27,927	27,098
5,424	5,424	5,424
2,036,369	2,036,369	2,036,369
5,690	5,690	5,690
417	408	400
122,420	119,778.32	117,429.73
310	304	298
9	9	9
39,490	39,490	39,490
30,047	30,075	30,104
495,761,810	491,915,659	491,086,840
558,570	552,849	547,277
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00
24,197	24,234	24,271
1	1	1
9	9	9
24,207	24,244	24,281
54	-49	37

	<u>Purchased</u>	<u>Heating Degree Days</u>	<u>Cooling Degree Days</u>	<u>Number of Days in Month</u>	<u>Spring Fall Flag</u>	<u>Predicted Purchases</u>	<u>% Variance - Absolute</u>
Jan-09	66,435,130	1046	0	31	0		0.0%
Feb-09	54,391,300	773	0	28	0		0.0%
Mar-09	54,188,320	671	0	31	1		0.0%
Apr-09	45,313,310	421	0	30	1		0.0%
May-09	40,746,062	257	0	31	1		0.0%
Jun-09	41,206,069	85	34	30	0		0.0%
Jul-09	41,748,515	46	14	31	0		0.0%
Aug-09	42,834,531	61	36	31	0		0.0%
Sep-09	40,869,246	126	5	30	1		0.0%
Oct-09	46,305,269	409	0	31	1		0.0%
Nov-09	47,482,200	454	0	30	1		0.0%
Dec-09	58,800,731	824	0	31	0		0.0%
Jan-10	61,714,800	887	0	31	0		0.0%
Feb-10	54,321,931	753	0	28	0		0.0%
Mar-10	50,859,731	501	0	31	1		0.0%
Apr-10	44,050,485	315	0	30	1		0.0%
May-10	44,651,823	148	29	31	1		0.0%
Jun-10	42,680,285	71	7	30	0		0.0%
Jul-10	47,940,331	11	90	31	0		0.0%
Aug-10	46,659,623	29	70	31	0		0.0%
Sep-10	43,088,392	177	12	30	1		0.0%
Oct-10	45,676,969	370	0	31	1		0.0%
Nov-10	50,732,085	526	0	30	1		0.0%
Dec-10	59,729,500	813	0	31	0		0.0%
Jan-11	64,609,346	984	0	31	0		0.0%
Feb-11	56,418,838	798	0	28	0		0.0%
Mar-11	57,187,262	742	0	31	1		0.0%
Apr-11	47,356,077	444	0	30	1		0.0%
May-11	43,036,769	175	7	31	1		0.0%
Jun-11	42,724,254	66	22	30	0		0.0%
Jul-11	47,506,515	3	85	31	0		0.0%
Aug-11	45,624,408	17	46	31	0		0.0%
Sep-11	42,233,746	116	18	30	1		0.0%
Oct-11	43,980,523	295	2	31	1		0.0%
Nov-11	47,499,562	465	0	30	1		0.0%
Dec-11	55,561,308	751	0	31	0		0.0%
Jan-12	60,440,354	855	0	31	0		0.0%
Feb-12	53,240,192	718	0	29	0		0.0%
Mar-12	51,166,854	510	1	31	1		0.0%
Apr-12	44,760,523	426	0	30	1		0.0%
May-12	41,974,455	138	14	31	1		0.0%
Jun-12	43,023,082	51	49	30	0		0.0%
Jul-12	46,297,146	2	78	31	0		0.0%
Aug-12	43,563,745	27	45	31	0		0.0%
Sep-12	40,969,382	163	12	30	1		0.0%
Oct-12	43,802,875	331	0	31	1		0.0%
Nov-12	48,147,860	550	0	30	1		0.0%
Dec-12	55,226,225	771	0	31	0		0.0%
Jan-13	60,327,762	893	0	31	0		0.0%
Feb-13	53,600,343	801	0	28	0		0.0%
Mar-13	52,121,236	685	0	31	1		0.0%
Apr-13	46,644,026	496	0	30	1		0.0%
May-13	41,426,399	199	10	31	1		0.0%
Jun-13	39,734,886	103	15	30	0		0.0%
Jul-13	44,872,690	39	53	31	0		0.0%
Aug-13	42,128,550	49	23	31	0		0.0%
Sep-13	39,409,892	182	2	30	1		0.0%
Oct-13	43,095,284	322	0	31	1		0.0%
Nov-13	49,774,197	626	0	30	1		0.0%
Dec-13	60,036,819	964	0	31	0		0.0%
Jan-14	63,463,232	1025	0	31	0		0.0%
Feb-14	54,070,343	883	0	28	0		0.0%
Mar-14	56,439,185	880	0	31	1		0.0%
Apr-14	44,570,607	483	0	30	1		0.0%
May-14	39,797,076	200	1	31	1		0.0%
Jun-14	39,266,620	53	24	30	0		0.0%
Jul-14	40,614,145	58	18	31	0		0.0%

Purchased Power Model

Aug-14	40,130,105	60	16	31	0	0.0%
Sep-14	39,320,269	157	5	30	1	0.0%
Oct-14	41,890,568	342	0	31	1	0.0%
Nov-14	48,281,109	643	0	30	1	0.0%
Dec-14	53,346,473	711	0	31	0	0.0%

	Purchased	Heating Degree Days	Cooling Degree Days	Number of Days in Month	Spring Fall Flag	Predicted Purchases
Jan-15	60,955,014	1065	0	31	0	56,985,475
Feb-15	56,605,601	1041	0	28	0	53,881,444
Mar-15	52,369,681	801	0	31	1	49,122,029
Apr-15	42,936,932	439	0	30	1	40,310,182
May-15	38,321,444	191	8	31	1	36,625,332
Jun-15	37,322,701	101	2	30	0	35,182,763
Jul-15	41,173,436	37	55	31	0	40,437,780
Aug-15	40,113,558	30	45	31	0	39,205,743
Sep-15	39,126,212	72	43	30	1	36,997,623
Oct-15	40,715,709	380	0	31	1	39,890,112
Nov-15	42,394,599	436	0	30	1	40,243,276
Dec-15	46,288,309	565	0	31	0	46,021,683
Jan-16	53,275,790	882	0	31	0	52,974,412
Feb-16	50,185,520	857	0	29	0	50,699,587
Mar-16	45,995,357	681	0	31	1	46,490,763
Apr-16	41,316,027	545	0	30	1	42,648,597
May-16	36,199,389	207	12	31	1	37,359,911
Jun-16	36,570,355	90	22	30	0	37,102,807
Jul-16	40,114,787	29	58	31	0	40,556,012
Aug-16	41,396,575	13	69	31	0	41,493,957
Sep-16	36,257,722	102	12	30	1	34,206,547
Oct-16	38,047,288	311	2	31	1	38,554,052
Nov-16	40,688,065	472	0	30	1	41,029,694
Dec-16	48,940,750	783	0	31	0	50,811,487
Jan-17	50,172,295	800	0	31	0	51,169,050
Feb-17	44,767,408	730	0	28	0	47,054,849
Mar-17	48,902,657	798	0	31	1	49,052,930
Apr-17	38,767,221	397	0	30	1	39,397,629
May-17	36,984,603	256	1	31	1	37,231,369
Jun-17	35,651,142	86	14	30	0	36,155,791
Jul-17	38,088,069	30	31	31	0	37,620,900
Aug-17	36,767,307	65	13	31	0	36,466,274
Sep-17	36,665,580	121	30	30	1	36,661,919
Oct-17	37,361,044	252	0	31	1	37,082,258
Nov-17	43,727,237	621	0	30	1	44,301,502
Dec-17	52,843,775	971	0	31	0	54,926,748
Jan-18	55,165,428	922	0	31	0	53,843,092
Feb-18	46,543,673	756	0	28	0	47,631,775
Mar-18	46,187,501	717	0	31	1	47,269,504
Apr-18	42,016,294	584	0	30	1	43,493,147
May-18	36,563,258	196	15	31	1	37,532,911
Jun-18	35,697,073	78	17	30	0	36,326,637
Jul-18	42,293,825	8	95	31	0	44,190,067
Aug-18	40,093,009	16	55	31	0	40,040,684
Sep-18	35,816,190	150	24	30	1	36,639,367
Oct-18	39,622,118	432	0	31	1	41,022,028
Nov-18	44,982,862	672	0	30	1	45,416,966
Dec-18	49,908,333	797	0	31	0	51,102,144
Jan-19	56,704,516	1042	0	31	0	56,490,810
Feb-19	49,050,451	811	0	28	0	48,844,856
Mar-19	48,618,580	770	0	31	1	48,443,099
Apr-19	40,799,606	484	0	30	1	41,290,737
May-19	36,697,206	288	0	31	1	37,871,967
Jun-19	35,140,288	92	7	30	0	35,557,466
Jul-19	42,388,534	7	74	31	0	41,848,965
Aug-19	37,599,279	43	18	31	0	36,571,127
Sep-19	33,915,685	155	2	30	1	34,290,692
Oct-19	37,837,876	348	0	31	1	39,184,858
Nov-19	45,382,225	678	0	30	1	45,555,165
Dec-19	50,013,578	775	0	31	0	50,635,996

Variances (kWh)	% Variance - Absolute
-3,969,539	6.5%
-2,724,157	4.8%
-3,247,652	6.2%
-2,626,750	6.1%
-1,696,112	4.4%
-2,139,938	5.7%
-735,655	1.8%
-907,815	2.3%
-2,128,589	5.4%
-825,596	2.0%
-2,151,323	5.1%
-266,627	0.6%
-301,378	0.6%
514,068	1.0%
495,405	1.1%
1,332,571	3.2%
1,160,522	3.2%
532,453	1.5%
441,225	1.1%
97,382	0.2%
-2,051,175	5.7%
506,764	1.3%
341,629	0.8%
1,870,736	3.8%
996,754	2.0%
2,287,441	5.1%
150,273	0.3%
630,408	1.6%
246,766	0.7%
504,649	1.4%
-467,169	1.2%
-301,033	0.8%
-3,661	0.0%
-278,786	0.7%
574,265	1.3%
2,082,972	3.9%
-1,322,337	2.4%
1,088,103	2.3%
1,082,003	2.3%
1,476,853	3.5%
969,653	2.7%
629,564	1.8%
1,896,241	4.5%
-52,325	0.1%
823,177	2.3%
1,399,911	3.5%
434,104	1.0%
1,193,811	2.4%
-213,705	0.4%
-205,595	0.4%
-175,481	0.4%
491,131	1.2%
1,174,761	3.2%
417,177	1.2%
-539,569	1.3%
-1,028,152	2.7%
375,007	1.1%
1,346,983	3.6%
172,940	0.4%
622,418	1.2%
-0	2.3%

SUMMARY OUTPUT

Regression Statistics	
Multiple R	97.8%
R Square	95.7%
Adjusted R Square	95.4%
Standard Error	1380193.748
Observations	60

ANOVA

	df	SS	MS	F	Significance F
Regression	4	2.34153E+15	5.85382E+14	307.297562	6.4444E-37
Residual	55	1.04771E+14	1.90493E+12		
Total	59	2.4463E+15			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	6,937,297.49	6820540.926	1.02	0.313550621	-6731371.968	20605966.96	-6731371.968	20605966.96
Heating Degree Days	21,936.36	748.3998163	29.31	2.98506E-35	20436.53255	23436.18604	20436.53255	23436.18604
Cooling Degree Days	109,601.55	12298.27701	8.91	2.92343E-12	84955.2476	134247.8434	84955.2476	134247.8434
Number of Days in Month	861,014.17	224866.4481	3.83	0.000331789	410371.7332	1311656.598	410371.7332	1311656.598
Spring Fall Flag	(2,083,215.39)	407542.1822	(5.11)	4.15551E-06	-2899948.174	-1266482.605	-2899948.174	-1266482.61

MAPE (Mean Absolute % Error) - Direct relationship to Rsquare value

Purchased Power Model

	Purchased	Heating Degree Days	Cooling Degree Days	Number of Days in Month	Spring Flag	Fall Flag	Predicted Purchases
Jan-20		935	0	31	0	0	54,149,214
Feb-20		815	0	29	0	0	49,781,770
Mar-20		709	0	31	1	1	47,098,285
Apr-20		461	0	30	1	1	40,802,104
May-20		200	10	31	1	1	36,988,362
Jun-20		79	18	30	0	0	36,457,411
Jul-20		22	64	31	0	0	41,087,589
Aug-20		35	40	31	0	0	38,787,475
Sep-20		140	16	30	1	1	35,496,720
Oct-20		338	0	31	1	1	39,003,200
Nov-20		569	0	30	1	1	43,159,605
Dec-20		790	0	31	0	0	50,959,338
Jan-21		935	0	31	0	0	54,149,214
Feb-21		815	0	28	0	0	48,920,756
Mar-21		709	0	31	1	1	47,098,285
Apr-21		461	0	30	1	1	40,802,104
May-21		200	10	31	1	1	36,988,362
Jun-21		79	18	30	0	0	36,457,411
Jul-21		22	64	31	0	0	41,087,589
Aug-21		35	40	31	0	0	38,787,475
Sep-21		140	16	30	1	1	35,496,720
Oct-21		338	0	31	1	1	39,003,200
Nov-21		569	0	30	1	1	43,159,605
Dec-21		790	0	31	0	0	50,959,338

3,603,727,675

2020/2021 Forecast Summary:

2009	580,320,683			
2010	592,105,954			
2011	593,738,608			
2012	572,612,693			
2013	573,172,085			
2014	561,189,732			
2015	538,323,196	514,903,442	(23,419,754)	-4.4%
2016	508,987,624	513,927,827	4,940,202	1.0%
2017	500,698,339	507,121,219	6,422,880	1.3%
2018	514,889,565	524,508,323	9,618,757	1.9%
2019	514,147,824	516,585,739	2,437,915	0.5%
2020		513,771,071		
2021		512,910,056		
Total to 2019	2,577,046,548	2,577,046,548	0	
		3,603,727,675	0	

20 year trend numbers:

Jan-21	936	0	31	0	54,170,642		
Feb-21	820	0	28	0	49,032,452		
Mar-21	726	0	31	1	47,471,226		
Apr-21	463	0	30	1	40,849,477		
May-21	212	8	31	1	37,115,087		
Jun-21	79	20	30	0	36,647,294		
Jul-21	22	60	31	0	40,728,713		
Aug-21	37	37	31	0	38,509,357		
Sep-21	135	15	30	1	35,344,655		
Oct-21	342	0	31	1	39,086,911		
Nov-21	574	0	30	1	43,284,358		
Dec-21	793	0	31	0	51,032,905		
	5,140	141			513,273,076	363,020	0.07%

Use 10 yr average of heating and cooling degree days and recalc the model for historical period.

	Purchased	Heating Degree Days	Cooling Degree Days	Number of Days in Month	Spring Fall Flag	Predicted Purchases	Variances (kWh)	% Variance - Absolute
Jan-15	60,955,014	935	0	31	0	54,149,214	-6,805,801	11.2%
Feb-15	56,605,601	815	0	28	0	48,920,756	-7,684,845	13.6%
Mar-15	52,369,681	709	0	31	1	47,098,285	-5,271,396	10.1%
Apr-15	42,936,932	461	0	30	1	40,802,104	-2,134,828	5.0%
May-15	38,321,444	200	10	31	1	36,988,362	-1,333,082	3.5%
Jun-15	37,322,701	79	18	30	0	36,457,411	-865,290	2.3%
Jul-15	41,173,436	22	64	31	0	41,087,589	-85,846	0.2%
Aug-15	40,113,558	35	40	31	0	38,787,475	-1,326,083	3.3%
Sep-15	39,126,212	140	16	30	1	35,496,720	-3,629,492	9.3%
Oct-15	40,715,709	338	0	31	1	39,003,200	-1,712,509	4.2%
Nov-15	42,394,599	569	0	30	1	43,159,605	765,006	1.8%
Dec-15	46,288,309	790	0	31	0	50,959,338	4,671,029	10.1%
Jan-16	53,275,790	935	0	31	0	54,149,214	873,424	1.6%
Feb-16	50,185,520	815	0	29	0	49,781,770	-403,750	0.8%
Mar-16	45,995,357	709	0	31	1	47,098,285	1,102,927	2.4%
Apr-16	41,316,027	461	0	30	1	40,802,104	-513,923	1.2%
May-16	36,199,389	200	10	31	1	36,988,362	788,972	2.2%
Jun-16	36,570,355	79	18	30	0	36,457,411	-112,944	0.3%
Jul-16	40,114,787	22	64	31	0	41,087,589	972,803	2.4%
Aug-16	41,396,575	35	40	31	0	38,787,475	-2,609,100	6.3%
Sep-16	36,257,722	140	16	30	1	35,496,720	-761,003	2.1%
Oct-16	38,047,288	338	0	31	1	39,003,200	955,912	2.5%
Nov-16	40,688,065	569	0	30	1	43,159,605	2,471,540	6.1%
Dec-16	48,940,750	790	0	31	0	50,959,338	2,018,588	4.1%
Jan-17	50,172,295	935	0	31	0	54,149,214	3,976,918	7.9%
Feb-17	44,767,408	815	0	28	0	48,920,756	4,153,347	9.3%
Mar-17	48,902,657	709	0	31	1	47,098,285	-1,804,372	3.7%
Apr-17	38,767,221	461	0	30	1	40,802,104	2,034,883	5.2%
May-17	36,984,603	200	10	31	1	36,988,362	3,758	0.0%
Jun-17	35,651,142	79	18	30	0	36,457,411	806,269	2.3%
Jul-17	38,088,069	22	64	31	0	41,087,589	2,999,520	7.9%
Aug-17	36,767,307	35	40	31	0	38,787,475	2,020,168	5.5%
Sep-17	36,665,580	140	16	30	1	35,496,720	-1,168,860	3.2%
Oct-17	37,361,044	338	0	31	1	39,003,200	1,642,155	4.4%
Nov-17	43,727,237	569	0	30	1	43,159,605	-567,632	1.3%
Dec-17	52,843,775	790	0	31	0	50,959,338	-1,884,438	3.6%
Jan-18	55,165,428	935	0	31	0	54,149,214	-1,016,215	1.8%
Feb-18	46,543,673	815	0	28	0	48,920,756	2,377,083	5.1%
Mar-18	46,187,501	709	0	31	1	47,098,285	910,784	2.0%
Apr-18	42,016,294	461	0	30	1	40,802,104	-1,214,191	2.9%
May-18	36,563,258	200	10	31	1	36,988,362	425,103	1.2%
Jun-18	35,697,073	79	18	30	0	36,457,411	760,337	2.1%
Jul-18	42,293,825	22	64	31	0	41,087,589	-1,206,236	2.9%
Aug-18	40,093,009	35	40	31	0	38,787,475	-1,305,534	3.3%
Sep-18	35,816,190	140	16	30	1	35,496,720	-319,471	0.9%
Oct-18	39,622,118	338	0	31	1	39,003,200	-618,918	1.6%
Nov-18	44,982,862	569	0	30	1	43,159,605	-1,823,257	4.1%
Dec-18	49,908,333	790	0	31	0	50,959,338	1,051,005	2.1%
Jan-19	56,704,516	935	0	31	0	54,149,214	-2,555,302	4.5%
Feb-19	49,050,451	815	0	28	0	48,920,756	-129,696	0.3%
Mar-19	48,618,580	709	0	31	1	47,098,285	-1,520,295	3.1%
Apr-19	40,799,606	461	0	30	1	40,802,104	2,498	0.0%
May-19	36,697,206	200	10	31	1	36,988,362	291,155	0.8%
Jun-19	35,140,288	79	18	30	0	36,457,411	1,317,122	3.7%
Jul-19	42,388,534	22	64	31	0	41,087,589	-1,300,945	3.1%
Aug-19	37,599,279	35	40	31	0	38,787,475	1,188,196	3.2%
Sep-19	33,915,685	140	16	30	1	35,496,720	1,581,035	4.7%
Oct-19	37,837,876	338	0	31	1	39,003,200	1,165,324	3.1%
Nov-19	45,382,225	569	0	30	1	43,159,605	-2,222,620	4.9%
Dec-19	50,013,578	790	0	31	0	50,959,338	945,760	1.9%
							-11,635,252	3.7%

SUMMARY OUTPUT

Regression Statistics

Multiple R	97.8%
R Square	95.7%
Adjusted R Square	95.4%
Standard Error	1380193.748
Observations	60

ANOVA

	df	SS	MS	F	Significance F
Regression	4	2.34153E+15	5.85382E+14	307.2976	6.44E-37
Residual	55	1.04771E+14	1.90493E+12		
Total	59	2.4463E+15			

Coefficients

	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%	
Intercept	6,937,297.49	6820540.926	1.02	0.313551	-6731372	20605967	-6731372	20605967
Heating Degree Days	21,936.36	748.3998163	29.31	2.99E-35	20436.53	23436.19	20436.53	23436.19
Cooling Degree Days	109,601.55	12298.27701	8.91	2.92E-12	84955.25	134247.8	84955.25	134247.8
Number of Days in Month	861,014.17	224866.4481	3.83	0.000332	410371.7	1311657	410371.7	1311657
Spring Fall Flag	(2,083,215.39)	407542.1822	(5.11)	4.16E-06	-2899948	-1266483	-2899948	-1266483

Month	10 year av	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2015	2016	2017	2018	2019	Actual	VAR					
	935	0												512,910,056	513,771,071	512,910,056	512,910,056	512,910,056	492,335,278	516,728,999					
	815	0																			(24,393,721)				
	709	0																							
	461	0																							
	200	10																							
	79	18																							
	22	64																							
	35	40																							
	140	16																							
	338	0																							
	569	0																							
	790	0																							

Scale down by in year loss factor

Actual

VAR

NB: this makes sense since other variable are static

Purchases	Modeled Purchases	Difference	% Difference	Loss Factor	Total Billed	Residential	General Service < 50 kW	General Service 50 to 2999 kW	General Service 3000 to 4999 kW	Street Lighting	Sentinel Lighting	Unmetered Scattered Load		
Weather Normal Projection														
0	0	0	#DIV/0!	0.0000	577,056,180	213,809,355	91,284,158	210,628,245	57,056,736	3,289,523	616,682	371,482	358,969,138	
0	0	0	#DIV/0!	0.0000	560,321,499	207,199,584	90,175,438	207,117,428	51,603,012	3,278,340	577,963	369,735	348,895,877	
0	0	0	#DIV/0!	0.0000	570,440,204	213,131,701	89,681,002	213,456,497	49,926,708	3,306,186	568,496	369,615	353,064,207	
0	0	0	#DIV/0!	0.0000	567,021,540	213,813,392	88,723,631	215,710,011	44,528,104	3,327,501	567,633	351,268	348,961,746	
2009	580,320,683	0	(580,320,683)	-100.0%	1.0496	552,881,331	213,412,762	87,404,596	210,054,006	37,817,392	3,322,759	557,946	311,871	335,275,994
2010	592,105,954	0	(592,105,954)	-100.0%	1.0448	566,701,778	206,535,118	85,042,099	230,037,737	41,028,104	3,324,190	569,408	165,123	356,107,940
2011	593,738,608	0	(593,738,608)	-100.0%	1.0510	564,905,304	207,358,082	85,023,144	231,667,366	37,086,852	3,204,123	481,664	84,073	353,777,362
2012	572,612,693	0	(572,612,693)	-100.0%	1.0443	548,341,092	200,614,424	84,948,671	223,698,453	35,722,772	2,790,238	487,759	88,774	344,359,895
2013	573,172,085	0	(573,172,085)	-100.0%	1.0456	548,196,762	207,806,639	85,119,331	216,614,454	35,775,036	2,348,268	443,951	89,084	337,508,820
2014	561,189,732	0	(561,189,732)	-100.0%	1.0431	537,983,046	205,950,080	85,369,055	217,236,187	26,926,556	2,026,566	423,993	50,610	329,531,798
2015	538,323,196	514,903,442	(23,419,754)	-4.4%	1.0418	516,728,999	196,730,101	83,568,206	216,238,874	17,738,636	2,036,369	373,880	42,934	317,545,716
2016	508,987,624	513,927,827	4,940,202	1.0%	1.0414	488,765,497	188,194,722	80,643,103	200,880,475	16,805,472	2,042,502	156,291	42,934	298,329,049
2017	500,698,339	507,121,219	6,422,880	1.3%	1.0379	482,398,546	184,546,623	78,774,627	200,346,165	16,522,752	2,036,369	129,076	42,934	295,643,545
2018	514,889,565	524,508,323	9,618,757	1.9%	1.0360	496,980,971	196,784,130	81,814,082	199,998,668	16,185,720	2,031,595	124,703	42,073	297,998,470
2019	514,147,824	516,585,739	2,437,915	0.5%	1.0371	495,761,810	197,847,018	80,410,230	199,953,324	15,352,960	2,036,369	122,420	39,490	295,716,514
2020	0	513,771,071			494,560,346	USING 5 YR								
2021	0	512,910,056			493,731,527	USING 5 YR								
Average - 2 year					1.0366									
Approved Loss Factor					1.0471		43%							
Usage Per Customer				5 year average	1.0388									
2009						10,236	33,246	766,620	18,908,696	596	1,077	14,851		
2010						9,858	32,299	855,159	20,514,052	597	1,119	8,691		
2011						9,829	32,414	864,430	18,543,426	575	1,016	4,671		
2012						9,520	32,117	880,663	17,861,386	501	1,091	5,222		
2013						9,845	32,133	849,468	17,887,518	421	1,040	5,939		
2014						9,753	32,130	862,048	13,463,278	374	993	4,601		
2015						9,314	31,583	851,334	17,738,636	376	930	4,293	8,874	
2016						8,888	30,328	793,994	16,805,472	377	352	4,293	30,092	
2017						8,708	29,693	767,610	16,522,752	375	296	4,293	81,144	
2018						9,270	30,827	775,189	16,185,720	375	293	4,207	30,613	
2019						9,297	30,309	760,279	15,352,960	375	294	4,388	30,417	
2020						9,436	30,303	749,362	14,897,244	375	294	4,388	30,708	
2021						9,580	30,296	738,601	14,455,054	375	294	4,388	772,208	
2010						0.9631	0.9715	1.1155	1.0849	1.0003	1.0386	0.5852		
2011						0.9971	1.0036	1.0108	0.9039	0.9635	0.9084	0.5374		
2012						0.9685	0.9908	1.0168	0.9632	0.8708	1.0738	1.1160		
2013						1.0342	1.0005	0.9646	1.0015	0.8416	0.9528	1.1373		
2014						0.9906	0.9999	1.0148	0.7527	0.8877	0.9550	0.7747		
2015						0.9550	0.9830	0.9876	1.3176	1.0043	0.9366	0.9332		
2016						0.9543	0.9603	0.9326	0.9474	1.0026	0.3785	1.0000		
2017						0.9797	0.9790	0.9668	0.9832	0.9970	0.8410	1.0000		
2018						1.0645	1.0382	1.0099	0.9796	0.9977	0.9911	0.9799		
2019						1.0030	0.9832	0.9808	0.9485	1.0023	1.0005	1.0429		
Used						1.0151	0.9998	0.9856	0.9703	0.9990	0.9413	1.0073		
Geo Mean						1.0151	0.9998	0.9856	0.9703	0.9990	0.9413	1.0073	Using 3 years	
Non Weather Corrected Forecast														
2020					497,930,979	201,175,247	80,332,664	199,330,187	14,897,244	2,036,369	119,778	39,490		
2021					500,146,068	204,558,882	80,255,128	198,683,716	14,455,054	2,036,369	117,430	39,490		
Weather Corrected Forecast														
2020					494,560,346	199,682,217	79,636,964	195,503,598	14,897,244	2,036,369	119,778	39,490	Total CEP	
2021					493,731,527	201,705,111	79,035,853	193,697,533	14,455,054	2,036,369	117,430	39,490	491,915,659 491,086,840	
hydro one cost allocation file - load data file 18														
% Weather Sensitive						91%	91%	82%	0%	0%	0%	0%	Total	
2020					-3,370,632	183,069,475	73,102,724	162,693,298	0	0	0	0	418,865,498	
2021					-6,414,541	186,148,583	73,032,166	162,165,649	0	0	0	0	421,346,398	
Allocation of Weather Sensitive Amount														
2020						-1,473,170	-588,261	-1,309,201	0	0	0	0	-3,370,632	
2021						-2,833,910	-1,111,835	-2,468,796	0	0	0	0	-6,414,541	
CEP / 2019LRAM REDUCTION														
2020						19,861	107,439	2,517,387					2,644,687	
2021						19,861	107,439	2,517,387					2,644,687	

Weather Normalized - 10yr			
Residential	General Service < 50 kW	General Service 50 to 2999 kW	
187,442,874	79,623,121	206,030,678	
189,963,368	81,400,983	202,768,342	
189,047,599	80,695,891	205,232,482	
196,027,587	81,499,545	199,229,767	
197,370,718	80,216,649	199,471,953	

General Service 3000 to 4999		Unmetered		Total
KW	Street Lighting	Sentinel Lighting	Scattered Load	
16,901,231	1,940,236	356,230	40,907	492,335,278
16,963,409	2,061,697	157,760	43,337	493,358,897
16,925,731	2,086,034	132,224	43,981	494,163,943
16,123,493	2,023,785	124,224	41,911	495,070,312
15,315,999	2,031,466	122,126	39,395	494,568,306
16,901,231	358	886	4,091	16,490
16,963,409	380	355	4,334	16,465
16,925,731	385	303	4,398	16,485
16,123,493	373	292	4,191	16,502
15,315,999	375	293	4,377	16,460

Using 12 month avg. customer #

	<u>Residential</u>	<u>General Service < 50 kW</u>	<u>General Service 50 to 2999 kW</u>	<u>General Service 3000 to 4999 kW</u>	<u>Street Lighting</u>	<u>Sentinel Lighting</u>	<u>Unmetered Scattered Load</u>	<u>Total</u>	
1999	19,386	2,489	219	3	5,000	579	21	27,697	2,732
2000	19,468	2,499	229	3	5,139	579	21	27,938	2,752
2001	19,645	2,555	244	3	5,139	579	21	28,186	2,823
2002	19,973	2,562	255	3	5,287	579	21	28,680	2,817
2003	19,862	2,568	253	2	5,277	641	21	28,624	2,821
2004	19,966	2,598	253	2	5,508	574	21	28,922	2,851
2005	20,125	2,595	255	2	5,534	555	21	29,087	2,850
2006	20,555	2,678	258	2	5,510	606	21	29,630	2,936
2007	20,726	2,626	267	2	5,534	577	21	29,753	2,893
2008	20,757	2,616	273	2	5,550	521	21	29,740	2,889
2009	20,850	2,629	274	2	5,571	518	21	29,865	2,903
2010	20,952	2,633	269	2	5,572	509	19	29,956	2,902
2011	21,096	2,623	268	2	5,574	474	18	30,055	2,891
2012	21,074	2,645	254	2	5,574	447	17	30,013	2,899
2013	21,108	2,649	255	2	5,574	427	15	30,030	2,904
2014	21,117	2,657	252	2	5,419	427	11	29,885	2,909
2015	21,122	2,646	254	1	5,422	402	10	29,857	2,900
2016	21,173	2,659	253	1	5,424	444	10	29,964	2,912
2017	21,192	2,653	261	1	5,424	436	10	29,977	2,914
2018	21,229	2,654	258	1	5,424	425	10	30,001	2,912
2019	21,280	2,653	263	1	5,424	417	9	30,047	2,916
2020	21,316	2,651	266	1	5,424	408	9	30,075	2,917
2021	21,352	2,649	269	1	5,424	400	9	30,104	2,918

Growth Rate in Customer Numbers

2000	1.0042	1.0040	1.0457	1.0000	1.0278	1.0000	1.0000
2001	1.0091	1.0224	1.0655	1.0000	1.0000	1.0000	1.0000
2002	1.0167	1.0027	1.0451	1.0000	1.0288	1.0000	1.0000
2003	0.9944	1.0023	0.9922	0.6667	0.9981	1.1071	1.0000
2004	1.0052	1.0117	1.0000	1.0000	1.0438	0.8955	1.0000
2005	1.0080	0.9988	1.0079	1.0000	1.0047	0.9669	1.0000
2006	1.0214	1.0320	1.0118	1.0000	0.9957	1.0919	1.0000
2007	1.0083	0.9806	1.0349	1.0000	1.0044	0.9521	1.0000
2008	1.0015	0.9962	1.0225	1.0000	1.0029	0.9029	1.0000
2009	1.0045	1.0050	1.0037	1.0000	1.0038	0.9942	1.0000
2010	1.0049	1.0015	0.9818	1.0000	1.0002	0.9826	0.9048
2011	1.0069	0.9962	0.9963	1.0000	1.0004	0.9312	0.9474
2012	0.9990	1.0084	0.9478	1.0000	1.0000	0.9430	0.9444
2013	1.0016	1.0015	1.0039	1.0000	1.0000	0.9553	0.8824
2014	1.0004	1.0030	0.9882	1.0000	1.0000	1.0000	0.7333
2015	1.0002	0.9959	1.0079	1.0000	1.0000	0.9415	0.9091
2016	1.0024	1.0049	0.9961	1.0000	1.0000	1.1045	1.0000
2017	1.0009	0.9977	1.0316	1.0000	1.0000	0.9820	1.0000
2018	1.0017	1.0004	0.9885	1.0000	1.0000	0.9748	1.0000
2019	1.0024	0.9996	1.0194	1.0000	1.0000	0.9812	0.9000

Used	1.0017	0.9992	1.0130	1.0000	1.0000	0.9793	1.0000
Geomean	1.0017	0.9992	1.0130	1.0000	1.0000	0.9793	0.9655
Arithmetic Mean	1.0021	1.0000	1.0039	1.0000	1.0000	0.9780	0.9500
	-0.0004	-0.0008	0.0091	0.0000	0.0000	0.0013	0.0155

Rate Class Customer Model

	General Service 50 to 2999 kW	General Service 3000 to 4999 kW	Street Lighting	Sentinel Lighting	Total
1999	604,561	200,911	8,604	1,469	815,546
2000	615,897	210,331	8,005	1,026	835,259
2001	618,480	182,444	8,801	1,013	810,738
2002	599,393	116,995	8,806	1,495	726,689
2003	593,814	107,185	9,600	1,608	712,207
2004	590,317	109,316	9,618	1,735	710,986
2005	613,160	109,680	9,192	1,704	733,735
2006	602,160	96,180	9,192	1,595	709,127
2007	604,780	95,580	9,239	1,543	711,141
2008	602,776	88,904	9,270	1,531	702,481
2009	584,819	79,624	9,285	1,506	675,234
2010	588,203	78,060	9,285	1,541	677,089
2011	582,946	70,473	9,042	1,287	663,748
2012	540,969	68,480	7,788	1,601	618,838
2013	535,313	69,448	6,559	1,224	612,544
2014	533,378	54,355	5,677	1,179	594,589
2015	537,898	39,466	5,690	1,034	584,088
2016	529,360	35,717	5,690	406	571,174
2017	528,741	30,516	5,690	330	565,277
2018	522,247	30,271	5,690	316	558,525
2019	523,294	29,275	5,690	310	558,570
2020	516,927	27,927	5,690	304	552,849
2021	514,190	27,098	5,690	298	547,277

2020	526,475	28,782	5,690	304	PRIOR TO CEP/LRAM REDUCTION
2021	528,913	28,782	5,690	298	PRIOR TO CEP/LRAM REDUCTION
2020	519,873	28,782	5,690	304	AFTER CEP
2021	522,311	28,782	5,690	298	AFTER CEP
2020 VAR	6,602	-	-	-	
2021 VAR	6,602	-	-	-	
MANUAL Re	382				
MANUAL Re	382				

NB: Manual reduction from LRAM FILE

kW/kWh				
2005	0.2911%	0.1922%	0.2794%	0.2763%
2006	0.2907%	0.1864%	0.2804%	0.2759%
2007	0.2833%	0.1914%	0.2794%	0.2714%
2008	0.2794%	0.1997%	0.2786%	0.2696%
2009	0.2784%	0.2105%	0.2794%	0.2699%
2010	0.2557%	0.1903%	0.2793%	0.2706%
2011	0.2516%	0.1900%	0.2822%	0.2671%
2012	0.2418%	0.1917%	0.2791%	0.3282%
2013	0.2471%	0.1941%	0.2793%	0.2757%
2014	0.2455%	0.2019%	0.2801%	0.2780%
2015	0.2488%	0.2225%	0.2794%	0.2765%
2016	0.2635%	0.2125%	0.2786%	0.2598%
2017	0.2639%	0.1847%	0.2794%	0.2555%
2018	0.2611%	0.1870%	0.2801%	0.2532%
2019	0.2617%	0.1907%	0.2794%	0.2535%

Used 0.2622% 0.1875% 0.2794% 0.2540%

Average 0.2622% 0.1875% 0.2797% 0.2540% average is 2017 - 2019 - 3 year average

CoS 0.2622% 0.1875% 0.2797% 0.2540%

NOTES:

Prior App incorporated CoGen at NBHRC

10year Avg 0.2541% 0.1965% 0.2797% 0.2718%

Weather Normalized - 10yr General Service 50 to 2999 kW	General Service 3000 to 4999 kW	Street Lighting	Sentinel Lighting		
523,492	33,217	5,427	968	563,105	
515,203	33,340	5,767	429	554,738	
521,464	33,266	5,835	359	560,924	
506,212	31,689	5,661	338	543,899	
506,827	30,102	5,682	332	542,943	

HDD	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	10 year Avg	20 yr trend
Jan	887	984	855	893	1,025	1,065	882	800	922	1,042	935	936
Feb	753	798	718	801	883	1,041	857	730	756	811	815	820
Mar	501	742	510	685	880	801	681	798	717	770	709	726
Apr	315	444	426	496	483	439	545	397	584	484	461	463
May	148	175	138	199	200	191	207	256	196	288	200	212
Jun	71	66	51	103	53	101	90	86	78	92	79	79
Jul	11	3	2	39	58	37	29	30	8	7	22	22
Aug	29	17	27	49	60	30	13	65	16	43	35	37
Sep	177	116	163	182	157	72	102	121	150	155	140	135
Oct	370	295	331	322	342	380	311	252	432	348	338	342
Nov	526	465	550	626	643	436	472	621	672	678	569	574
Dec	813	751	771	964	711	565	783	971	797	775	790	793
	4,601.60	4,856.00	4,541.30	5,359.05	5,494.00	5,158.05	4,971.40	5,126.05	5,325.60	5,494.05	5,093	5,140

CDD												
Jan	-	-	-	-	-	-	-	-	-	-	-	-
Feb	-	-	-	-	-	-	-	-	-	-	-	-
Mar	-	-	1	-	-	-	-	-	-	-	0	0
Apr	0	-	-	-	-	-	-	-	-	-	0	0
May	29	7	14	10	1	8	12	1	15	-	10	8
Jun	7	22	49	15	24	2	22	14	17	7	18	20
Jul	90	85	78	53	18	55	58	31	95	74	64	60
Aug	70	46	45	23	16	45	69	13	55	18	40	37
Sep	12	18	12	2	5	43	12	30	24	2	16	15
Oct	-	2	-	-	-	-	2	-	-	-	0	0
Nov	-	-	-	-	-	-	-	-	-	-	-	-
Dec	-	-	-	-	-	-	-	-	-	-	-	-
	208.30	179.80	199.20	102.60	64.30	152.70	173.30	88.10	206.80	100.80	148	141