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LOAD AND REVENUE FORECAST

This Exhibit provides the details of North Bay Hydro Distribution Ltd's ("NBHDL") operating revenue for 2010 Board Approved, 2010 Actual, 2011 Actual, 2012 Actual, 2013 Actual, the 2014 Bridge Year ("Bridge Year") and the 2015 Test Year ("Test Year"). This Exhibit also provides a detailed variance analysis by rate classification of the operating revenue components. Distribution revenue excludes revenue from commodity sales.

NBHDL is proposing a total Service Revenue Requirement of \$13,848,941 for the 2015 Test Year. This amount includes a Base Revenue Requirement of \$12,695,006 plus revenue offsets of \$1,153,934 to be recovered through Other Revenue.

Other Revenue include Late Payment charges, Specific Service charges, Rent from Electric Property, Miscellaneous Service revenues, Standard Supply Service ("SSS") Administrative charges and Interest. A summary of these operating revenues together is presented with a materiality analysis of variances is presented in Table 3-36.

The following Table 3-1 summarizes NBHDL's total operating revenue. Revenue for each of the actual years is from NBHDL's audited Financial Statements which reconcile to the annual filings with the OEB. The Bridge Year is comprised of actual revenue from January to June, 2014. The remainder of the year is based on a six month projection of distribution revenue from existing distribution rates and other distribution revenue. The Test Year distribution revenue is provided on the basis of both existing and proposed distribution rates. Revenue for the GS>50 kW and Intermediate rate classes is net of transformer allowance credits to eligible customers within these rate classes.

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Table 3-1 Summary of Operating Revenue

Description	2010 Board Approved	2010 Actual	2011 Actual	2012 Actual	2013 Actual	2014 Bridge	2015 Test - Existing Rates	2015 Test - Proposed Rates
<u>Distribution Revenues</u>								
Residential	6,302,766	5,987,720	6,235,135	6,198,440	6,396,433	8,134,791	6,507,041	7,488,001
General Service < 50 kW	2,114,489	2,046,607	2,121,536	2,098,393	2,163,428	2,549,242	2,132,984	2,454,539
General Service 50 to 2999 kW	2,430,269	2,268,244	2,154,808	1,937,243	1,946,014	1,979,019	1,799,848	2,103,877
General Service 3000 to 4999 kW	114,986	78,770	102,855	158,971	168,826	97,941	86,464	99,498
Street Lighting	284,721	222,314	383,351	476,760	580,924	506,731	464,713	502,662
Sentinel Lighting	35,621	32,902	36,752	55,522	40,859	45,561	39,410	45,351
Unmetered Scattered Load	11,495	5,090	2,746	3,011	2,668	2,187	1,447	1,078
Distribution Revenue	11,294,345	10,641,646	11,037,183	10,928,339	11,299,150	13,315,470	11,031,906	12,695,006
<u>Other Revenue</u>								
Late Payment Charges	137,700	160,010	143,942	130,386	125,518	136,983	136,983	136,983
Specific Service Charges	320,753	475,396	541,103	614,482	582,708	597,175	578,856	578,856
Other Distribution Revenue	259,940	245,884	289,958	280,590	282,391	282,414	282,042	282,042
Other Income and Expenses	112,223	82,487	200,993	558,239	387,748	503,377	156,053	156,053
Other Revenue	830,616	963,777	1,175,997	1,583,696	1,378,365	1,519,950	1,153,934	1,153,934
Total Operating Revenue	12,124,961	11,605,423	12,213,179	12,512,035	12,677,515	14,835,420	12,185,840	13,848,941

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SUMMARY OF LOAD AND CUSTOMER/CONNECTION FORECAST

The purpose of this evidence is to present the process used by NBHDL to prepare the weather normalized load and customer/connection forecast used to design the proposed 2015 distribution rates.

In summary, as a starting point NBHDL used the same regression analysis methodology approved by the Ontario Energy Board (the "Board") in its 2010 Cost of Service ("COS") application (EB-2009-0270) and updated the analysis for actual power purchases to the end of the 2013. As described below, the updated regression analysis excluded some variables used in the 2010 COS application and included a new variable to reflect the local economic conditions of North Bay. The regression analysis used in this application has also been used by a number of distributors in more recent cost of service rate applications to determine a prediction model. With regard to the overall process of load forecasting, NBHDL believes that conducting a regression analysis on historical electricity purchases to produce an equation that will predict purchases is appropriate. NBHDL has the data for the amount of electricity (in kWh) purchased from the IESO for use by NBHDL's customers. With a regression analysis, these purchases can be related to other monthly explanatory variables such as heating degree days and cooling degree days which occur in the same month. The results of the regression analysis produce an equation that predicts the purchases based on the explanatory variables. This prediction model is then used as the basis to forecast the total level of weather normalized purchases for the Bridge Year and the Test Year which is converted to billed kWh by rate class. A detailed explanation of the process is provided later in this evidence.

During the review process of previous COS applications, for other applicants, Intervenor expressed concerns with the load forecasting weather process being used in this application. Intervenor suggested the weather normalization should be conducted on an individual rate class basis and the regression analysis would be based on monthly consumed kWh by rate class. NBHDL reviewed the data required to conduct the regression analysis on an individual rate class basis and determined that it currently does not have a method to properly convert historical billing data to monthly consumed values by rate class. With the installation of smart meters it is possible to determine the amount consumed in a month but this would only provide historical data from 2011 onwards. Since NBHDL has monthly purchase data from 1999 onward, NBHDL believes conducting the regression analysis on purchases provides better results since a higher level of historical data increases the accuracy of the regression analysis.

In addition, Board staff and Intervenor expressed concern that the regression analysis assigned coefficients to some variables that were counter intuitive. For example, the customer variable would have a negative coefficient assigned to it which meant as the number of customers increased the energy forecast would decreased. Further, the regression analysis indicated that some of the variables used in the load forecasting formula were not statistically significant and should not have been included in the equation. As mentioned above, NBHDL used the regression analysis used to support the load forecast in the 2010 COS application as a starting point and addressed these concerns in the load forecast used in this Application. As a result, variables such as Ontario

1 Monthly Real GDP, Population and Number of Peak Hours were tested but not used. Ontario Monthly Real GDP
2 was not statistically significant. Population had a counter intuitive coefficient and was not statistically significant.
3 Number of Peak Hours had an intuitive coefficient and was statistically significant however including this variable
4 caused an immaterial difference in the 2014 load forecast of less than 0.04%. In addition, the R-square and the
5 Adjusted R-square remained at around 98% with and without the Number of Peak Hours variable. As a result,
6 NBHDL eliminated this variable since it had very minimal impact on the overall 2014 load forecast and it did not
7 improve the accuracy of the prediction model.

8 Based on the Board's approval of this methodology in a number of previous cost of service applications as well as
9 the discussion that follows, NBHDL submits the load forecasting methodology is reasonable at this time for the
10 purposes of this Application.

11 The following provides the material to support the weather normalized load forecast used by NBHDL in this
12 Application.

13

Table 3-2, Table 3-3 and Table 3-4 below provide a summary of the weather normalized load and customer/connection forecast used in this Application.

Table 3-2 Summary of Load and Customer/Connection Forecast

Year	Billed (GWh)	Growth (GWh)	Percent Change	Customer/ Connection Count	Growth	Percent Change (%)
Billed Energy (GWh) and Customer Count / Connections						
2010 Board Approved	563.7			30,218		
1999 Actual	552.2			27,697		
2000 Actual	560.8	8.6	1.6%	27,938	241.0	0.9%
2001 Actual	558.6	(2.2)	(0.4%)	28,186	248.0	0.9%
2002 Actual	561.7	3.0	0.5%	28,680	494.0	1.8%
2003 Actual	562.5	0.9	0.2%	28,624	(56.0)	(0.2%)
2004 Actual	566.9	4.4	0.8%	28,922	298.0	1.0%
2005 Actual	577.1	10.1	1.8%	29,087	165.0	0.6%
2006 Actual	560.3	(16.7)	(2.9%)	29,630	543.0	1.9%
2007 Actual	570.4	10.1	1.8%	29,753	123.0	0.4%
2008 Actual	567.0	(3.4)	(0.6%)	29,740	(13.0)	(0.0%)
2009 Actual	552.9	(14.1)	(2.5%)	29,865	125.0	0.4%
2010 Actual	566.7	13.8	2.5%	29,956	91.0	0.3%
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 Bridge - Normalized	536.5	(11.7)	(2.1%)	29,858	(172.4)	(0.6%)
2015 Test - Normalized	516.6	(19.8)	(3.7%)	29,849	(8.6)	(0.0%)

In the above Table 3-2, 1999 to 2013 are reflecting actual weather conditions in the year. The years 2014 and 2015 are weather normalized. It is NBHDL's understanding that there is not a Board approved method to weather normalize actual data. Consequently, NBHDL does not have a process to adjust weather actual data to a weather normal basis. However, based on the process outlined in this Exhibit 3, a process to forecast energy on a weather normalized basis has been developed and used in this application.

Customer/Connection values are on a 12 month average basis and street lights, sentinel lights and unmetered loads are measured as connections.

On a rate class basis, the actual and forecasted billed amounts as well as the actual and forecasted number of customers/connections are shown in Table 3-3 and customer/connection usage is shown in Table 3-4.

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Table 3-3 Billed Energy and Number of Customers/Connections by Rate Class

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)								
2010 Board Approved	214.9	85.0	221.4	38.8	2.7	0.5	0.3	563.7
1999 Actual	202.7	93.0	180.5	70.8	3.8	1.0	0.4	552.2
2000 Actual	200.1	93.5	189.7	73.0	3.2	0.8	0.4	560.8
2001 Actual	198.5	92.2	193.6	70.0	3.2	0.8	0.4	558.6
2002 Actual	207.7	89.8	201.0	58.9	3.2	0.7	0.4	561.7
2003 Actual	210.9	89.2	201.6	56.6	3.3	0.6	0.4	562.5
2004 Actual	210.8	90.0	203.3	58.4	3.5	0.6	0.4	566.9
2005 Actual	213.8	91.3	210.6	57.1	3.3	0.6	0.4	577.1
2006 Actual	207.2	90.2	207.1	51.6	3.3	0.6	0.4	560.3
2007 Actual	213.1	89.7	213.5	49.9	3.3	0.6	0.4	570.4
2008 Actual	213.8	88.7	215.7	44.5	3.3	0.6	0.4	567.0
2009 Actual	213.4	87.4	210.1	37.8	3.3	0.6	0.3	552.9
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 Bridge - Normalized	210.7	85.7	210.5	27.1	2.0	0.4	0.0	536.5
2015 Test - Normalized	213.5	86.0	198.1	16.5	2.0	0.4	0.1	516.6

Number of Customers/Connections								
2010 Board Approved	21,075	2,645	287	2	5,680	509	21	30,218
1999 Actual	19,386	2,489	219	3	5,000	579	21	27,697
2000 Actual	19,468	2,499	229	3	5,139	579	21	27,938
2001 Actual	19,645	2,555	244	3	5,139	579	21	28,186
2002 Actual	19,973	2,562	255	3	5,287	579	21	28,680
2003 Actual	19,862	2,568	253	2	5,277	641	21	28,624
2004 Actual	19,966	2,598	253	2	5,508	574	21	28,922
2005 Actual	20,125	2,595	255	2	5,534	555	21	29,087
2006 Actual	20,555	2,678	258	2	5,510	606	21	29,630
2007 Actual	20,726	2,626	267	2	5,534	577	21	29,753
2008 Actual	20,757	2,616	273	2	5,550	521	21	29,740
2009 Actual	20,850	2,629	274	2	5,571	518	21	29,865
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 Bridge - Normalized	21,114	2,662	249	2	5,419	405	7	29,858
2015 Test - Normalized	21,120	2,675	243	1	5,419	384	7	29,849

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Table 3-4 Annual Usage per Customer/Connection by Rate Class

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)							
2010 Board Approved	10,198	32,145	772,365	21,220,490	479	994	16,062
1999 Actual	10,454	37,367	824,067	23,610,566	770	1,647	20,080
2000 Actual	10,278	37,424	828,565	24,339,658	624	1,455	18,535
2001 Actual	10,102	36,090	793,622	23,335,059	614	1,325	18,635
2002 Actual	10,398	35,050	788,257	19,646,519	597	1,194	18,585
2003 Actual	10,618	34,739	796,830	28,283,549	624	927	17,539
2004 Actual	10,558	34,638	803,426	29,191,410	626	1,099	18,469
2005 Actual	10,624	35,177	825,993	28,528,368	594	1,111	17,690
2006 Actual	10,080	33,673	802,781	25,801,506	595	954	17,606
2007 Actual	10,283	34,151	799,463	24,963,354	597	985	17,601
2008 Actual	10,301	33,916	790,147	22,264,052	600	1,090	16,727
2009 Actual	10,236	33,246	766,620	18,908,696	596	1,077	14,851
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	880,663	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 Bridge - Normalized	9,978	32,206	845,259	17,337,916	373	1,052	6,697
2015 Test - Normalized	10,108	32,162	815,273	16,534,810	373	1,064	7,551

Annual Growth Rate in Usage per Customer/Connection							
2010 Board Approved vs 2010 Actual	3.5%	-0.5%	-9.7%	3.4%	-19.7%	-11.2%	84.8%
1999 Actual							
2000 Actual	-1.7%	0.2%	0.5%	3.1%	-18.9%	-11.7%	-7.7%
2001 Actual	-1.7%	-3.6%	-4.2%	-4.1%	-1.5%	-9.0%	0.5%
2002 Actual	2.9%	-2.9%	-0.7%	-15.8%	-2.8%	-9.9%	-0.3%
2003 Actual	2.1%	-0.9%	1.1%	44.0%	4.4%	-22.4%	-5.6%
2004 Actual	-0.6%	-0.3%	0.8%	3.2%	0.4%	18.7%	5.3%
2005 Actual	0.6%	1.6%	2.8%	-2.3%	-5.1%	1.1%	-4.2%
2006 Actual	-5.1%	-4.3%	-2.8%	-9.6%	0.1%	-14.2%	-0.5%
2007 Actual	2.0%	1.4%	-0.4%	-3.2%	0.4%	3.3%	0.0%
2008 Actual	0.2%	-0.7%	-1.2%	-10.8%	0.4%	10.6%	-5.0%
2009 Actual	-0.6%	-2.0%	-3.0%	-15.1%	-0.5%	-1.1%	-11.2%
2010 Actual	-3.7%	-2.9%	11.5%	8.5%	0.0%	3.9%	-41.5%
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 Bridge - Normalized	1.3%	0.2%	-0.5%	-3.1%	-11.6%	1.2%	12.8%
2015 Test - Normalized	1.3%	-0.1%	-3.5%	-4.6%	0.0%	1.2%	12.8%

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FORECAST METHODOLOGY – MULTIVARIATE REGRESSION MODEL

NBHD's weather normalized load forecast is developed in a three-step process. First, a total system weather normalized purchased energy forecast is developed based on multivariate regression model that incorporates historical load, weather, and economic data. Second, the weather normalized purchased energy forecast is adjusted by a historical loss factor to produce a weather normalized billed energy forecast. Finally, the forecast of billed energy by rate class is developed based on a forecast of customer numbers and historical usage patterns per customer. For the rate classes that have weather sensitive load their forecasted billed energy is adjusted to ensure that the total billed energy forecast by rate class is equivalent to the total weather normalized billed energy forecast that has been determined from the regression model. The forecast of customers by rate class is determined using a geometric mean analysis. The forecast is also adjusted for expected Conservation and Demand Management ("CDM") results for 2014 and 2015 as well as the loss of a General Service > 3,000 to 4,999 kW as of June 2014. For those rate classes that use kW for the distribution volumetric billing determinant an adjustment factor is applied to the class energy forecast based on the historical relationship between kW and kWh. The following will explain the forecasting process in more detail.

Purchased KWh Load Forecast

An equation to predict total system purchased energy is developed using a multivariate regression model with the following independent variables: weather (heating and cooling degree days), calendar variables (days in month, seasonal) and local North Bay economic conditions. The regression model uses monthly kWh and monthly values of independent variables from January 1999 to December 2013 to determine the monthly regression coefficients.

Data for NBHD's total system load is available as far back as January 1999. This provides 180 monthly data points which are a reasonable data set for use in a multiple regression analysis. However, with regards to weather normalization, NBHD submits that it is appropriate to review the impact of weather over the past ten years January 2004 to December 2013 since it is consistent with a time period outlined in the filing requirements and it is reflective of more recent weather conditions. The average weather conditions over this period are applied in the prediction formula to determine a weather normalized forecast. In accordance with the filing requirement, NBHD has also provided sensitivity analysis showing the impact on the 2015 forecast of purchases. This analysis assumes weather normal conditions are based on a 20 year trend of weather data.

The multivariate regression model has determined drivers of year-over-year changes in NBHD's load growth are weather, "calendar" factors and local economic conditions. These factors are captured within the multivariate regression model.

1 Weather impacts on load are apparent in both the winter heating season, and in the summer cooling season. For
2 that reason, both Heating Degree Days (i.e. a measure of coldness in winter) and Cooling Degree Days (i.e. a
3 measure of summer heat) are modeled.

5 The second main factor determining energy use in the monthly model can be classified as "calendar factors". For
6 example, the number of days in a particular month will impact energy use. The modeling of purchased energy uses
7 number of days in the month and a "flag" variable to capture the typically lower usage in the spring and fall months.

9 A "North Bay Economy" variable is used to address the slowing economic conditions that occurred in North Bay in
10 2012 and 2013 and are expected to continue in 2014 and 2015. The economies of many municipalities in Northern
11 Ontario were founded on forestry, mining and tourism. With the significant decline in the forestry sector and the
12 globalization of the mining sector the City of North Bay has had to transition its economy to maintain economic
13 prosperity and its population base. According to the City of North Bay (as posted on its official website under
14 Economic Sectors):

16 *"North Bay has a very diversified Industrial Manufacturing/Service base that is characterized as follows: The*
17 *firms focus on small volume, high margin, highly engineered, global markets and serve a customer base in a*
18 *variety of sectors such as Resource, I.T., Telecom, Transportation and Construction. They tend to be a mix of*
19 *both Multi-Nationals and local entrepreneurs with operations ranging in size from 10-350 employees.*

21 *The Commercial base is well established in five primary nodes with a number of secondary nodes that has*
22 *experienced strong but balanced growth. The professional service sector has the depth needed to support the*
23 *business community in areas such as health and security, engineering, finance, education including post*
24 *secondary, and legal."*

26 A service based economy is not energy intensive, therefore with the virtual disappearance of the forestry sector
27 and the decline in values of many minerals mined in Northern Ontario, NBHDL has experienced a consistent
28 decline in electricity sales since the end of 2011. To address this situation, NBHDL has utilized the "North Bay
29 Economy" variable as a value of '0' or '1'. A value of '0' represents normal economic conditions and a value of '1'
30 reflects slower economic conditions. All months from January 1999 to December 2011 were set to '0'. From
31 January 2012 to December 2013 the "North Bay Economy" variable was set to '1' reflecting the economic
32 conditions in those years. In addition, from January 2014 to December 2015 the slower economic conditions are
33 expected to continue resulting in value of '1' for the "North Bay Economy" variable over the forecast period.

35 The following outlines the predication model used by NBHDL to predict weather normal purchases for 2014 and
36 2015.

NBHDL Monthly Predicted kWh Purchases

$$\begin{aligned}
&= \text{Heating Degree Days} * 24,866 \\
&+ \text{Cooling Degree Days} * 82,485 \\
&+ \text{Number of Days in the Month} * 1,154,460 \\
&+ \text{Spring Fall Flag} * (1,825,901) \\
&+ \text{North Bay Economy} * (1,665,589) \\
&+ \text{Constant of } 3,792,126.
\end{aligned}$$

The monthly data used in the regression model and the resulting monthly prediction for the actual and forecasted years are provided in Appendix 3-A.

The sources of data for the various data points are:

- a) Environment Canada website for monthly heating degree days and cooling degree days. Data for the North Bay Airport weather station was used. 18° C is the base numbers from which heating degree days and cooling degree days are measured.
- b) The calendar provided information related to number of days in the month and the spring/fall flag.

The prediction formula has the following statistical results (Table 3-5) which generally indicate the formula has a very good fit to the actual data set.

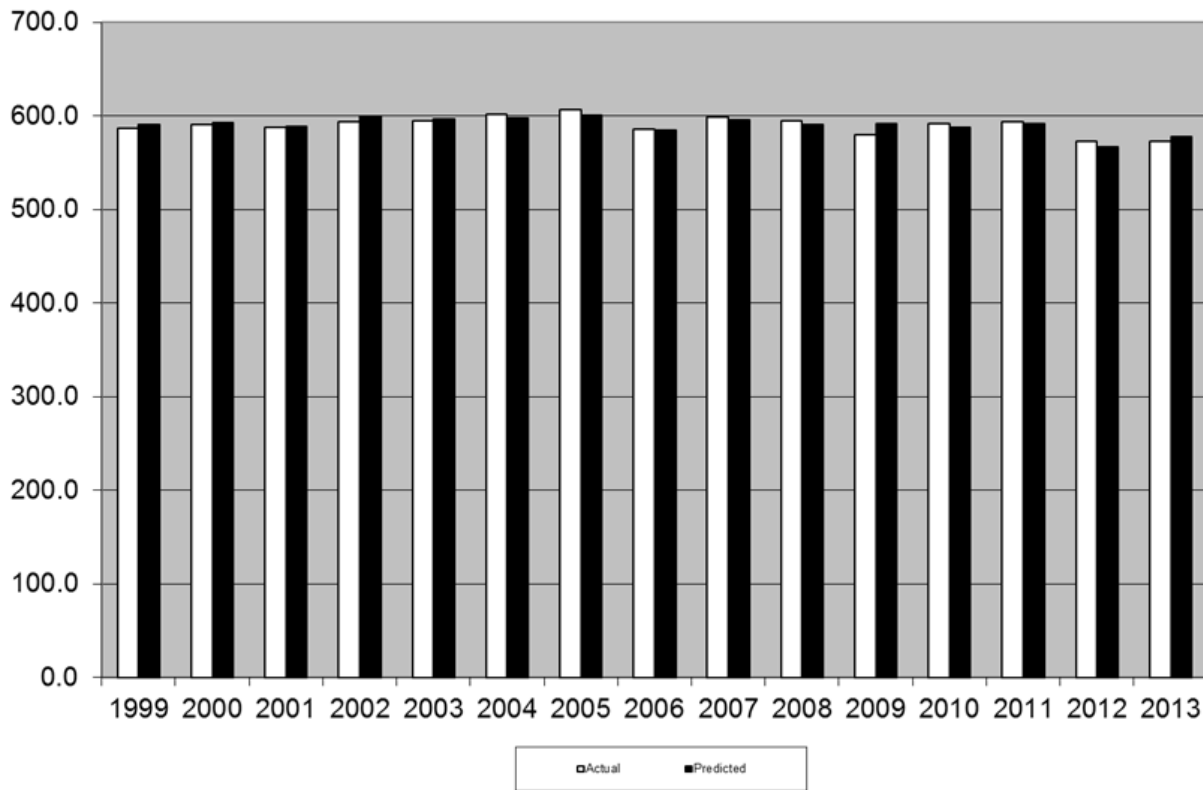
Table 3-5 Statistical Results

Statistic	Value
R Square	97.8%
Adjusted R Square	97.7%
F Test	1522.5
MAPE (Monthly)	1.8%
T-stats by Coefficient	
Heating Degree Days	62.0
Cooling Degree Days	13.3
Number of Days in Month	11.2
Spring Fall Flag	(8.5)
North Bay Economy	(7.1)
Constant	1.2

The annual results of the above prediction formula compared to the actual annual purchases from 1999 to 2013 are shown in Figure 3-1 below.

1

Figure 3-1 Actual vs Predicted Purchases (Millions of kWhs)



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3 Table 3-6 below outlines the data that supports the above chart. In addition, the predicted total system purchases
 4 for NBHDL are provided for 2014 and 2015 on a weather normal basis. In addition, values for 2015 are provided on
 5 a 20 year trend assumption for weather normalization.

1

Table 3-6 Total System Purchase

Year	Actual	Predicted	% Difference
Purchased Energy (GWh)			
1999	586.8	590.5	0.6%
2000	590.8	592.7	0.3%
2001	587.8	588.8	0.2%
2002	593.8	600.2	1.1%
2003	594.6	597.0	0.4%
2004	601.8	597.3	(0.7%)
2005	606.4	600.4	(1.0%)
2006	585.8	584.5	(0.2%)
2007	598.6	595.8	(0.5%)
2008	594.9	591.0	(0.6%)
2009	580.3	591.9	2.0%
2010	592.1	587.5	(0.8%)
2011	593.7	591.5	(0.4%)
2012	572.6	566.4	(1.1%)
2013	573.2	577.7	0.8%
2014 Bridge - Normalized		572.1	
2015 Test - Normalized		572.1	
2015 Test - Normalized - 20 Year Trend		569.7	

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4 The weather normalized amount for 2015 is determined by using 2015 dependent variables in the prediction
5 formula on a monthly basis along with the average monthly heating degree days and cooling degree days which
6 have occurred from January 2004 to December 2013 (i.e. 10 years). The 2015 weather normal 20 year trend value
7 reflects the trend in monthly heating degree days and cooling degree days which have occurred from January 1994
8 to December 2013.

9

10 **Billed KWh Load Forecast**

11

12 To determine the total weather normalized energy billed forecast, the total system weather normalized purchases
13 forecast is adjusted by a historical loss factor. The historical loss factor used is 4.49% which represents the
14 average loss factor for 2012 and 2013. With the downturn in the North Bay economy impacting the energy used in
15 these two years, NBHDL has used the average loss factor for these two years since it is more reflective of what
16 should occur in 2014 and 2015 when the same economic conditions are expected to continue. With this average
17 loss factor the total weather normalized billed energy before adjustment discussed below will be 547.5 (GWh) for
18 2014 and 2015 (i.e. 572.1/1.0449).

19

Billed KWh Load Forecast and Customer/Connection Forecast by Rate Class

Since the total weather normalized billed energy amount is known this amount needs to be distributed by rate class for rate design purposes taking into consideration the customer/connection forecast and expected usage per customer by rate class.

The next step in the forecasting process is to determine a customer/connection forecast. The customer/connection forecast is based on reviewing historical customer/connection data that is available as shown in the following Table 3-7.

Table 3-7 Historical Customer/Connection Data

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								
1999	19,386	2,489	219	3	5,000	579	21	27,697
2000	19,468	2,499	229	3	5,139	579	21	27,938
2001	19,645	2,555	244	3	5,139	579	21	28,186
2002	19,973	2,562	255	3	5,287	579	21	28,680
2003	19,862	2,568	253	2	5,277	641	21	28,624
2004	19,966	2,598	253	2	5,508	574	21	28,922
2005	20,125	2,595	255	2	5,534	555	21	29,087
2006	20,555	2,678	258	2	5,510	606	21	29,630
2007	20,726	2,626	267	2	5,534	577	21	29,753
2008	20,757	2,616	273	2	5,550	521	21	29,740
2009	20,850	2,629	274	2	5,571	518	21	29,865
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

From the historical customer/connection data the growth rate in customer/connection can be evaluated which is provided on the following Table 3-8.

Table 3-8 Growth Rate in Customer/Connections

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							
1999							
2000	0.4%	0.4%	4.6%	0.0%	2.8%	0.0%	0.0%
2001	0.9%	2.2%	6.6%	0.0%	0.0%	0.0%	0.0%
2002	1.7%	0.3%	4.5%	0.0%	2.9%	0.0%	0.0%
2003	(0.6%)	0.2%	(0.8%)	(33.3%)	(0.2%)	10.7%	0.0%
2004	0.5%	1.2%	0.0%	0.0%	4.4%	(10.5%)	0.0%
2005	0.8%	(0.1%)	0.8%	0.0%	0.5%	(3.3%)	0.0%
2006	2.1%	3.2%	1.2%	0.0%	(0.4%)	9.2%	0.0%
2007	0.8%	(1.9%)	3.5%	0.0%	0.4%	(4.8%)	0.0%
2008	0.1%	(0.4%)	2.2%	0.0%	0.3%	(9.7%)	0.0%
2009	0.4%	0.5%	0.4%	0.0%	0.4%	(0.6%)	0.0%
2010	0.5%	0.2%	(1.8%)	0.0%	0.0%	(1.7%)	(9.5%)
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%)
Geo Mean - 2012 & 2013	0.03%	0.5%	(2.5%)	0.0%	0.0%	(5.1%)	(8.7%)

For all classes, except the Street Lighting and Unmetered Scattered Load (“UMSL”) classes, the factor resulting from the geometric mean analysis for 2012 and 2013 is applied to the 2013 customer/connection numbers to determine the forecast of customer/connections in 2014. Except for the General Service 3,000 to 4,999 kW class, the geometric mean factor is applied once again to the 2014 value to determine the 2015 forecast. Similar to calculation of the average loss factor discussed above, NBHDL has used the factor resulting from the geometric mean analysis for 2012 and 2013 which should be more reflective of what is expected to occur in 2014 and 2015 since the slower economic conditions are expected to continue in these years. For the Street Lighting class, the number of connections for 2014 and 2015 has been set at 5,419 reflecting a reduction in the number of street light connections resulting from a Retrofit Program that the City of North Bay undertook from November 2011 through January 2014. The transition to more energy efficient light emitting diode (LED) technology and an upgrade to the entire City street lighting system resulted in better light quality for all roadways with slightly fewer fixtures because of the engineered approach to the retrofit. For the UMSL the number of connections for 2014 and 2015 has been set at 7 representing the actual number of remaining customers in this class. In 2010, one account representing approximately 75% of the UMSL connections was closed. For the General Service 3,000 to 4,999 kW class, the 2015 customer number has been set to 1 reflecting the loss of a customer in this class during 2014. Table 3-9 outlines the forecast of customers by rate class for 2014 and 2015.

Table 3-9 Customer/Connection Forecast

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								
2014	21,114	2,662	249	2	5,419	405	7	29,858
2015	21,120	2,675	243	1	5,419	384	7	29,849

The next step in the process is to review the historical customer/connection usage and to reflect this usage per customer in the forecast. Table 3-10 below provides the average annual usage per customer by rate class from 1999 to 2013.

Table 3-10 Historical Annual Usage per Customer

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							
1999	10,454	37,367	824,067	23,610,566	770	1,647	20,080
2000	10,278	37,424	828,565	24,339,658	624	1,455	18,535
2001	10,102	36,090	793,622	23,335,059	614	1,325	18,635
2002	10,398	35,050	788,257	19,646,519	597	1,194	18,585
2003	10,618	34,739	796,830	28,283,549	624	927	17,539
2004	10,558	34,638	803,426	29,191,410	626	1,099	18,469
2005	10,624	35,177	825,993	28,528,368	594	1,111	17,690
2006	10,080	33,673	802,781	25,801,506	595	954	17,606
2007	10,283	34,151	799,463	24,963,354	597	985	17,601
2008	10,301	33,916	790,147	22,264,052	600	1,090	16,727
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

As can be seen from the above table, usage per customer/connection generally declines after 2005. It is NBHDL's view that this decline is partially due to the CDM programs initiated in 2005 and onwards and changing individual usage caused by a variety of factors including weather and the economy. NBHDL's customer base is also very sensitive to weather, especially during the winter months, with a substantial amount of primary or supplemental electric heating in commercial and industrial facilities throughout the City of North Bay. The increase seen in 2010 in the GS>50 class is due to the new North Bay Regional Health Centre being opened which replaced three older facilities which were closed in following years. The reduction in the GS 3,000 to 4,999 kW is reflective of a downturn two large industrial customers have experienced, along with partial savings resulting from a

real time monitoring program. The street light Retrofit Program was undertaken from November 2011 through January 2014 and the LED technology has resulted in more energy efficient lighting which has resulted in decreased usage per connection. NBHDL worked with the City of North Bay to adjust the load profile as the project was in progress.

From the historical usage per customer/connection data the growth rate in usage per customer/connection can be reviewed which is provided on the following table. The geometric mean growth rate from 2012 and 2013 has also been shown. The 2012 and 2013 period has been used based on the local economic conditions discussed previously.

Table 3-11 Growth Rate in Usage per Customer/Connection

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							
1999							
2000	(1.7%)	0.2%	0.5%	3.1%	(18.9%)	(11.7%)	(7.7%)
2001	(1.7%)	(3.6%)	(4.2%)	(4.1%)	(1.5%)	(9.0%)	0.5%
2002	2.9%	(2.9%)	(0.7%)	(15.8%)	(2.8%)	(9.9%)	(0.3%)
2003	2.1%	(0.9%)	1.1%	44.0%	4.4%	(22.4%)	(5.6%)
2004	(0.6%)	(0.3%)	0.8%	3.2%	0.4%	18.7%	5.3%
2005	0.6%	1.6%	2.8%	(2.3%)	(5.1%)	1.1%	(4.2%)
2006	(5.1%)	(4.3%)	(2.8%)	(9.6%)	0.1%	(14.2%)	(0.5%)
2007	2.0%	1.4%	(0.4%)	(3.2%)	0.4%	3.3%	(0.0%)
2008	0.2%	(0.7%)	(1.2%)	(10.8%)	0.4%	10.6%	(5.0%)
2009	(0.6%)	(2.0%)	(3.0%)	(15.1%)	(0.5%)	(1.1%)	(11.2%)
2010	(3.7%)	(2.9%)	11.5%	8.5%	0.0%	3.9%	(41.5%)
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%	11.8%
2013	3.4%	0.0%	(3.5%)	0.1%	(15.8%)	(4.7%)	13.7%
Geo Mean - 2012 & 2013	0.1%	(0.4%)	(0.9%)	(1.8%)	(14.4%)	1.2%	12.8%

Except for the Street Lighting class, the 2014 forecast of usage per customer/connection was determined by applying the historical geometric mean value for 2012 and 2013 to the actual 2013 usage per customer/connection. Once again the historical geometric mean value for 2012 and 2013 is applied to the 2014 forecast to determine the 2015 forecast. For the Street Lighting class the usage per connection has been set a 373 kWh/connection for 2014 and 2015. Upon completion of the Retrofit Program, NBHDL worked with the City of North Bay to determine the new load profile of the Street Light class that accurately reflected the number of connections and the reduction to demand based on the use of more efficient lighting. The usage per connection reflects the actual billing of the

Street Lighting class upon completion of the project. The Retrofit Program was part of an approved Ontario Power Authority ("OPA") saveONenergy CDM program. The resulting usage forecast is as follows in Table 3-12:

Table 3-12 Forecast Annual kWh Usage per Customer/Connection

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							
2014	9,853	31,993	842,085	17,568,316	373	1,052	6,697
2015	9,861	31,853	834,765	17,254,810	373	1,064	7,551

Except for the General Service 3,000 to 4,999 kW class, the preceding information is used to determine the non-normalized weather billed energy forecast by applying the forecast number of customer/connection from Table 3-9 by the forecast of annual usage per customer/connection from Table 3-12. At this point in the process, it is assumed the number of customers for the General Service 3,000 to 4,999 kW class is 2 for the adjustment in kWh and for the loss of a customer in this class is addressed later on in the process. The resulting non-normalized weather billed energy forecast is shown in the following Table 3-13.

Table 3-13 Non-normalized Weather Billed Energy Forecast

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)								
2014 (Not Normalized)	208.0	85.2	209.7	35.1	2.0	0.4	0.0	540.5
2015 (Not Normalized)	208.3	85.2	202.8	34.5	2.0	0.4	0.1	533.3

The non-normalized weather billed energy forecast has been determined but this needs to be adjusted in order to be aligned with the total weather normalized billed energy forecast. As previously determined, the total weather normalized billed energy forecast is 547.5 (GWh) for 2014 and 2015.

The difference between the non-normalized and normalized forecast adjustments is 7.0 GWh in 2014 (i.e. 547.5 – 540.5) and 14.2 GWh in 2015 (i.e. 547.5 – 533.3). The difference is assumed to be the adjustment needed to move the forecast to a weather normal basis and this amount will be assigned to those rate classes that are weather sensitive. Based on the weather normalization work completed by Hydro One for NBHDL for the cost allocation study, which has been used to support this Application, it was determined that the weather sensitivity by rate classes is as follows in Table 3-14:

Table 3-14 Weather Sensitivity by Rate Class

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%

For the General Service 50 to 2,999 kW and the General Service 3,000 to 4,999 kW rate classes, weather sensitivity amount of 82% and 0%, respectively, were provided in the weather normalization work completed by Hydro One. For the Residential and General Service < 50 kW classes, it was assumed in NBHDL 2010 COS application that these two classes were 100% weather sensitive. Intervenors expressed concern with this assumption and have suggested that 100% weather sensitivity is not appropriate. NBHDL agrees with this position but also submits that the weather sensitivity for the Residential and General Service < 50 kW classes should be higher than the General Service 50 to 2,999 kW class. As a result, NBHDL has assumed the weather sensitivity for the Residential and General Service < 50 kW classes to be mid-way between 100% and 82%, or 91%.

The difference between the non-normalized and normalized forecast of 7.0 GWh in 2014 and 14.2 GWh in 2015 has been assigned on a pro rata basis to each rate class based on the above level of weather sensitivity.

CDM Adjustment and LRAMVA

A manual adjustment has been made to reflect the impact of 2013, 2014 and 2015 CDM programs on the load forecast. NBHDL has made this adjustment to reflect the “net” impact of the CDM programs on the load forecast.

The following Table 3-15, which is consistent with part of App.2-I LF_CDM_WF, outlines the actual savings from 2011, 2012 and 2013 CDM programs and the expected savings from 2014 CDM programs in order to achieve the licensed 4 year CDM target assigned to NBHDL.

Table 3-15 4 Year (2011-2014) Expected kWh Target Results

4 Year (2011-2014) kWh Target:					
26,100,000					
	2011	2012	2013	2014	Total
2011 CDM Programs	10.08%	8.94%	8.93%	8.51%	36.45%
2012 CDM Programs		10.58%	9.54%	9.31%	29.43%
2013 CDM Programs			11.68%	11.68%	23.36%
2014 CDM Programs				23.45%	23.45%
Total in Year	10.08%	19.52%	30.15%	52.95%	112.70%
kWh					
2011 CDM Programs	2,630,000	2,334,000	2,330,000	2,220,000	9,514,000
2012 CDM Programs		2,761,536	2,490,000	2,430,000	7,681,536
2013 CDM Programs			3,049,000	3,049,000	6,098,000
2014 CDM Programs				6,121,536	6,121,536
Total in Year	2,630,000	5,095,536	7,869,000	13,820,536	29,415,072

For 2015, it is assumed the savings achieved in 2014 from 2011 to 2014 programs will persist into 2015. In addition, the savings from 2015 programs are assumed to be 14,353,536 (kWh) which is the forecasted savings in the first year of the 2015-2020 CDM target assigned to NBHDL. The following Table 3-16 summarizes the expected savings in 2015 from 2011 to 2015 programs.

Table 3-16 4 Year (2011-2014) Expected kWh Target Results
Along with 2015 Expected Results

kWh	2011	2012	2013	2014	2015
2011 CDM Programs	2,630,000	2,334,000	2,330,000	2,220,000	2,220,000
2012 CDM Programs		2,761,536	2,490,000	2,430,000	2,430,000
2013 CDM Programs			3,049,000	3,049,000	3,049,000
2014 CDM Programs				6,121,536	6,121,536
2015 CDM Programs					14,353,536
Total in Year	2,630,000	5,095,536	7,869,000	13,820,536	28,174,072

Since the regression analysis is based on actual power purchased data up to and including 2013 actual data, it is assumed that any savings from programs initiated up to and including 2013 are reflected in the prediction equation resulting from the regression analysis. However, for 2013 it is assumed that for those programs that were initiated in 2013 only one half of the full year results provided by the OPA actually occur since they were initiated throughout

the year. This has been classified as the half year rule for CDM purposes. It also suggests that for 2013 only one half of the reported full year results from programs initiated in 2013 are reflected in the actual 2013 power purchases. As a result, consistent with approach used in the 2014 COS applications and using the information in Table 3-16, the 2015 manual adjustment for CDM savings will be one half of 2013 programs that persist into 2015 (i.e. $\frac{1}{2}$ of 3,049,000) plus a full year of 2014 programs that persist into 2015 (i.e. 6,125,536) plus one half of 2015 programs (i.e. $\frac{1}{2}$ of 14,353,536) for a total of 14,822,804 kWh on a net basis. However, as outlined above in the discussion that supports Table 3-12, for the Street Lighting class the usage per connection has been set a 373 kWh/connection for 2014 and 2015 which reflects savings from more efficient lighting. This is classified as a CDM program that should result in 1,241,072 kWh of net savings in 2015 for the Street Light class. As a result, the 2015 CDM savings to be assigned to the other classes is 14,822,804 kWh minus 1,241,072 kWh or 13,581,732 kWh

For 2014, the manual adjustment for CDM savings will be one half of 2013 programs that persist into 2014 (i.e. $\frac{1}{2}$ of 3,049,000) plus one half of 2014 programs (i.e. 6,125,536) for a total of 4,585,268 kWh on a net basis. This amount will be reduced by 1,241,072 kWh to reflect the 2014 CDM savings assigned to the Street Lighting class for more efficient lighting. The resulting 3,344,196 kWh will be assigned to the other classes.

In accordance with the Guidelines for Electricity Distributor Conservation and Demand Management (EB-2012-0003), issued April 26, 2012 ("CDM Guidelines"), it is NBHDL's understanding that as part of this application expected CDM savings in 2015 from 2011, 2012, 2013, 2014 and 2015 programs will need to be established for lost revenue adjustment mechanism ("LRAM") variance accounts purposes. NBHDL also understands that the OPA will measure CDM results on a full year net basis. Consistent with past practices, it is expected the full year net level of savings will be used for LRAM variance calculations. As a result, it is NBHDL's view the units used for the 2015 LRAM variance account should also be on a full year net basis. Based on the information in Table 3-16 above, NBHDL expects to achieve 28,174,072 net kWh savings in 2015 from 2011 to 2015 CDM programs. For LRAM variance account purposes, the following Table 3-17 outlines how this expected savings has been allocated to rate class. The expected kW saving has also been provided for those classes billed distribution charges on a kW basis using the average kW/KWh ratios from Table 3-20.

Table 3-17 2015 Expected CDM Savings by Rate Class for LRAM Variance Account

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
2015 LRAMVA kWh	1,945,644	3,404,877	20,154,696	1,427,783	1,241,072	0	0	28,174,072
2015 LRAMVA kW	0	0	49,275	2,754	3,465	0	0	55,495

Loss of Customer in General Service 3,000 to 4,999 kW Class

In June 2014, a General Service 3,000 to 4,999 kW customer shut down and the plant was decommissioned by the end of September. In 2014, as shown in Table 3-12, the annual usage per customer for the General Service 3,000 to 4,999 kW class is 17,568,316 kWh on an annual basis and 1,464,026 kWh on a monthly basis. For the months between shut down and decommissioning it is assumed the monthly kWh is reduced by 75% and by 100% thereafter. This means the kWh reduction in 2014 is 75% of 1,464,026 kWh times 3 (i.e. July to September) plus 100% of 1,464,026 kWh times 3 (i.e. October to December) or 7,686,138 kWh. The 2014 number of customers for the General Service 3,000 to 4,999 kW class is reduced in proportion to the kWh reduction.

For 2015, as shown in Table 3-12 above, the annual usage per customer for the General Service 3,000 to 4,999 kW class is 17,254,810 kWh. Since the General Service 3,000 to 4,999 kW customer is assumed to be decommissioned for the full the year the 2015 kWh reduction is 17,254,810 kWh and the number of customers is reduced by 1.

The following Table 3-18 outlines how the classes have been adjusted to align the non-normalized forecast with the normalized forecast and reflect the adjustments discussed above.

Table 3-18 Alignment of Non-normal to Weather Normal Forecast

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)								
2014 (Not Normalized)	208.0	85.2	209.7	35.1	2.0	0.4	0.0	540.5
2015 (Not Normalized)	208.3	85.2	202.8	34.5	2.0	0.4	0.1	533.3
Adjustment for Weather (GWh)								
2014	3.0	1.2	2.7	0.0	0.0	0.0	0.0	7.0
2015	6.2	2.5	5.4	0.0	0.0	0.0	0.0	14.2
Adjustment for CDM (GWh)								
2014	(0.4)	(0.7)	(1.9)	(0.4)	0.0	0.0	0.0	(3.3)
2015	(1.0)	(1.7)	(10.2)	(0.7)	0.0	0.0	0.0	(13.6)
Adjustment for Loss of Customer (GWh)								
2014	0.0	0.0	0.0	(7.7)	0.0	0.0	0.0	(7.7)
2015	0.0	0.0	0.0	(17.3)	0.0	0.0	0.0	(17.3)
Weather Normalized Billed Energy Forecast (GWh)								
2014 Bridge - Normalized	210.7	85.7	210.5	27.1	2.0	0.4	0.0	536.5
2015 Test - Normalized	213.5	86.0	198.1	16.5	2.0	0.4	0.1	516.6

Billed KW Load Forecast

There are four rate classes that charge volumetric distribution on per kW basis. These include General Service 50 to 2,999 kW, General Service 3,000 to 4,999 kW, Street Lighting and Sentinel Lighting. As a result, the energy forecast for these classes needs to be converted to a kW basis for rate setting purposes. The forecast of kW for these classes is based on a review of the historical ratio of kW to kWh and applying the average ratio to the forecasted kWh to produce the required kW.

The following Table 3-19 outlines the annual demand units by applicable rate class.

Table 3-19 Historical Annual kW per Applicable Rate Class

Year	General Service 50 to 2999 kW	General Service 3000 to 4999 kW	Street Lighting	Sentinel Lighting	TOTAL
Billed Annual kW					
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

The following Table 3-20 shows the historical ratio of kW/kWh as well as the average ratio for 2012 and 2013 as this reflects the period in which the slower economic conditions occurred which are expected to continue into 2014 and 2015.

Table 3-20 Historical kW/KWh Ratio per Applicable Rate Class

Year	General Service 50 to 2999 kW	General Service 3000 to 4999 kW	Street Lighting	Sentinel Lighting
Ratio of kW to kWh				
1999	0.3350%	0.2836%	0.2236%	0.1540%
2000	0.3246%	0.2881%	0.2496%	0.1218%
2001	0.3194%	0.2606%	0.2787%	0.1321%
2002	0.2982%	0.1985%	0.2788%	0.2163%
2003	0.2946%	0.1895%	0.2917%	0.2708%
2004	0.2904%	0.1872%	0.2788%	0.2749%
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%
Average 2012 & 2013	0.2445%	0.1929%	0.2792%	0.3020%

For the General Service > 50 to 2,999 kW and the Sentinel Lighting classes, the average ratio for 2012 to 2013 was applied to the weather normalized billed energy forecast in Table 3-18 to provide the forecast of kW by rate class. For the General Service > 3,000 to 4,999 kW class the average ratio for 2012 to 2013 was applied to the weather normalized billed energy forecast in Table 3-18 but an adjustment of 720 kW in 2014 and 180 kW in 2015 was made to address projects that have been implemented to address demand reductions for a customer in this class. The customer embarked on NBHDL's conservation initiatives including the real time pilot and realized energy efficiency and demand reduction from their key energy systems. Some projects include optimizing compressed air system use by repairing leaks and developing a new operating strategy. The customer also modified key process equipment to better utilize water cooling. Lastly, the customer is investigating upgrading block heater timers, enabling better controls on the office-side HVAC system, and implementing peak demand management strategies. For the Street Lighting class, it is assumed the monthly kW for this class is 470.09 kW reflecting the calculated demand based on the load profile of the new lighting. On an annual basis the kW for the Street Lighting class is 470.09 times 12 or 5,641 kW.

The following Table 3-21 outlines the forecast of kW for the applicable rate classes.

Table 3-21 kW Forecast by Applicable Rate Class

Year	General Service 50 to 2999 kW	General Service 3000 to 4999 kW	Street Lighting	Sentinel Lighting	TOTAL
Predicted Billed kW					
2014 Bridge - Normalized	514,563	51,541	5,641	1,286	573,031
2015 Test - Normalized	490,350	31,718	5,641	1,234	528,942

Table 3-22 provides a summary of the total load forecast on a power purchased and billed level.

Table 3-22 Summary of Total Load Forecast

	2010 Actual	2011 Actual	2012 Actual	2013 Actual	2014 Bridge - Normalized	2015 Test - Normalized
Actual kWh Purchases	592,105,954	593,738,608	572,612,693	573,172,085		
Predicted kWh Purchases before CDM adjustment	587,531,606	591,506,624	566,448,987	577,660,427	572,070,006	572,070,006
% Difference between actual and predicted purchases	(0.8%)	(0.4%)	(1.1%)	0.8%		
Loss Factor					1.0449	1.0449
Total Billed Before Adjustments					547,481,847	547,481,847
CDM Adjustment					3,344,196	13,581,732
Loss of Customer Adjustment					7,686,138	17,254,810
Total Billed After Adjustments	566,701,778	564,905,304	548,341,092	548,196,762	536,451,513	516,645,305

Table 3-23 provides a summary of the load forecast on a billing determinant basis by rate class. This table is also consistent with Appendix 2-IA which provides a variance analysis between each year and the last Board approved values.

Table 3-23 Summary of Billing Determinants and Variances of Actual and Forecast Data

Consistent with Appendix 2-IA

	2010 Board Approved	2010 Actual	2011 Actual	2012 Actual	2013 Actual	2014 Bridge - Normalized	2015 Test - Normalized
Residential							
Customers	21,075	20,952	21,096	21,074	21,108	21,114	21,120
kWh	214,923,813	206,535,118	207,358,082	200,614,424	207,806,639	210,667,130	213,486,948
Variance Analysis Compare to Board Approved							
Customers		(0.58%)	0.10%	(0.00%)	0.16%	0.19%	0.22%
kWh		(3.90%)	(3.52%)	(6.66%)	(3.31%)	(1.98%)	(0.67%)
General Service < 50 kW							
Customers	2,645	2,633	2,623	2,645	2,649	2,662	2,675
kWh	85,026,017	85,042,099	85,023,144	84,948,671	85,119,331	85,732,899	86,032,032
Variance Analysis Compare to Board Approved							
Customers		(0.46%)	(0.84%)	(0.00%)	0.15%	0.64%	1.13%
kWh		0.02%	(0.00%)	(0.09%)	0.11%	0.83%	1.18%
General Service 50 to 2999 kW							
Customers	287	269	268	254	255	249	243
kWh	221,440,020	230,037,737	231,667,366	223,688,453	216,614,454	210,469,427	198,111,405
kW	638,330	588,203	582,946	540,969	535,313	514,563	490,350
Variance Analysis Compare to Board Approved							
Customers		(6.17%)	(6.52%)	(11.41%)	(11.06%)	(13.15%)	(15.24%)
kWh		3.88%	4.62%	1.02%	(2.18%)	(4.95%)	(10.53%)
kW		(7.85%)	(8.68%)	(15.25%)	(16.14%)	(19.39%)	(23.18%)
General Service 3000 to 4999 kW							
Customers	2	2	2	2	2	2	1
kWh	38,784,125	41,028,104	37,086,852	35,722,772	35,775,036	27,090,494	16,534,810
kW	74,106	78,060	70,473	68,480	69,448	51,541	31,718
Variance Analysis Compare to Board Approved							
Customers		0.00%	0.00%	0.00%	0.00%	(21.88%)	(50.00%)
kWh		5.79%	(4.38%)	(7.89%)	(7.76%)	(30.15%)	(57.37%)
kW		5.34%	(4.90%)	(7.59%)	(6.28%)	(30.45%)	(57.20%)

	2010 Board Approved	2010 Actual	2011 Actual	2012 Actual	2013 Actual	2014 Bridge - Normalized	2015 Test - Normalized
Street Lighting							
Connections	5,680	5,572	5,574	5,574	5,574	5,419	5,419
kWh	2,721,605	3,324,190	3,204,123	2,790,238	2,348,268	2,018,761	2,018,762
kW	7,658	9,285	9,042	7,788	6,559	5,641	5,641
Variance Analysis Compare to Board Approved							
Connections		(1.91%)	(1.87%)	(1.87%)	(1.87%)	(4.60%)	(4.60%)
kWh		22.14%	17.73%	2.52%	(13.72%)	(25.82%)	(25.82%)
kW		21.24%	18.06%	1.69%	(14.35%)	(26.34%)	(26.34%)
Sentinel Lighting							
Connections	509	509	474	447	427	405	384
kWh	505,803	569,408	481,664	487,759	443,951	425,924	408,488
kW	1,382	1,541	1,287	1,601	1,224	1,286	1,234
Variance Analysis Compare to Board Approved							
Connections		0.00%	(6.88%)	(12.18%)	(16.11%)	(20.43%)	(24.56%)
kWh		12.58%	(4.77%)	(3.57%)	(12.23%)	(15.79%)	(19.24%)
kW		11.54%	(6.87%)	15.87%	(11.41%)	(6.91%)	(10.72%)
Unmetered Scattered Load							
Customers	21	19	18	17	15	7	7
kWh	337,294	165,123	84,073	88,774	89,084	46,878	52,860
Variance Analysis Compare to Board Approved							
Customers		(9.52%)	(14.29%)	(19.05%)	(28.57%)	(66.67%)	(66.67%)
kWh		(51.04%)	(75.07%)	(73.68%)	(73.59%)	(86.10%)	(84.33%)
Total							
Customer/Connections	30,219	29,956	30,055	30,013	30,030	29,858	29,849
kWh	563,738,678	566,701,778	564,905,304	548,341,092	548,196,762	536,451,513	516,645,305
kW from applicable classes	721,475	677,089	663,748	618,838	612,544	573,031	528,942
Variance Analysis Compare to Board Approved							
Customer/Connections		(0.87%)	(0.54%)	(0.68%)	(0.62%)	(1.19%)	(1.22%)
kWh		0.53%	0.21%	(2.73%)	(2.76%)	(4.84%)	(8.35%)
kW from applicable classes		(6.15%)	(8.00%)	(14.23%)	(15.10%)	(20.58%)	(26.69%)

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ACCURACY OF LOAD FORECAST AND VARIANCE ANALYSIS

Variance Analysis of Distribution Revenue and Billing Determinants

The following discussion provides a year over year variance analysis on NBHDL's distribution revenue and billing determinants. The variance analysis will compare 2010 Actual to 2010 Board Approved; 2011 Actual to 2010 Actual; 2012 Actual to 2011 Actual; 2013 Actual to 2012 Actual; 2014 Bridge to 2013 Actual and 2015 Test Year to 2014 Bridge Year. The distribution revenue variance analysis is based on information provided in Table 3-1. The billing determinant variance analysis is based on data outlined in Table 3-23. The overall variance analysis has been provided based on NBHDL's materiality of \$69,245; the materiality calculation being noted earlier in Exhibit 1 of this Application. NBHDL has chosen to use \$65,000 as its basis for variance analysis of distribution revenues.

2010 Actual vs 2010 Board Approved

Table 3-24 Distribution Revenue - 2010 Actual vs 2010 Board Approved

Distribution Revenues	2010 Board Approved	2010 Actual	2010 Actual vs. 2010 Board Approved
Residential	6,302,766	5,987,720	(315,046)
General Service < 50 kW	2,114,489	2,046,607	(67,881)
General Service 50 to 2999 kW	2,430,269	2,268,244	(162,025)
General Service 3000 to 4999 kW	114,986	78,770	(36,216)
Street Lighting	284,721	222,314	(62,406)
Sentinel Lighting	35,621	32,902	(2,719)
Unmetered Scattered Load	11,495	5,090	(6,405)
Distribution Revenue	11,294,345	10,641,646	(652,699)

There are two significant drivers of the variance between 2010 Board Approved distribution revenue and 2010 Actual; volumetric and customer/connection count variances and the assumption of a full year of revenue at the Board Approved rates set in the 2010 COS.

For the Residential class, variable revenue was down (\$151,986) compared to Board Approved as a result of kWh consumption being down 4% and four months of revenue at 2009 volumetric rates, all of which was partially offset by the LRAM/SSM rate rider that began in May 2010. Residential fixed revenue was down (\$163,060) as a result of a (1%) variance of the annual average customer count vs. the 2010 Board Approved count, along with the impact of four months of monthly service charges billed at the 2009 fixed monthly service charge rates.

The GS < 50 kW class variance was primarily a result of volumetric rate differences of (\$65,384) from four months of revenue at 2009 variable rates partially offset by the LRAM/SSM rate rider. Fixed revenue was down by an immaterial (\$2,497).

Variable revenue for the GS > 50 to 2,999 kW class was down (\$101,475) primarily as a result of kW demand being down 8% compared to the 2010 Board Approved kW and the impact of 2009 variable rates for four months of

2010 with a partial offset of the LRAM/SSM rate rider added in 2010. Fixed revenue was down (\$60,550) due to a 6% variance on customer count in the class which represented approximately 16 customers over a full year.

The majority of the Street Lighting variance was a result of decreased fixed revenue (\$52,637). Although new fixed rates were introduced as a result of the 2010 COS, they did not take effect until May 2010. The first 4 months of 2010 were at the 2009 rate as opposed to a full year at the new rate. Variable revenue was down (\$9,770) as the increase in variable rates was offset by higher kW than the Board Approved forecast as the anticipated Retrofit Program did not begin until 2011 so savings were not realized in 2010 Actual.

The variances in the other classes are immaterial.

Table 3-25 Billing Determinants - 2010 Actual vs 2010 Board Approved

	Customer/Connections			kWh		kW		
Billing Determinants	2010 Board Approved	2010 Actual	Difference	2010 Board Approved	2010 Actual	2010 Board Approved	2010 Actual	Volumetric Difference
Residential	21,075	20,952	(123)	214,923,813	206,535,118			(8,388,696)
General Service < 50 kW	2,645	2,633	(12)	85,026,017	85,042,099			16,082
General Service 50 to 2999 kW	287	269	(18)			638,330	588,203	(50,126)
General Service 3000 to 4999 kW	2	2	0			74,106	78,060	3,954
Street Lighting	5,680	5,572	(108)			7,658	9,285	1,626
Sentinel Lighting	509	509	0			1,382	1,541	159
Unmetered Scattered Load	21	19	(2)	337,294	165,123			(172,171)
Total	30,219	29,956	(263)	300,287,125	291,742,340	721,475	677,089	

In the Residential class the number of customers assumed in the 2010 Board Approved was not achieved until 2011 which contributed to the lower volumetric difference in 2010. In addition, the 2010 actual kWh was lower than the 2010 Board Approved kWh resulting from a 9% overall lower actual heating degree day value in 2010 compared to the weather normal value assumed in the 2010 Board Approved kWh.

In the General Service < 50 kW class the variance in both count and kWh is immaterial.

In the General Service 50 to 2,999 kW class the assumed year over year growth rate of 2.48% did not materialize; the change in actual volume from 2009 to 2010 was a 1.82% reduction. Fluctuations in this class year over year result from a number of factors including reclassification of accounts to/from the GS<50 kW class, the loss of existing customers due to businesses closing and the opening of new businesses not necessarily at a one to one ratio.

For the General Service 3,000 to 4,999 kW class, the 2010 actual kW were about 5% higher than the 2010 Board Approved, however, this variance in kW translates to approximately \$3,334 at 2010 approved rates and is deemed immaterial

For the Street Lighting class even though the actual 2010 number of connections were less than Board Approved the kW were higher as the anticipated lighting conversion did not begin until November 2011.

The Sentinel Light class has 12% less kW than the 2010 Board Approved amount; however, this translates to an immaterial variance of \$1,807 in variable revenue at 2010 Board Approved variable rates.

In 2010 a review of an account that represented approximately 75% of the UMSL connection resulted in the account being closed and reclassified to a metered rate class as a power supply upgrade had been done with new pad mount pedestals with meters.

2011 Actual vs 2010 Actual

Table 3-26 Distribution Revenue - 2011 Actual vs 2010 Actual

Distribution Revenues	2010 Actual	2011 Actual	2011 Actual vs. 2010 Actual
Residential	5,987,720	6,235,135	247,415
General Service < 50 kW	2,046,607	2,121,536	74,929
General Service 50 to 2999 kW	2,268,244	2,154,808	(113,436)
General Service 3000 to 4999 kW	78,770	102,855	24,086
Street Lighting	222,314	383,351	161,037
Sentinel Lighting	32,902	36,752	3,850
Unmetered Scattered Load	5,090	2,746	(2,344)
Distribution Revenue	10,641,646	11,037,183	395,536

For the Residential class 2011 distribution revenue was higher than 2010 due to \$106,607 in increased variable revenue as a result of the full year effect of new variable rates, and the increase in revenue from a full year of the LRAM rate rider. Fixed revenue for this class increased \$140,907 in comparison to 2010 Actual as a result of an increase in the number of residential customers and the full year impact of new fixed rates. Fixed revenue increases were partially offset by an adjustment for the deferred incremental IFRS transition costs that were incorporated into 2010 distribution rates and amortized over four years. In the 2010 COS decision, NBHDL received approval for \$100,000 in deferred incremental costs related to the transition to IFRS, which was to be amortized over the four year IRM period. From 2011 through 2013, NBHDL recorded a reduction in distribution revenue, apportioned to each class, in the total amount of \$25,000 which was offset in the regulatory asset account 1508 as explained in Exhibit 9 – Deferral and Variance Accounts.

An increase in variable revenue of \$85,196 is the primary driver of the increase in distribution revenue for the GS < 50 kW class. The increase is a result of increased variable rates compared to those in effect in the 2010 Actuals. A slight decrease in fixed revenue of (\$10,267) was a result of the GS < 50 kW component of the IFRS adjustment to distribution revenue; there was a minimal increase in fixed rates compared to the rates that form the 2010 Actual.

In 2011, revenue to cost ratios were adjusted for the GS 50 to 2,999 kW class resulting in a reduction to the fixed and variable rates as part of the 2010 COS proposed adjustments over 2010 through 2012. Variable revenue was lower than 2010 by (\$63,558) as a result of the rate reduction and a minor 1% reduction in demand, offset by the inclusion of a full year of the LRAM rate rider. Fixed revenue was down (\$49,878) compared to 2010 as a result of the rate decrease and the rate class portion of the IFRS adjustment.

The Street Light class experienced significant revenue to cost ratio adjustments in the 2011 IRM proceeding in accordance with the Decision and Order of the 2010 COS. As a result of this adjustment, variable revenue increased \$66,673 in 2011 in comparison to 2010 and fixed revenue increased \$94,365, with an immaterial adjustment for the rate class portion of the IFRS adjustment.

The other classes changed by immaterial amounts.

Table 3-27 Billing Determinants - 2011 Actual vs 2010 Actual

	Customer/Connections			kWh		kW		
Billing Determinants	2010 Actual	2011 Actual	Difference	2010 Actual	2011 Actual	2010 Actual	2011 Actual	Volumetric Difference
Residential	20,952	21,096	144	206,535,118	207,358,082			822,964
General Service < 50 kW	2,633	2,623	(10)	85,042,099	85,023,144			(18,955)
General Service 50 to 2999 kW	269	268	(1)			588,203	582,946	(5,257)
General Service 3000 to 4999 kW	2	2	0			78,060	70,473	(7,586)
Street Lighting	5,572	5,574	2			9,285	9,042	(243)
Sentinel Lighting	509	474	(35)			1,541	1,287	(254)
Unmetered Scattered Load	19	18	(1)	165,123	84,073			(81,050)
Total	29,956	30,055	99	291,742,340	292,465,300	677,089	663,748	

Fluctuations in customer counts are a result of many factors including the averaging of counts over a 12 month period, account reclassifications, businesses closing, the timing of customers opening and closing accounts, moves, etc. The count variance year over year is immaterial. The 10% reduction in kW related to the GS 3,000 to 4,999 kW class is a result of a slow-down experienced by the industrial customers in this class. The change in kWh for the UMSL account is a result of a significant account being closed in May of 2010. All other year over year changes are immaterial.

2012 Actual vs 2011 Actual

Table 3-28 Distribution Revenue - 2012 Actual vs 2011 Actual

Distribution Revenues	2011 Actual	2012 Actual	2012 Actual vs. 2011 Actual
Residential	6,235,135	6,198,440	(36,694)
General Service < 50 kW	2,121,536	2,098,393	(23,143)
General Service 50 to 2999 kW	2,154,808	1,937,243	(217,565)
General Service 3000 to 4999 kW	102,855	158,971	56,115
Street Lighting	383,351	476,760	93,408
Sentinel Lighting	36,752	55,522	18,770
Unmetered Scattered Load	2,746	3,011	265
Distribution Revenue	11,037,183	10,928,339	(108,844)

In the 2012 IRM the final adjustments to the revenue to cost ratios were made resulting in additional reductions to the GS 50 to 2,999 kW distribution rates. Variable revenue was down (\$140,641) in 2012 Actual compared to 2011 Actual as a result of the reduction in rates and a 7% reduction in demand from customers in this class which included the effects of a slow-down in the mining sector. An adjustment for the portion of the 2012 Shared Tax Savings ("STS") also contributed to the reduction in revenues for the GS 50 to 2,999 kW class over 2011. Fixed revenue in 2012 was down (\$76,923) compared to 2011 Actual as a result of the reduction in the fixed rates and a further reduction in the number of customers in the class.

The final revenue to cost adjustment for the Street Light class took effect in the May 2012 distribution rates with significant rate increases. Fixed revenue increased over 2011 Actual by \$73,578 as a result of the increase in comparison to the rates driving 2011 Actual revenue. Variable revenue increased \$19,830 as the rate increase was offset by a reduction in demand from the progress of the Retrofit Program that was being implemented throughout 2012.

The change in year over year distribution revenue in each of the other classes is immaterial.

Table 3-29 Billing Determinants - 2012 Actual vs 2011 Actual

Billing Determinants	Customer/Connections			kWh		kW		Volumetric Difference
	2011 Actual	2012 Actual	Difference	2011 Actual	2012 Actual	2011 Actual	2012 Actual	
Residential	21,096	21,074	(22)	207,358,082	200,614,424			(6,743,658)
General Service < 50 kW	2,623	2,645	22	85,023,144	84,948,671			(74,473)
General Service 50 to 2999 kW	268	254	(14)			582,946	540,969	(41,977)
General Service 3000 to 4999 kW	2	2	0			70,473	68,480	(1,993)
Street Lighting	5,574	5,574	0			9,042	7,788	(1,254)
Sentinel Lighting	474	447	(27)			1,287	1,601	314
Unmetered Scattered Load	18	17	(1)	84,073	88,774			4,701
Total	30,055	30,013	(42)	292,465,300	285,651,869	663,748	618,838	

The overall reduction in customer and connection count in 2012 compared to 2011 is immaterial overall, however, the GS 50 to 2,999 kW class experienced a 6% reduction which has a large impact on this rate class. NBHDL has experienced a decreasing customer count in this class since 2009 as a result of account reclassifications and accounts being closed. The impact of this reduction in customers is also reflected in lower demand compared to 2011, which is further compounded by a slow-down in the mining sector and the impact on many businesses in the community. NBHDL experienced a general reduction in demand across a significant number of customers in the GS 50 to 2,999 kW class. The Residential class consumption was down 4% over 2011 which can be attributed to weather, consumption pattern changes and the impact of conservation as well as the spin-off of the slow-down in the mining sector. The impact of the Retrofit Program on the Street Light class resulted in the beginning of a reduction in demand for the class as NBHDL worked with the City of North Bay to update billing parameters throughout the project. The other volumetric variances were immaterial.

2013 Actual vs 2012 Actual

Table 3-30 Distribution Revenue - 2013 Actual vs 2012 Actual

Distribution Revenues	2012 Actual	2013 Actual	2013 Actual vs. 2012 Actual
Residential	6,198,440	6,396,433	197,993
General Service < 50 kW	2,098,393	2,163,428	65,035
General Service 50 to 2999 kW	1,937,243	1,946,014	8,771
General Service 3000 to 4999 kW	158,971	168,826	9,855
Street Lighting	476,760	580,924	104,164
Sentinel Lighting	55,522	40,859	(14,663)
Unmetered Scattered Load	3,011	2,668	(343)
Distribution Revenue	10,928,339	11,299,150	370,811

Two specific items account for a majority of the overall increase to distribution revenue in 2013. On April 26, 2012, the Board issued the CDM Guidelines and for CDM programs delivered within the 2011 to 2014 period, the Board established Account 1568 as the LRAMVA to capture the variance between the Board-approved CDM forecast and the actual results at the customer rate class level. In 2013 and in accordance with the CDM Guidelines, NBHDL recorded the impact of lost revenues from OPA funded programs for the 2011 and 2012 years based on the final reports provided from the OPA and an estimate of the lost revenues for 2013. This adjustment resulted in increase in distribution revenue of \$242,430 over 2012. Distribution revenue also increased in 2013 by \$56,285 as a result of a refund to customers that was accounted for in 2012 for the STS rate rider. NBHDL did not record a similar refund in 2013 which resulted in the increase impact year over year.

The Residential class variable revenue increased over 2012 by \$72,171 as a result of an increase in consumption of 3.6% and a minimal increase in distribution rates through the mechanistic IRM process. Fixed revenue was up 1.7% or \$60,266 and the impact of the LRAMVA and STS adjustments increased revenue over 2012 by \$65,556.

The Street Lighting class increased \$93,946 in distribution revenue over 2012 as a result of the LRAMVA and STS adjustments. Variable revenue decreased (\$15,630) as a result of continuing demand reductions from the Retrofit program partially offset by an increase in variable rates over those contributing to 2012 revenue. Fixed revenue increased \$25,848 over 2012 due to the increase in the mix of rates that make up the 2013 revenue compared to 2012.

All other distribution revenue changes are immaterial by individual class.

Table 3-31 Billing Determinants - 2013 Actual vs 2012 Actual

Billing Determinants	Customer/Connections			kWh		kW		Volumetric Difference
	2012 Actual	2013 Actual	Difference	2012 Actual	2013 Actual	2012 Actual	2013 Actual	
Residential	21,074	21,108	34	200,614,424	207,806,639			7,192,215
General Service < 50 kW	2,645	2,649	4	84,948,671	85,119,331			170,660
General Service 50 to 2999 kW	254	255	1			540,969	535,313	(5,656)
General Service 3000 to 4999 kW	2	2	0			68,480	69,448	968
Street Lighting	5,574	5,574	0			7,788	6,559	(1,229)
Sentinel Lighting	447	427	(20)			1,601	1,224	(377)
Unmetered Scattered Load	17	15	(2)	88,774	89,084			310
Total	30,013	30,030	17	285,651,869	293,015,054	618,838	612,544	

The changes in customers/connections are immaterial for 2013. Increased kWh consumption for the Residential is a result of varying factors including weather and individual usage patterns. GS 50 to 2,999 kW demand continues to decrease and NBHDL anticipates this decreasing / flat change in demand to be the new 'normal' for NBHDL and the community. Continued focus and education on conservation, changing weather patterns and a slower economy contribute to this anecdotal evidence. The Street Light class saw additional significant demand reductions as the Retrofit Program was substantially complete by the end of 2013. Other changes by class were immaterial.

2014 Bridge vs 2013 Actual

Table 3-32 Distribution Revenue - 2014 Bridge vs 2013 Actual

Distribution Revenues	2013 Actual	2014 Bridge	2014 Bridge vs. 2013 Actual
Residential	6,396,433	8,134,791	1,738,358
General Service < 50 kW	2,163,428	2,549,242	385,814
General Service 50 to 2999 kW	1,946,014	1,979,019	33,005
General Service 3000 to 4999 kW	168,826	97,941	(70,885)
Street Lighting	580,924	506,731	(74,193)
Sentinel Lighting	40,859	45,561	4,702
Unmetered Scattered Load	2,668	2,187	(481)
Distribution Revenue	11,299,150	13,315,470	2,016,320

In the 2014 IRM proceeding, *EB-2013-0157*, NBHDL received approval to dispose and recover historical costs related to the implementation of smart meters that were tracked in the Smart Meter Deferral Accounts. As part of the journal entry to record the disposition of these costs NBHDL recorded \$1,526,857 related to the smart meter funding adder in distribution revenue and also forecasted \$686,641 in revenue to be collected in the 2014 Bridge Year in relation to the Smart Meter Disposition of Residual Historical Costs ("SMDR") rate rider and the Smart Meter Incremental Revenue Requirement ("SMIRR") rate rider. In total, distribution revenue increased over 2013 by \$2,213,498 in relation to the Smart Meter disposition. The Bridge Year adjustment to distribution revenue for the LRAMVA was (\$112,410) lower than 2013 due to the 2013 entry including three years of lost revenue true-up adjustments. 2014 is a reflection of the estimated impacts of the 2014 OPA programs as well as an adjustment to true-up prior year estimates in accordance with the 2013 Final OPA Report. In 2014, revenues associated with prior LRAM rate riders, related to 2008 and 2009 CDM programs, expired resulting in a (\$67,985) reduction in distribution revenue compared to 2013. 2013 was the final year for the adjustment to distribution revenue for the deferred IFRS transition costs that were approved in the 2010 COS application. Prior year adjustments resulted in a reduction to distribution revenue; the elimination of this adjustment in 2014 results in an increase in distribution revenue in the 2014 Bridge Year of \$25,000 over 2013 Actual. Overall net changes to fixed and variable revenue components are down (\$41,782) in the Bridge Year vs. 2013 Actual.

Table 3-33 Billing Determinants - 2014 Bridge vs 2013 Actual

	Customer/Connections			kWh		kW		
Billing Determinants	2013 Actual	2014 Bridge	Difference	2013 Actual	2014 Bridge	2013 Actual	2014 Bridge	Volumetric Difference
Residential	21,108	21,114	6	207,806,639	210,667,130			2,860,491
General Service < 50 kW	2,649	2,662	13	85,119,331	85,732,899			613,569
General Service 50 to 2999 kW	255	249	(6)			535,313	514,563	(20,749)
General Service 3000 to 4999 kW	2	2	(0)			69,448	51,541	(17,908)
Street Lighting	5,574	5,419	(155)			6,559	5,641	(918)
Sentinel Lighting	427	405	(22)			1,224	1,286	62
Unmetered Scattered Load	15	7	(8)	89,084	46,878			(42,206)
Total	30,030	29,858	(172)	293,015,054	296,446,908	612,544	573,031	

With the exception of the Street Light class, the year over year differences among the rate classes for customers/connections are immaterial. The decrease in the number of Street Light connections is a result of a final accurate count of connections upon completion of the Retrofit Program. The demand reduction of 17,908 kW in the GS 3,000 to 4,999 kW class is related to the shut-down of one of two Intermediate customers in the NBHDL service territory. The decreased kWh in the UMSL class over 2014 is the result of additional accounts being closed due to a review of all UMSL accounts; for the most part these accounts have been reclassified to metered rate classes. The variances in the other classes are less than 5% year over year and assumptions made in the load forecast are explained in the section above under "Summary of Load and Customer/Connection Forecast".

2015 Test vs 2014 Bridge

Table 3-34 Distribution Revenue - 2015 Test vs 2014 Bridge

Distribution Revenues	2014 Bridge	2015 Test	2015 Test vs. 2014 Bridge
Residential	8,134,791	7,488,001	(646,790)
General Service < 50 kW	2,549,242	2,454,539	(94,703)
General Service 50 to 2999 kW	1,979,019	2,103,877	124,859
General Service 3000 to 4999 kW	97,941	99,498	1,558
Street Lighting	506,731	502,662	(4,069)
Sentinel Lighting	45,561	45,351	(210)
Unmetered Scattered Load	2,187	1,078	(1,109)
Distribution Revenue	13,315,470	12,695,006	(620,464)

The proposed Test Year distribution revenue is a reflection of the 2015 COS application and the proposed base revenue requirement of NBHDL. The variance in distribution revenue over the Bridge Year is a result of the proposed increases to fixed and variable distribution revenue in the Test Year offset by the reduction in distribution revenue as a result of variances caused by the smart meter adjustments forecast in the Bridge Year along with the final LRAMVA adjustment being recorded.

Table 3-35 Billing Determinants - 2015 Test vs 2014 Bridge

Billing Determinants	Customer/Connections			kWh		kW		Volumetric Difference
	2014 Bridge	2015 Test	Difference	2014 Bridge	2015 Test	2014 Bridge	2015 Test	
Residential	21,114	21,120	6	210,667,130	213,486,948			2,819,818
General Service < 50 kW	2,662	2,675	13	85,732,899	86,032,032			299,133
General Service 50 to 2999 kW	249	243	(6)			514,563	490,350	(24,213)
General Service 3000 to 4999 kW	2	1	(1)			51,541	31,718	(19,823)
Street Lighting	5,419	5,419	0			5,641	5,641	0
Sentinel Lighting	405	384	(21)			1,286	1,234	(53)
Unmetered Scattered Load	7	7	0	46,878	52,860			5,982
Total	29,858	29,849	(9)	296,446,908	299,571,840	573,031	528,942	

Year over year changes are a result of the inputs of the load forecast model which is explained in detail above. Flat growth rates, minimal increases to kWh, and reduced kW are appropriate on a go forward basis for rate setting purposes.

1 **OTHER REVENUE**

2 **Variance Analysis of Other Revenue:**

3 Table 3-36 below provides details on the other revenue included in NBHDL's operating revenue which is consistent
4 with the other revenue data provided in Table 3-1. The revenues or costs (including interest) associated with
5 deferral accounts, variance accounts and regulatory assets recorded in account 4405 have been excluded as
6 shown in the table below. Each variance that is above the materiality threshold is highlighted in yellow and an
7 explanation for this variance is provided below in Table 3-36.

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Table 3-36 Other Revenue with Variances

USoA	Other Revenue	2010 Board Approved	2010 Actual	2010 Actual vs. 2010 Board Approved	2011 Actual	2011 Actual vs. 2010 Actual	2012 Actual	2012 Actual vs. 2011 Actual	2013 Actual	2013 Actual vs. 2012 Actual	2014 Bridge	2014 Bridge Year vs. 2013 Actual	2015 Test	2015 Test Year vs. 2014 Bridge Year
4086	SSS Administration Charge Revenue	76,632	79,656	3,024	81,266	1,610	83,258	1,992	84,210	952	82,970	(1,240)	83,834	864
4210	Rent from Electric Property	183,308	166,228	(17,080)	208,692	42,464	197,332	(11,360)	198,181	849	199,444	1,263	198,208	(1,236)
4225	Late Payment Charges	137,700	160,010	22,310	143,942	(16,067)	130,386	(13,556)	125,518	(4,868)	136,983	11,465	136,983	(0)
4235	Specific Service Charges	320,753	475,396	154,643	541,103	65,707	614,482	73,379	582,708	(31,774)	597,175	14,467	578,856	(18,319)
4325	Merchandising, Jobbing	12,269	5,000	(7,269)	-	(5,000)	(12)	(12)	-	12	3,689	3,689	4,400	711
4330	Costs and Expenses of Merchandising/Jobbing	(6,152)	88		5,489	5,401	(4,064)	(9,553)	21,013	25,077	-	(21,013)	-	-
4355	Gain on disposal of property	2,500	950	(1,550)	4,975	4,025	347,552	342,577	12,300	(335,252)	8,455	(3,845)	-	(8,455)
4360	Loss on disposal of property	-	-		(1,328)	(1,328)	-	1,328	(157)	(157)	-	157	-	-
4375	Revenues from Non-Utility Operations	248,349	402,333	153,984	812,144	409,811	1,364,800	552,656	1,798,725	433,925	3,147,368	1,348,643	2,556,998	(590,370)
4380	Expenses of Non-Utility Operations	(209,000)	(409,054)	(200,054)	(746,164)	(337,110)	(1,242,614)	(496,450)	(1,775,798)	(533,184)	(3,076,276)	(1,300,478)	(2,505,068)	571,208
4385	Non-Utility Rental Income	(122)	-	122	-	-	-	-	-	-	-	-	-	-
4390	Miscellaneous Non-Operating Income	7,134	10,357	3,223	13,946	3,589	18,851	4,905	208,417	189,566	319,505	111,088	11,925	(307,580)
4398	4398-Foreign Exchange	-	(4,521)		8,378	12,899	(4,060)	(12,438)	11,365	15,425	14,684	3,319	-	(14,684)
4405	Interest & Dividend Income	57,245	77,335	20,090	103,553	26,218	77,786	(25,767)	111,883	34,097	85,952	(25,931)	87,798	1,846
	Other Income and Expenses	112,223	82,487	(31,454)	200,993	118,506	558,239	357,246	387,748	(170,491)	503,377	115,629	156,053	(347,324)
	Other Revenue	830,616	963,777	131,442	1,175,997	212,220	1,583,696	407,700	1,378,365	(205,331)	1,519,950	141,585	1,153,934	(366,015)

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Table 3-37 2010 Actual vs 2010 Board Approved

USoA	Other Revenue	2010 Board Approved	2010 Actual	2010 Actual vs. 2010 Board Approved
4235	Specific Service Charges	320,753	475,396	154,643
4375	Revenues from Non-Utility Operations	248,349	402,333	153,984
4380	Expenses of Non-Utility Operations	(209,000)	(409,054)	(200,054)

Specific Service Charges increased by \$154,643 between the 2010 Board Approved and 2010 Actual. Collection charges increased by \$130,225 due to NBHLD's focus on delinquent accounts. Implementing consistent collection activities compliant with Board Approved policies has also reduced the overall bad debt expense as outlined in Exhibit 4. Disconnect/Reconnect fees and Service calls also increased by \$6,749 and \$19,553 respectively. All other miscellaneous Specific Service Charges were under the 2010 Board Approved by \$1,884.

Revenue from Non-Utility Operations increased by \$153,984 and the offsetting Expenses for Non-Utility Operations increased by \$200,054 for a net decrease of \$46,070 in Other Revenue. Revenues from the OPA sanctioned programs are recorded in 4375 and account for \$155,285 of the increase. OPA expenses are recorded in 4380 and account for \$200,054 of increased expenses for a net decrease in revenue of \$44,769 in 2010 Actual versus the 2010 Board Approved. The management fee charged to the affiliate North Bay Hydro Service ("NBHS") is recorded in account 4375 and was \$1,301 less in the 2010 Actual than the 2010 Board Approved due to the level of activities performed. This reduces the increase in revenue in account 4375 of \$155,285 from OPA programs to \$153,984

Table 3-38 2011 Actual vs 2010 Actual

USoA	Other Revenue	2010 Actual	2011 Actual	2011 Actual vs. 2010 Actual
4235	Specific Service Charges	475,396	541,103	65,707
4375	Revenues from Non-Utility Operations	402,333	812,144	409,811
4380	Expenses of Non-Utility Operations	(409,054)	(746,164)	(337,110)

Specific Service Charges increased by \$65,707 between the 2011 Actual and 2010 Actual. Collection charges increased by \$28,355 due to consistent and focused collection activities. The recording of the Late Payment Penalty revenue accounts for an increase of \$58,646. Change of occupancy fees were down \$6,360 in 2011, Disconnect/Reconnect fees \$8,071, Service calls \$4,638 and all other miscellaneous charges \$2,233.

Revenue from Non-Utility Operations increased by \$409,811 and the offsetting Expenses for Non-Utility Operations increased by \$337,110 for a net increase of \$72,701 in Other Revenue. Revenues and expenses from OPA sanctioned programs account for \$72,089 of the increase and the NBHS Management fee account for the balance.

Table 3-39 2012 Actual vs 2011 Actual

USoA	Other Revenue	2011 Actual	2012 Actual	2012 Actual vs. 2011 Actual
4235	Specific Service Charges	541,103	614,482	73,379
4355	Gain on disposal of property	4,975	347,552	342,577
4375	Revenues from Non-Utility Operations	812,144	1,364,800	552,656
4380	Expenses of Non-Utility Operations	(746,164)	(1,242,614)	(496,450)

Specific Service Charges increased by \$73,379 between the 2012 Actual and 2011 Actual. Collection charges increased by \$92,900 and Disconnect/Reconnect fees increased \$9,863. The Late Payment Penalty revenue decreased by \$28,967 and other miscellaneous charges decreased by \$418.

Gain on disposal of property in 2012 was \$342,577 higher than the 2011 Actual. In 2012 NBHDL received an insurance settlement of \$440,748 for failed transformers, these proceeds off set the remaining book value of \$69,991 and \$26,355 of disposal costs for a net gain of \$344,402. The remaining decrease of \$1,825 relates to the difference between the proceeds of \$3,150 for a fully depreciated vehicle that was sold in 2012 and \$4,975 for vehicles that were sold in 2011.

Revenue from Non-Utility Operations increased by \$552,656 and the offsetting Expenses for Non-Utility Operations increased by \$496,450 for a net increase of \$56,206 in Other Revenue. Revenues and expenses from OPA programs account for a decrease of \$33,650 and the NBHS Management fee accounts for an increase of \$10,695. In 2012 NBHDL completed a landfill generation project which accounted for an increase in account 4375 Other Revenue of \$ 593,485 and an offset of expenses in account 4380 Other Expenses of \$514,324 for a net increase in overall Other Revenue of \$79,161.

Table 3-40 2013 Actual vs 2012 Actual

USoA	Other Revenue	2012 Actual	2013 Actual	2013 Actual vs. 2012 Actual
4355	Gain on disposal of property	347,552	12,300	(335,252)
4375	Revenues from Non-Utility Operations	1,364,800	1,798,725	433,925
4380	Expenses of Non-Utility Operations	(1,242,614)	(1,775,798)	(533,184)
4390	Miscellaneous Non-Operating Income	18,851	208,417	189,566

The decrease of \$335,252 in Account 4355 Gain on disposal of property is related to the gain in 2012 for the failed transformer.

Revenue from Non-Utility Operations increased by \$433,925 and the offsetting Expenses for Non-Utility Operations increased by \$533,184 for a net decrease of \$99,259. Revenues and expenses from OPA programs account for an

increase of \$7,406 and the NBHS Management fee accounts for an increase of \$17,641. The landfill generation assets recorded a net loss of \$53,209 in 2013 Actual versus a net gain of \$71,097 in 2012 therefore a decrease of \$124,306 between the two years. These assets were sold in June 2013 to NBHS.

Account 4390 recorded a net increase of \$189,566 in 2013 Actual versus 2012 Actual. In 2013 NBHDL performed services for Bell Aliant's Fibre project and recorded \$197,278 of profit related to this activity. The Bell Aliant project is a city wide deployment of fibre to the home, which involves approximately 3,829 new attachments to NBHDL poles. In order to accommodate these attachments, NBHDL engineers the attachments, and then performs construction activities to make the poles ready for receiving the new attachments. This reflects the normal joint use procedure, albeit on a much larger scale.

The sale of materials and other miscellaneous non-operating revenue were lower than 2012 Actual by \$7,712.

Table 3-41 2014 Bridge vs 2013 Actual

USoA	Other Revenue	2013 Actual	2014 Bridge	2014 Bridge Year vs. 2013 Actual
4375	Revenues from Non-Utility Operations	1,798,725	3,147,368	1,348,643
4380	Expenses of Non-Utility Operations	(1,775,798)	(3,076,276)	(1,300,478)
4390	Miscellaneous Non-Operating Income	208,417	319,505	111,088

Revenue from Non-Utility Operations is forecasted to increase by \$1,348,643 and the offsetting Expenses for Non-Utility Operations to increase by \$1,300,478 for a net increase of \$48,165. Revenues and expenses from OPA programs account for an increase of \$9,090 and the NBHS Management fee accounts for a decrease of \$14,134. The landfill generation assets were sold in fiscal 2013 Actual therefore \$0 are included in the Bridge Year and the loss of \$53,209 recorded in 2013 Actual creates a gain of \$53,209 in the Bridge Year.

Account 4390 is forecasted to increase by \$111,088 in the Bridge Year versus 2013 Actual. The Bell Fibre project accounts for the total variance since the sale of materials and miscellaneous non-operating revenue has been forecasted equal to the 2013 Actual.

Table 3-42 2015 Test vs 2014 Bridge

USoA	Other Revenue	2014 Bridge	2015 Test	2015 Test Year vs. 2014 Bridge Year
4375	Revenues from Non-Utility Operations	3,147,368	2,556,998	(590,370)
4380	Expenses of Non-Utility Operations	(3,076,276)	(2,505,068)	571,208
4390	Miscellaneous Non-Operating Income	319,505	11,925	(307,580)

1 Revenue from Non-Utility Operations is forecasted to decrease by \$590,370 and the offsetting Expenses for Non-
2 Utility Operations to decrease by \$571,208 for a net decrease of \$19,162. Revenues and expenses from OPA
3 programs account for a decrease of \$18,231 and the NBHS Management fee accounts for a decrease of \$931.
4 Account 4390 is forecasted to decrease by \$307,580 in the Test Year versus Bridge Year. The Bell Fibre project is
5 scheduled to be completed at the end of the Bridge Year, therefore \$0 have been included in the Test Year this
6 accounts for \$308,366 of the decrease. The balance relates to an increase in the sale of materials.

7 NBHDL is not requesting approval of any new proposed specific service charges or changes to rates or new rules
8 for applying existing specific services charges.

9 Revenue from NBHDL affiliate transactions is recorded in account 4210 and 4375 and are identified as "Affiliate" in
10 Board Appendix 2-H. In addition details for, revenue for electricity purchases, capital contributions and shared
11 services that are recorded as an offset in OM&A are provided in Exhibit 4, Table 4-26.

Appendix 3-A Monthly Data Used For Regression Analysis

APPENDIX 3-A
MONTHLY DATA USED FOR REGRESSION ANALYSIS

	<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>North Bay Economy</u>	<u>Predicted Purchases</u>
Jan-99	63,487,136	943.6	0	31	0	0	63,043,662
Feb-99	52,841,336	690.8	0	28	0	0	53,294,233
Mar-99	54,688,699	672.5	0	31	1	0	54,476,670
Apr-99	44,591,785	383.7	0	30	1	0	46,140,996
May-99	43,099,943	135.9	16.1	31	1	0	42,461,740
Jun-99	43,342,960	50.6	58.2	30	0	0	44,484,744
Jul-99	45,592,773	17.9	80.4	31	0	0	46,657,257
Aug-99	42,287,375	56.3	23.2	31	0	0	42,893,973
Sep-99	41,300,858	114.9	28.3	30	1	0	41,791,414
Oct-99	46,442,290	396.7	0	31	1	0	47,618,711
Nov-99	50,218,866	504.5	0	30	1	0	49,144,773
Dec-99	58,891,278	759	0	31	0	0	58,453,454
Jan-00	64,153,165	972	0	31	0	0	63,749,848
Feb-00	56,490,501	758.8	0	29	0	0	56,139,560
Mar-00	52,703,249	570.8	0	31	1	0	51,947,829
Apr-00	45,985,995	435.7	0	30	1	0	47,434,013
May-00	42,508,041	201.1	2.8	31	1	0	42,985,937
Jun-00	41,335,408	104.1	11.3	30	0	0	41,946,525
Jul-00	42,423,847	48.4	30.6	31	0	0	43,307,921
Aug-00	43,723,679	51.5	24.2	31	0	0	42,857,102
Sep-00	41,935,856	195.9	5.7	30	1	0	41,941,381
Oct-00	45,622,937	336.8	0	31	1	0	46,129,255
Nov-00	50,313,527	552.7	0	30	1	0	50,343,299
Dec-00	63,560,276	977.2	0	31	0	0	63,879,149
Jan-01	62,009,099	883.3	0	31	0	0	61,544,260
Feb-01	55,385,237	813.7	0	28	0	0	56,350,227
Mar-01	55,156,674	709.6	0	31	1	0	55,399,188
Apr-01	46,076,998	387.2	0	30	1	0	46,228,026
May-01	43,199,114	155.5	3.7	31	1	0	41,926,297
Jun-01	43,534,388	59.5	38.1	30	0	0	43,048,106
Jul-01	42,688,390	53.1	62.5	31	0	0	46,056,053
Aug-01	45,403,097	17.9	79	31	0	0	46,541,778
Sep-01	42,491,206	161.2	11.8	30	1	0	41,581,698
Oct-01	47,325,120	341.5	0	31	1	0	46,246,124
Nov-01	49,866,265	457.5	0	30	1	0	47,976,085
Dec-01	54,707,252	656.1	0	31	0	0	55,894,773
Jan-02	59,190,700	799.5	0	31	0	0	59,460,514
Feb-02	54,122,187	770.7	0	28	0	0	55,281,002
Mar-02	56,174,150	756.4	0	31	1	0	56,562,902
Apr-02	46,696,819	443.6	0.5	30	1	0	47,671,694
May-02	45,039,770	304	0.8	31	1	0	45,379,648
Jun-02	42,372,405	83.6	34.1	30	0	0	43,317,430
Jul-02	45,838,809	18.2	74.1	31	0	0	46,145,063
Aug-02	45,311,412	22	62.6	31	0	0	45,290,978
Sep-02	42,710,904	89.1	30.2	30	1	0	41,306,600
Oct-02	46,917,981	438.3	2.2	31	1	0	48,834,590
Nov-02	51,516,609	627.7	0	30	1	0	52,208,227
Dec-02	57,947,130	771.5	0	31	0	0	58,764,275
Jan-03	65,599,527	1040.4	0	31	0	0	65,450,661
Feb-03	58,805,484	908.9	0	28	0	0	58,717,442
Mar-03	56,511,633	732.2	0	31	1	0	55,961,152
Apr-03	48,410,985	513.9	0	30	1	0	49,378,510
May-03	42,511,005	208.3	0.7	31	1	0	42,991,752
Jun-03	41,668,530	64.5	27.4	30	0	0	42,289,847
Jul-03	44,043,534	16.1	37.4	31	0	0	43,065,655
Aug-03	42,064,341	32.9	60.7	31	0	1	43,739,704
Sep-03	41,000,127	111.8	9.1	30	1	0	40,130,624
Oct-03	46,214,952	376.6	0.4	31	1	0	47,151,904
Nov-03	49,785,980	523.7	0	30	1	0	49,622,194
Dec-03	58,014,310	762.2	0	31	0	0	58,533,024

	<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>North Bay Economy</u>	<u>Predicted Purchases</u>
Jan-04	69,057,020	1121.6	0	31	0	0	67,469,756
Feb-04	59,735,330	780.5	0	29	0	0	56,679,146
Mar-04	54,100,800	647.1	0	31	1	0	53,845,081
Apr-04	46,868,660	454.7	0	30	1	0	47,906,461
May-04	43,342,330	257.5	4.1	31	1	0	44,495,593
Jun-04	41,064,550	104	7.7	30	0	0	41,647,093
Jul-04	43,951,680	25.1	41	31	0	0	43,586,391
Aug-04	42,933,280	75.6	20.5	31	0	0	43,151,172
Sep-04	42,265,810	103.5	19.8	30	1	0	40,806,825
Oct-04	45,470,380	326.3	0	31	1	0	45,868,165
Nov-04	50,304,380	537.2	0	30	1	0	49,957,881
Dec-04	62,662,520	896.5	0	31	0	0	61,872,487
Jan-05	66,888,915	1002.3	0	31	0	0	64,503,278
Feb-05	54,935,166	736.3	0	28	0	0	54,425,622
Mar-05	56,830,765	739.1	0	31	1	0	56,132,726
Apr-05	46,226,900	378.9	0	30	1	0	46,021,641
May-05	43,216,125	214.9	0.9	31	1	0	43,172,363
Jun-05	45,498,644	32	75.7	30	0	0	45,465,725
Jul-05	47,362,218	13.7	103	31	0	0	48,416,976
Aug-05	45,630,403	18.8	66.5	31	0	0	45,533,098
Sep-05	42,580,573	85.4	17.3	30	1	0	40,150,544
Oct-05	45,537,061	300	7.3	31	1	0	45,816,336
Nov-05	51,404,729	558.2	0	30	1	0	50,480,061
Dec-05	60,252,162	831.8	0	31	0	0	60,263,677
Jan-06	60,057,501	774.4	0	31	0	0	58,836,385
Feb-06	56,039,043	819.9	0	28	0	0	56,504,395
Mar-06	55,895,027	666.4	0	31	1	0	54,324,989
Apr-06	45,424,746	368.2	0	30	1	0	45,755,578
May-06	43,588,455	162.8	14.5	31	1	0	42,998,652
Jun-06	43,241,594	53	31.7	30	0	0	42,358,576
Jul-06	44,839,273	9.4	81.4	31	0	0	46,528,383
Aug-06	43,794,723	50.8	25.4	31	0	0	42,938,678
Sep-06	41,496,399	183.8	0.1	30	1	0	41,178,592
Oct-06	46,700,377	401.4	0	31	1	0	47,735,579
Nov-06	49,262,976	496.8	0	30	1	0	48,953,307
Dec-06	55,422,684	674.9	0	31	0	0	56,362,248
Jan-07	62,003,361	883.4	0	31	0	0	61,546,747
Feb-07	59,454,517	909.1	0	28	0	0	58,722,415
Mar-07	56,496,409	691	0	31	1	0	54,936,686
Apr-07	47,097,957	426.6	0	30	1	0	47,207,735
May-07	43,141,950	189	15.1	31	1	0	43,699,624
Jun-07	43,729,150	71.1	55.8	30	0	0	44,796,528
Jul-07	43,830,720	34.2	44.6	31	0	0	44,109,614
Aug-07	44,858,760	36.8	48.9	31	0	0	44,528,949
Sep-07	41,609,690	110	13.7	30	1	0	40,465,295
Oct-07	44,856,840	262	0	31	1	0	44,269,301
Nov-07	51,271,030	588.7	0	30	1	0	51,238,465
Dec-07	60,289,930	833.8	0	31	0	0	60,313,408
Jan-08	61,073,577	803.7	0.0	31	0	0	59,564,950
Feb-08	58,581,393	840.1	0.0	29	0	0	58,161,142
Mar-08	57,220,339	762.1	0.0	31	1	0	56,704,637
Apr-08	45,833,475	345.5	0.4	30	1	0	45,224,121
May-08	42,639,861	261.0	0.0	31	1	0	44,244,435
Jun-08	41,817,235	53.8	26.2	30	0	0	41,924,803
Jul-08	44,576,231	11.5	38.3	31	0	0	43,025,509
Aug-08	43,512,092	35.7	21.7	31	0	0	42,258,012
Sep-08	42,133,287	151.0	6.9	30	1	0	40,923,893
Oct-08	46,526,477	381.4	0.7	31	1	0	47,296,005
Nov-08	50,346,630	559.4	0.0	30	1	0	50,509,900
Dec-08	60,643,394	869.7	0.0	31	0	0	61,206,087

	<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>North Bay Economy</u>	<u>Predicted Purchases</u>
Jan-09	66,435,130	1046	0	31	0	0	65,592,396
Feb-09	54,391,300	773	0	28	0	0	55,340,680
Mar-09	54,188,320	671	0	31	1	0	54,441,858
Apr-09	45,313,310	421	0	30	1	0	47,085,857
May-09	40,746,062	257	0	31	1	0	44,147,459
Jun-09	41,206,069	85	34	30	0	0	43,357,215
Jul-09	41,748,515	46	14	31	0	0	41,853,463
Aug-09	42,834,531	61	36	31	0	0	44,031,166
Sep-09	40,869,246	126	5	30	1	0	40,142,254
Oct-09	46,305,269	409	0	31	1	0	47,934,505
Nov-09	47,482,200	454	0	30	1	0	47,884,082
Dec-09	58,800,731	824	0	31	0	0	60,079,670
Jan-10	61,714,800	887	0	31	0	0	61,646,209
Feb-10	54,321,931	753	0	28	0	0	54,840,879
Mar-10	50,859,731	501	0	31	1	0	50,219,663
Apr-10	44,050,485	315	0	30	1	0	44,428,538
May-10	44,651,823	148	29	31	1	0	43,835,706
Jun-10	42,680,285	71	7	30	0	0	40,782,008
Jul-10	47,940,331	11	90	31	0	0	47,310,531
Aug-10	46,659,623	29	70	31	0	0	46,060,626
Sep-10	43,088,392	177	12	30	1	0	41,982,036
Oct-10	45,676,969	370	0	31	1	0	46,949,823
Nov-10	50,732,085	526	0	30	1	0	49,681,872
Dec-10	59,729,500	813	0	31	0	0	59,793,715
Jan-11	64,609,346	984	0	31	0	0	64,053,209
Feb-11	56,418,838	798	0	28	0	0	55,964,809
Mar-11	57,187,262	742	0	31	1	0	56,207,323
Apr-11	47,356,077	444	0	30	1	0	47,627,965
May-11	43,036,769	175	7	31	1	0	42,677,616
Jun-11	42,724,254	66	22	30	0	0	41,890,766
Jul-11	47,506,515	3	85	31	0	0	46,696,695
Aug-11	45,624,408	17	46	31	0	0	43,781,695
Sep-11	42,233,746	116	18	30	1	0	40,970,872
Oct-11	43,980,523	295	2	31	1	0	45,221,056
Nov-11	47,499,562	465	0	30	1	0	48,157,605
Dec-11	55,561,308	751	0	31	0	0	58,257,015
Jan-12	60,440,354	855	0	31	0	1	59,184,918
Feb-12	53,240,192	718	0	29	0	1	53,449,505
Mar-12	51,166,854	510	1	31	1	1	48,838,091
Apr-12	44,760,523	426	0	30	1	1	45,519,767
May-12	41,974,455	138	14	31	1	1	40,663,628
Jun-12	43,023,082	51	49	30	0	1	42,066,058
Jul-12	46,297,146	2	78	31	0	1	44,428,059
Aug-12	43,563,745	27	45	31	0	1	42,289,738
Sep-12	40,969,382	163	12	30	1	1	40,010,359
Oct-12	43,802,875	331	0	31	1	1	44,319,445
Nov-12	48,147,860	550	0	30	1	1	48,603,114
Dec-12	55,226,225	771	0	31	0	1	57,076,307
Jan-13	60,327,762	893	0	31	0	1	60,114,895
Feb-13	53,600,343	801	0	28	0	1	54,378,790
Mar-13	52,121,236	685	0	31	1	1	53,126,876
Apr-13	46,644,026	496	0	30	1	1	47,274,042
May-13	41,426,399	199	10	31	1	1	41,836,032
Jun-13	39,734,886	103	15	30	0	1	40,547,588
Jul-13	44,872,690	39	53	31	0	1	43,243,485
Aug-13	42,128,550	49	23	31	0	1	41,067,486
Sep-13	39,409,892	182	2	30	1	1	39,589,879
Oct-13	43,095,284	322	0	31	1	1	44,094,411
Nov-13	49,774,197	626	0	30	1	1	50,494,150
Dec-13	60,036,819	964	0	31	0	1	61,892,793

	<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>North Bay Economy</u>	<u>Predicted Purchases</u>
Jan-14		925	0	31	0	1	60,918,803
Feb-14		793	0	28	0	1	54,167,929
Mar-14		662	0	31	1	1	52,545,322
Apr-14		408	0	30	1	1	45,072,699
May-14		200	9	31	1	1	41,844,640
Jun-14		69	32	30	0	1	41,151,165
Jul-14		20	63	31	0	1	43,587,440
Aug-14		40	40	31	0	1	42,231,591
Sep-14		140	11	30	1	1	39,289,584
Oct-14		340	1	31	1	1	44,617,992
Nov-14		536	0	30	1	1	48,263,572
Dec-14		823	0	31	0	1	58,379,270
Jan-15		925	0	31	0	1	60,918,803
Feb-15		793	0	28	0	1	54,167,929
Mar-15		662	0	31	1	1	52,545,322
Apr-15		408	0	30	1	1	45,072,699
May-15		200	9	31	1	1	41,844,640
Jun-15		69	32	30	0	1	41,151,165
Jul-15		20	63	31	0	1	43,587,440
Aug-15		40	40	31	0	1	42,231,591
Sep-15		140	11	30	1	1	39,289,584
Oct-15		340	1	31	1	1	44,617,992
Nov-15		536	0	30	1	1	48,263,572
Dec-15		823	0	31	0	1	58,379,270