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EXHIBIT 3 – OPERATING REVENUE

2024 Cost of Service

Tillsonburg Hydro Inc.
EB-2023-0053

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21

1. INTRODUCTION

This Exhibit presents details of Tillsonburg Hydro Inc.’s (“THI”) historical operating revenue subsequent to its last Cost of Service (“COS”) in 2013 (EB-2012-0168); presenting 2016 up to the end of 2022, as well as presenting forecast operating revenues for the 2023 Bridge and 2024 Test Years. The Exhibit goes on to explain the approach to forecasting load and customer/connection growth for the 2023 and 2024 Test Years. Finally, the Exhibit provides an Accuracy of Load Forecast and Variance Analysis, which assesses year-over-year variances in revenues, customers/connections, and load from 2016 through the 2024 Test Year.

THI is proposing a total Service Revenue Requirement of \$5,660,994, which is inclusive of \$478,611 in Other Revenue and a Base Revenue Requirement of \$5,182,383. The following Table 3-1 summarizes THI’s total operating revenue by rate class as last approved by the OEB for 2013, from 2016 to 2022 based on actual billing determinants and approved rates, for the 2023 Bridge Year based on forecast billing determinants and approved rates, and for the 2024 Test Year. The 2024 Test Year is presented both at current approved rates for 2023, and at proposed rates for 2024.

Table 3-1: Summary of Operating Revenue

Distribution Throughput Revenue	2013 Board Approved	2016 Actual	2017 Actual	2018 Actual	2019 Actual	2020 Actual	2021 Actual	2022 Actual	2023 Bridge	2024 Test at Current Rates	2024 Test at Proposed Rates
Residential	1,872,182	2,033,299	2,066,745	2,174,533	2,234,996	2,340,159	2,476,793	2,654,219	2,812,035	2,890,071	3,434,300
GS < 50 kW	594,117	588,117	584,934	600,615	606,112	623,023	628,869	668,702	702,485	714,056	714,599
GS 50-499 kW	338,991	422,925	417,096	406,188	406,895	431,016	450,692	488,383	508,490	504,171	727,607
GS 500-1499 kW	194,483	216,582	228,629	266,870	245,994	179,738	195,479	150,906	141,063	129,663	126,186
GS 1500-4999kW	168,153	139,291	137,147	135,552	129,147	121,468	120,820	120,811	117,387	117,478	113,883
USL	9,872	10,036	9,838	9,643	9,476	9,630	9,783	9,951	10,139	10,033	13,021
Sentinel Lighting	8,199	9,613	9,150	9,040	8,232	8,037	8,141	8,488	8,596	8,566	24,541
Streetlighting	48,018	53,158	53,849	47,450	34,564	34,331	36,926	38,115	39,374	39,374	28,247
Total Distribution	3,234,015	3,473,019	3,507,387	3,649,891	3,675,417	3,747,403	3,927,504	4,139,574	4,339,570	4,413,412	5,182,383
Specific Service Charges	43,705	112,199	100,383	74,821	77,983	79,798	106,293	149,712	154,113	113,805	113,805
Late Payment Charges	17,500	21,805	19,918	18,494	21,511	18,672	20,108	23,956	25,154	26,412	26,412
Other Distribution/Operating Revenues	32,476	31,570	29,185	27,743	10,438	14,027	12,032	12,163	12,771	13,410	13,410
Other Income or Deductions	44,664	125,550	67,959	287,093	179,850	156,340	215,426	293,933	446,388	324,984	324,984
Total	138,344	291,124	217,445	408,152	289,782	268,837	353,859	479,765	638,426	478,611	478,611
Grand Total	3,372,359	3,764,144	3,724,832	4,058,043	3,965,199	4,016,239	4,281,363	4,619,339	4,977,996	4,892,023	5,660,994

1 **2. SUMMARY OF LOAD AND CUSTOMER/CONNECTION FORECAST**

2
3 **2.1 Load and Revenue Forecasts**

4
5 The purpose of this evidence is to present the process used by THI to prepare the weather
6 normalized load and customer/connection forecast used to design the proposed 2024 Test Year
7 distribution rates.

8
9 In summary, THI used a multivariate regression analysis consistent with numerous Cost of
10 Service (“COS”) applications approved by the Ontario Energy Board (“OEB” or “Board”) over the
11 past two decades. The regression analysis includes actual data to the end of 2022 and relies on
12 statistically valid independent variables to forecast future results.

13
14 With regards to the overall process of load forecasting THI is of the view that conducting a
15 regression analysis on historical electricity purchases to produce an equation that will predict
16 purchases is appropriate. THI has data regarding the amount of electricity (in kWh) purchased
17 from the IESO for use by its customers. Utilizing a regression analysis, these purchases can be
18 related to other monthly explanatory variables, producing an equation that predicts the purchases
19 based on the explanatory variables. This prediction model is then used as the basis to forecast
20 the total level of weather normalized purchases for the Bridge and Test Years, which is converted
21 to billed kWh by rate class. A detailed explanation of this process is provided in this evidence.

22
23 Based on the OEB's approval of this methodology in numerous COS applications, THI submits
24 the load forecasting methodology is reasonable for the purposes of this Application. The following
25 materials support the weather normalized load forecast used by THI in this Application.

26
27 Table 3-2, Table 3-3 and Table 3-4 below provide a summary of the weather normalized load and
28 customer/connection forecast used in this Application.

29

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

Year	Billed Actual (GWh)	Growth (GWh)	Billed Weather Normal (GWh)	Growth (GWh)	Customer/Connection Count	Growth
Billed Energy (GWh) and Customer Count / Connections						
2013 Board Approved	183.4				6,994	
2016	195.9		194.7		7,202	
2017	183.8	(12.1)	185.5	(9.2)	7,316	113
2018	183.8	(0.1)	181.8	(3.7)	7,431	115
2019	171.7	(12.1)	172.5	(9.3)	7,568	138
2020	167.5	(4.2)	166.9	(5.6)	7,749	181
2021	172.2	4.7	172.1	5.2	8,037	288
2022	178.7	6.5	180.0	7.9	8,355	317
2023 Bridge	174.1	(4.6)	174.1	(5.9)	8,566	211
2024 Test	174.7	0.6	174.7	0.6	8,783	217

2
 3 In the above Table 3-2, the billed GWh data from 2016 to 2022 reflects actual weather and
 4 weather normal conditions in each year. The weather normal values are the actual values
 5 adjusted by the weather normal conversion factor outlined in Table 3-7. The weather conversion
 6 factor is determined consistent with the approach outlined by the OEB in Appendix 2-IA. For 2023
 7 and 2024, the forecasted billed GWh is presented on a weather normal basis.

8
 9 Customer/Connection values are presented on an average basis throughout this evidence for the
 10 purpose of rate design, and sentinel lights, street lights and unmetered loads are measured as
 11 connections.

12
 13 Table 3-3 provides the historical billed amounts on an actual and weather normalized basis by
 14 rate class using the weather normal conversion factor from Table 3-7. The forecasted billed
 15 amounts for 2023 and 2024 are also provided by rate class.

16

1

Table 3-3: Billed Energy by Rate Class

Year	Residential	General Service < 50 kW	General Service 50 to 499 kW	General Service 500 to 1499 kW	General Service 1500-4999 kW	Unmetered Scattered Load	Sentinel Lighting	Street Lighting	Total
Billed Energy (GWh) - Actual									
2016	50.3	21.4	44.7	42.1	35.5	0.4	0.1	1.4	195.9
2017	48.5	20.8	42.6	39.3	30.8	0.4	0.1	1.4	183.8
2018	52.9	21.3	42.4	36.9	28.7	0.3	0.1	1.1	183.8
2019	51.9	21.2	42.7	28.2	26.7	0.3	0.1	0.5	171.7
2020	55.6	21.4	43.8	25.1	20.6	0.3	0.1	0.5	167.5
2021	57.8	21.1	46.8	27.1	18.5	0.3	0.1	0.6	172.2
2022	59.6	23.0	54.1	23.1	17.8	0.3	0.1	0.6	178.7
Billed Energy (GWh) - Weather Normal									
2013 Board Approved	49.9	22.7	38.1	36.3	34.5	0.4	0.1	1.4	183.4
2016	50.0	21.2	44.4	41.9	35.3	0.4	0.1	1.4	194.7
2017	49.0	20.9	43.0	39.6	31.1	0.4	0.1	1.4	185.5
2018	52.3	21.1	42.0	36.5	28.4	0.3	0.1	1.1	181.8
2019	52.2	21.3	42.9	28.3	26.8	0.3	0.1	0.5	172.5
2020	55.4	21.3	43.6	25.0	20.5	0.3	0.1	0.5	166.9
2021	57.8	21.1	46.7	27.0	18.5	0.3	0.1	0.6	172.1
2022	60.1	23.2	54.5	23.3	17.9	0.3	0.1	0.6	180.0
2023 Bridge	59.5	22.6	52.3	21.0	17.7	0.3	0.1	0.6	174.1
2024 Test	61.6	23.0	51.9	19.3	17.7	0.3	0.1	0.6	174.7

2

3 Table 3-4 shows the historical and forecasted number of customers/connections by rate class
 4 along with the historical usage per customer/connection on an actual and weather normalized
 5 basis. The 2023 and 2024 forecasted usage per customer/connection is also provided on a
 6 weather normalized basis.

1 **Table 3-4: Number of Customers/Connections and Annual Usage by Rate Class**

Year	Residential	General Service < 50 kW	General Service 50 to 499 kW	General Service 500 to 1499 kW	General Service 1500-4999 kW	Unmetered Scattered Load	Sentinel Lighting	Street Lighting	Total
Number of Customers/Connections									
2013 Board Approved	6,042	666	85	9	2	62	127	1	6,994
2016	6,294	637	80	10	2	60	119	1	7,202
2017	6,409	642	80	10	2	59	113	1	7,316
2018	6,516	648	80	12	2	59	112	1	7,431
2019	6,652	655	78	12	2	57	112	1	7,568
2020	6,823	665	81	8	2	57	112	1	7,749
2021	7,107	672	77	9	2	57	112	1	8,037
2022	7,417	682	74	6	2	56	116	1	8,355
2023 Bridge	7,623	690	73	6	2	55	116	1	8,566
2024 Test	7,835	698	72	5	2	55	115	1	8,783
Actual Annual Energy Usage per Customer/Connection (kWh per customer/connection)									
2016	7,993	33,553	558,946	4,212,334	17,771,024	6,482	866	1,427,616	
2017	7,572	32,319	531,866	3,772,069	15,387,925	6,276	871	1,422,829	
2018	8,113	32,899	531,597	2,993,937	14,343,762	5,770	855	1,117,131	
2019	7,810	32,325	547,177	2,431,004	13,360,203	6,005	711	545,652	
2020	8,154	32,181	540,600	3,142,762	10,282,395	5,991	669	527,637	
2021	8,133	31,328	604,529	3,183,057	9,249,618	5,996	647	607,361	
2022	8,039	33,713	729,162	3,853,413	8,900,077	6,061	621	619,623	
Normalized Annual Energy Usage per Customer/Connection (kWh per customer/connection)									
2013 Board Approved	8,260	34,010	447,825	4,031,834	17,262,227	6,799	921	N/A	
2016	7,944	33,346	555,501	4,186,368	17,661,478	6,442	861	1,418,816	
2017	7,640	32,613	536,693	3,806,299	15,527,563	6,333	879	1,435,740	
2018	8,028	32,555	526,029	2,962,578	14,193,525	5,709	847	1,105,431	
2019	7,846	32,475	549,715	2,442,280	13,422,172	6,033	714	548,183	
2020	8,125	32,063	538,619	3,131,248	10,244,727	5,969	667	525,704	
2021	8,129	31,310	604,174	3,181,187	9,244,183	5,992	646	607,004	
2022	8,100	33,969	734,709	3,882,729	8,967,787	6,107	626	624,337	
2023 Bridge	7,807	32,738	714,252	3,803,422	8,851,141	6,061	621	619,623	
2024 Test	7,866	32,986	718,052	3,816,162	8,863,612	6,061	621	619,623	

2

3 **2.2 Forecast Methodology – Multivariate Regression Model**

4

5 THI's weather normalized load forecast is developed through a three-step process. First, a total
 6 system weather normalized purchased energy forecast is developed based on a multivariate
 7 regression model that incorporates historical load, weather, and other variables that impact
 8 electricity usage. Second, the weather normalized purchased energy forecast is adjusted by a

1 historical loss factor to produce a weather normalized billed energy forecast. Finally, the forecast
2 of billed energy by rate class is developed based on a forecast of customer/connections numbers
3 and the 2022 usage patterns per customer/connection. For the rate classes that have weather
4 sensitive load their forecasted billed energy is adjusted to ensure that the total billed energy
5 forecast by rate class is equivalent to the total weather normalized billed energy forecast that has
6 been determined from the regression analysis. The forecast of customers by rate class is
7 determined using a geometric mean analysis. For those rate classes that use kW for the
8 distribution volumetric billing determinant, an adjustment factor is applied to the class energy
9 forecast based on the historical relationship between kW and kWh. The following will explain the
10 forecasting process in more detail.

11
12 THI is mindful of direction in the OEB's Filing Requirements that ten years of data is typically
13 reflective of appropriate inputs for regression analyses and weather normalization. Due to
14 organizational changes noted in evidence, THI was unable to rely on data points necessary to
15 prepare its load forecast from prior to 2016. THI notes the OEB's recent February 28, 2024 Report
16 on Reducing Regulatory Burden for Very Small Electricity Distributors (EB-2023-0229), and its
17 inclusion of an example of the Normalized Average Use per Customer (NAC) for completing a
18 load and customer forecast, which relies on 5 years of data. The Report notes that distributors
19 should assess their own circumstances in determining the appropriate number of years on which
20 to establish a load forecast. THI is not a very small utility, as defined by having less than 5,000
21 customers, however it is a small utility; having only 8,189 customers¹ as of 2022. THI respectfully
22 submits the 7 years of data relied upon for the regression analysis and weather-normalization are
23 sufficient for the purpose of its load forecast and this Application.

24

25 2.3 Purchased kWh Load Forecast

26

27 An equation to predict total system purchased energy is developed using a multivariate regression
28 model with the independent variables outlined below. The regression model uses monthly kWh
29 and monthly values of independent variables from January 2016 to December 2022 to determine
30 the monthly regression coefficients.

¹ Customers, as opposed to Customers/Connections as provided within this Exhibit

1
 2 With regards to weather normalization, THI has reviewed the impact of weather over the past
 3 seven years; from January 2016 to December 2022. The average weather conditions over this
 4 period are applied in the prediction formula to determine a weather normalized forecast for 2024.

5
 6 As is consistent with the methodology relied upon to prepare this load forecast, the dependent
 7 variable in the multivariate regression analysis is Power Purchases by month, which includes
 8 Wholesale Power Purchased and Embedded Generation.

9
 10 In preparing the regression analysis, THI noted challenges in producing statistically significant
 11 results, which it determined were caused by a series of industrial customers which had either a)
 12 shut down and ceased operations entirely, or b) significantly reduced their consumption relative
 13 to historical norms. In order to account for these factors and produce a statistically valid forecast,
 14 THI gathered consumption data related to the affected customers and allocated it to either a
 15 Shutdown Adjustment or a Reduced Load Adjustment. The sum of both adjustments were
 16 removed from total Power Purchases to determine an Adjusted Power Purchases amount to use
 17 as the independent variable in the regression analysis. The annual impacts of these adjustments
 18 are summarized in Table 3-5 below.

Table 3-5: Annual Power Purchases Adjustments (GWh)

	Actual Power Purchases	Shutdown Adjustment	Reduced Load Adjustment	Adjusted Power Purchases
2016	201.8	15.5	51.1	135.2
2017	189.6	13.9	45.2	130.6
2018	190.0	9.6	42.7	137.8
2019	177.3	2.6	39.6	135.1
2020	173.4	1.9	31.5	140.0
2021	178.1	3.1	29.6	145.3
2022	185.1	2.5	28.4	154.2
2023 Bridge		0.0	22.5	
2024 Test		0.0	18.6	

21
 22 On completion of the multivariate regression analysis, the amounts listed above for the Shutdown
 23 Adjustment and Reduced Load Adjustment were added back to Predicted Power Purchases for
 24 historical years to determine the final forecasted Power Purchases. For the Bridge and Test
 25 Years, no Shutdown Adjustment amounts are added back to Predicted Power Purchases as the

1 customers in question have ceased operations. Amounts to be added back for the Reduced Load
2 Adjustment for the Bridge and Test Years were calculated on the basis of a Trend analysis of
3 Reduced Load from 2016 to 2022.

4
5 The multivariate regression model has determined the drivers of year-over-year changes in THI's
6 load growth are: weather (heating and cooling degree days), days in month, spring/fall flag²,
7 number of customers, and the temporary impacts of COVID-19 in 2020. These factors are
8 captured within the regression model. THI did not include a variable for Conservation and Demand
9 Management (CDM), nor were any explicit CDM adjustments made to the forecast.

10
11 The following outlines the prediction model used by THI to predict weather normal purchases for
12 the 2024 Test Year.

13
14 THI Monthly Predicted kWh Purchases:

15
16 = Heating Degree Days * 1,909
17 + Cooling Degree Days * 29,656
18 + Number of Days in the Month * 329,142
19 + Spring/Fall Flag * (481,001)
20 + Number of Customers³ * 1,599
21 + COVID Flag * (1,627,710)
22 + Constant of (11,446,292)

23
24 The monthly data used in the regression model and the resulting monthly prediction for the actual
25 and forecasted years are provided in Appendix A.

26
27 The sources of historical data from 2016 through 2022 for the various data points are:
28

² A variable which identifies spring or fall months in a calendar year and helps to capture energy use impacted by these seasons

³ In Residential, GS <50kW, GS 50 to 499kW, GS 500 to 1499kW, GS 1500 to 4999kW, and THI's 1 Streetlighting customer

- 1 a) Environment Canada website for monthly heating degree day and cooling degree
- 2 information. Weather data was obtained from the London A Weather Station. 18°C is the
- 3 base temperature from which heating degree days and cooling degree days are calculated.
- 4 b) Calendar-based number of days in the month and identification of the spring/fall flag.
- 5 c) The number of customers is based on average annual historical actuals from 2016 to 2022.
- 6 d) A COVID Flag value of 1 was assigned to April and May of 2020; the months in which THI's
- 7 commercial and industrial customers were most impacted by the pandemic. All other months
- 8 are assigned a value of 0.

9

10 The prediction formula has the following statistical results which generally indicate the formula

11 has a very good fit to the actual data set.

12

Table 3-6: Statistical Results

R Square	91.3%
Adjusted R Square	90.6%
F Test	134
MAPE (Monthly)	2.7%
Durbin-Watson	1.392
T-stats by Coefficient	
Heating Degree Days	6.1
Cooling Degree Days	13.2
Days in Month	5.7
Spring Fall Flag	(4.0)
Number of Customers	14.1
Covid Flag	(5.6)
Constant	(6.0)

14

15 The annual results of the above prediction formula compared to the actual annual purchases from

16 2016 to 2022 are shown below in Table 3-7, along with the predicted total system purchases for

17 THI for 2023 and 2024 on a weather normal basis. All figures in Table 3-7 are presented after the

18 reintroduction of Shutdown and Reduced Load Adjustment amounts. Information is also provided

19 to show the Weather Normal Conversion Factor which is used to weather normalize actual 2016

20 to 2022 volume data. In Table 3-7, the Predicted Weather Normal values are similar to the

21 Predicted amounts, but the weather normalized heating degree days and cooling degree days

22 used to determine the weather normal forecast for 2023 and 2024 are used in the prediction

23 formula in place of actual heating degree days and cooling degree days. The ratio of Predicted

24 Weather Normal to Predicted values results in a Weather Normal Conversion Factor. This factor

25 is applied to the Actual amount which results in the Actual Weather Normal value.

1
2

Table 3-7: Total System Purchases

Year	Actual	Predicted	% Difference	Predicted Weather Normal	Weather Normal Conversion Factor	Actual Weather Normal
Purchased Energy (GWh)						
2016	201.8	199.3	(1.2%)	198.0	0.9938	200.5
2017	189.6	190.7	0.6%	192.4	1.0091	191.4
2018	190.0	189.8	(0.1%)	187.8	0.9895	188.0
2019	177.3	179.7	1.4%	180.5	1.0046	178.1
2020	173.4	172.8	(0.3%)	172.2	0.9963	172.7
2021	178.1	180.1	1.2%	180.0	0.9994	178.0
2022	185.1	182.9	(1.2%)	184.2	1.0076	186.6
2023 Bridge		179.9		179.9	1.0000	
2024 Test		180.5		180.5	1.0000	

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The weather normalized amount for 2024 is determined by using 2024 dependent variables in the prediction formula on a monthly basis along with the average monthly heating degree days and cooling degree days which have occurred from January 2016 to December 2022 (i.e., 7 year average weather).

9 **2.4 Billed kWh Load Forecast**

10
11
12
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15

To determine the total weather normalized energy billed forecast, the total system weather normalized purchases forecast is adjusted by a historical loss factor. The historical loss factor used is 3.334% which represents the average loss factor from 2016 to 2022. With this average loss factor the total weather normalized billed energy before adjustment discussed below will be 174.1 (GWh) for 2023 (i.e., 179.9/1.0334) and 174.7 (GWh) for 2024 (i.e., 180.5/1.0334).

1 **2.5 Billed kWh Load Forecast and Customer/Connection Forecast by Rate**
 2 **Class**

3
 4 Once the total weather normalized billed energy amount is known, this amount needs to be
 5 distributed by rate class for rate design purposes taking into consideration the
 6 customer/connection forecast and expected usage per customer by rate class.

7
 8 The next step in the forecasting process is to determine a customer/connection forecast. The
 9 customer/connection forecast is based on reviewing historical customer/connection data as
 10 shown in the following Table 3-8.

Table 3-8: Historical Customers/Connections (Average)

Year	Residential	General Service < 50 kW	General Service 50 to 499 kW	General Service 500 to 1499 kW	General Service 1500-4999 kW	Unmetered Scattered Load	Sentinel Lighting	Street Lighting	Total
Number of Customers/Connections									
2016	6,294	637	80	10	2	60	119	1	7,202
2017	6,409	642	80	10	2	59	113	1	7,316
2018	6,516	648	80	12	2	59	112	1	7,431
2019	6,652	655	78	12	2	57	112	1	7,568
2020	6,823	665	81	8	2	57	112	1	7,749
2021	7,107	672	77	9	2	57	112	1	8,037
2022	7,417	682	74	6	2	56	116	1	8,355

13
 14 From the historical customer/connection data, the growth rate in customers/connections can be
 15 evaluated, which is provided in Table 3-9.

1 **Table 3-8: Growth Rate in Customer/Connections**

Year	Residential	General Service < 50 kW	General Service 50 to 499 kW	General Service 500 to 1499 kW	General Service 1500-4999 kW	Unmetered Scattered Load	Sentinel Lighting	Street Lighting
Growth Rate in Customers/Connections								
2016								
2017	1.8%	0.8%	0.2%	4.2%	0.0%	(1.8%)	(4.6%)	0.0%
2018	1.7%	0.9%	(0.4%)	18.4%	0.0%	1.3%	(0.9%)	0.0%
2019	2.1%	1.1%	(2.1%)	(6.1%)	0.0%	(4.4%)	0.0%	0.0%
2020	2.6%	1.5%	3.7%	(30.9%)	0.0%	0.3%	0.1%	0.0%
2021	4.2%	1.1%	(4.5%)	6.3%	0.0%	0.0%	(0.1%)	0.0%
2022	4.4%	1.5%	(4.1%)	(29.4%)	0.0%	(1.6%)	3.6%	0.0%
Geometric Mean	2.8%	1.1%	(1.2%)	(8.2%)	0.0%	(1.1%)	(0.4%)	0.0%

2
 3 The growth factor resulting from the geometric mean analysis from 2016 to 2022 is applied to the
 4 2022 customer numbers to determine the forecast of customer/connections for 2023. The factor
 5 is then applied again to the 2023 forecast to determine the 2024 forecast. Table 3-10 outlines the
 6 forecast of customers/connections by rate class for the 2023 Bridge Year and 2024 Test Year.

7
 8 **Table 3-10: Customer/Connection Forecast**

Year	Residential	General Service < 50 kW	General Service 50 to 499 kW	General Service 500 to 1499 kW	General Service 1500-4999 kW	Unmetered Scattered Load	Sentinel Lighting	Street Lighting	Total
Forecast Number of Customers/Connections									
2023 Bridge	7,623	690	73	6	2	55	116	1	8,566
2024 Test	7,835	698	72	5	2	55	115	1	8,783

9 The next step in the process is to review the historical customer/connection usage and to reflect
 10 this usage per customer in the forecast. Table 3-11 below provides the average annual usage per
 11 customer by rate class for 2022.

12
 13 **Table 3-11: 2022 Actual Annual Usage per Customer**

Year	Residential	General Service < 50 kW	General Service 50 to 499 kW	General Service 500 to 1499 kW	General Service 1500-4999 kW	Unmetered Scattered Load	Sentinel Lighting	Street Lighting
Annual kWh Usage Per Customer/Connection								
2022	8,039	33,713	729,162	3,853,413	8,900,077	6,061	621	619,623

1 The 2023 and 2024 forecast of usage per customer/connection have been held constant at the
 2 2022 level since the usage per customer/connection has generally been declining in most rate
 3 classes since 2016. The resulting usage forecast is as follows in Table 3-12.

4
 5 **Table 3-12: Forecast Annual kWh Usage per Customer/Connection**

Year	Residential	General Service < 50 kW	General Service 50 to 499 kW	General Service 500 to 1499 kW	General Service 1500-4999 kW	Unmetered Scattered Load	Sentinel Lighting	Street Lighting
Forecast Annual kWh Usage per Customers/Connection								
2023 Bridge	8,039	33,713	729,162	3,853,413	8,900,077	6,061	621	619,623
2024 Test	8,039	33,713	729,162	3,853,413	8,900,077	6,061	621	619,623

6
 7 The preceding information is used to determine the non-normalized weather billed energy forecast
 8 by applying the forecast number of customers/connections from Table 3-10 by the forecast of
 9 annual usage per customer/connection from Table 3-12. The resulting non-normalized weather
 10 billed energy forecast is shown in the following Table 3-13.

11
 12 **Table 3-13: Non-Normalized Weather Billed Energy Forecast**

Year	Residential	General Service < 50 kW	General Service 50 to 499 kW	General Service 500 to 1499 kW	General Service 1500-4999 kW	Unmetered Scattered Load	Sentinel Lighting	Street Lighting	Total
NON-normalized Weather Billed Energy Forecast (GWh)									
2023 Bridge	61.3	23.3	53.4	21.2	17.8	0.3	0.1	0.6	178.0
2024 Test	63.0	23.5	52.8	19.5	17.8	0.3	0.1	0.6	177.6

13
 14 The non-normalized weather billed energy forecast has been determined, but this needs to be
 15 adjusted in order to be aligned with the total weather normalized billed energy forecast mentioned
 16 above of 174.1 (GWh) for 2023 and 174.7 (GWh) for 2024.

17
 18 The difference between the non-normalized and normalized forecast is assumed to be the
 19 adjustment to move the forecast to a weather normal basis, and this amount will be assigned to
 20 those rate classes that are weather sensitive. Based on the weather normalization work
 21 completed by Hydro One for 2004 informing the original cost allocation informational studies, it
 22 was determined that the weather sensitivity by rate classes is as presented in Table 3-14.

1 **Table 3-14: Weather Sensitivity by Rate Class**

Residential	General Service < 50 kW	General Service 50 to 499 kW	General Service 500 to 1499 kW	General Service 1500-4999 kW	Unmetered Scattered Load	Sentinel Lighting	Street Lighting
Weather Sensitivity							
77%	77%	55%	35%	15%	0%	0%	0%

2
 3 The difference between the non-normalized and normalized forecast has been assigned on a pro
 4 rata basis to each rate class based on the above level of weather sensitivity. The following Table
 5 3-15 outlines how the classes have been adjusted to align the non-normalized forecast with the
 6 normalized forecast.

7
 8 **Table 3-15: Alignment of Non-normal to Weather Normal Forecast**

Year	Residential	General Service < 50 kW	General Service 50 to 499 kW	General Service 500 to 1499 kW	General Service 1500-4999 kW	Unmetered Scattered Load	Sentinel Lighting	Street Lighting	Total
Non-normalized Weather Billed Energy Forecast (GWh)									
2023 Bridge	61.3	23.3	53.4	21.2	17.8	0.3	0.1	0.6	178.0
2024 Test	63.0	23.5	52.8	19.5	17.8	0.3	0.1	0.6	177.6
Weather Adjustment (GWh)									
2023 Bridge	(1.8)	(0.7)	(1.1)	(0.3)	(0.1)	0.0	0.0	0.0	(3.9)
2024 Test	(1.4)	(0.5)	(0.8)	(0.2)	(0.1)	0.0	0.0	0.0	(2.9)
Weather Normalized Billed Energy Forecast (GWh)									
2023 Bridge	59.5	22.6	52.3	21.0	17.7	0.3	0.1	0.6	174.1
2024 Test	61.6	23.0	51.9	19.3	17.7	0.3	0.1	0.6	174.7

9
 10 **2.6 Billed kW Load Forecast**

11
 12 There are a number of THL customers/connections that are charged volumetric distribution on a
 13 per kW basis.

14
 15 For the GS 50 to 499 kW, GS 500 to 1,499kW, GS 1,500 to 4,999kW, Sentinel Lights and Street
 16 Lights rate classes, the energy forecast needs to be converted to a kW basis for rate setting
 17 purposes. To accomplish this conversion, the 7-year average ratio of kW to kWh from 2016
 18 through 2022 is applied to the forecasted kWh to produce the required kW for 2023 and 2024.

19

1 The following Table 3-16 outlines the average ratio of kW to kWh for each rate class from 2016
 2 through 2022.

3

4

Table 3-16: 7-Year Average kW/KWh Ratio per Applicable Rate Class

Year	General Service 50 to 499 kW	General Service 500 to 1499 kW	General Service 1500-4999 kW	Sentinel Lighting	Street Lighting
Ratio of kW to kWh					
2016	0.3206%	0.2456%	0.2029%	0.2748%	0.2684%
2017	0.3231%	0.2702%	0.2230%	0.2671%	0.2693%
2018	0.3101%	0.3072%	0.2321%	0.2676%	0.2725%
2019	0.3075%	0.3243%	0.2266%	0.2720%	0.2745%
2020	0.3145%	0.3053%	0.2585%	0.2700%	0.2684%
2021	0.3134%	0.3062%	0.2753%	0.2783%	0.2711%
2022	0.2968%	0.3173%	0.2701%	0.2796%	0.2691%
Average	0.3123%	0.2966%	0.2412%	0.2728%	0.2705%

5

6 The following Table 3-17 outlines the forecast of kW for the applicable rate classes which reflects
 7 the ratio in Table 3-16 being applied to the results in Table 3-15.

8

9

Table 3-17: kW Forecast by Applicable Rate Class

Year	General Service 50 to 499 kW	General Service 500 to 1499 kW	General Service 1500-4999 kW	Sentinel Lighting	Street Lighting	Total
Predicted Billed kW						
2023 Bridge	163,381	62,156	42,700	196	1,676	270,109
2024 Test	162,219	57,274	42,760	195	1,676	264,125

10

11 Table 3-18 below provides a summary of the load forecast on a billing determinant basis by rate
 12 class.

13

14

1

Table 3-18: Summary of Total Load Forecast

	2013 Board Approved	2016 Actual	2017 Actual	2018 Actual	2019 Actual	2020 Actual	2021 Actual	2022 Actual	2023 Bridge Weather Normal	2024 Test Weather Normal
Purchases										
Actual kWh Purchases		201,771,248	189,637,461	189,993,955	177,282,154	173,380,459	178,063,869	185,144,756		
Predicted kWh Purchases		199,251,586	190,715,719	189,814,123	179,694,367	172,812,609	180,128,802	182,856,695	179,918,220	180,486,863
% Difference between actual and predicted purchases			0.6%	(0.1%)	1.4%	(0.3%)	1.2%	(1.2%)		
Loss Factor		1.0298	1.0316	1.0340	1.0326	1.0352	1.0341	1.0363	1.0334	1.0334
Total Billed	183,376,707	195,938,265	183,826,118	183,750,499	171,687,025	167,477,566	172,196,903	178,660,614	174,108,951	174,659,234
Billing Determinants										
Residential										
Customers	6,042	6,294	6,409	6,516	6,652	6,823	7,107	7,417	7,623	7,835
kWh	49,906,667	50,305,890	48,524,267	52,869,436	51,949,017	55,641,421	57,807,950	59,629,357	59,512,317	61,627,888
General Service < 50 kW										
Customers	666	637	642	648	655	665	672	682	690	698
kWh	22,650,334	21,381,406	20,751,635	21,318,676	21,167,458	21,397,531	21,062,932	23,000,509	22,590,994	23,022,735
General Service 50 to 499 kW										
Customers	85	80	80	80	78	81	77	74	73	72
kWh	38,065,105	44,669,119	42,593,613	42,394,829	42,725,411	43,788,589	46,750,240	54,079,512	52,318,523	51,946,339
kW	115,326	143,223	137,627	131,466	131,386	137,702	146,508	160,486	163,381	162,219
General Service 500 to 1499 kW										
Customers	9	10	10	12	12	8	9	6	6	5
kWh	36,286,504	42,123,343	39,292,385	36,925,221	28,159,132	25,142,092	27,055,986	23,120,478	20,958,055	19,312,053
kW	87,913	103,435	106,161	113,441	91,315	76,763	82,837	73,360	62,156	57,274
General Service 1500-4999 kW										
Customers	2	2	2	2	2	2	2	2	2	2
kWh	34,524,454	35,542,049	30,775,850	28,687,524	26,720,406	20,564,791	18,499,236	17,800,153	17,702,283	17,727,224
kW	68,279	72,107	68,625	66,586	60,560	53,165	50,923	48,074	42,700	42,760
Unmetered Scattered Load										
Connections	62	60	59	59	57	57	57	56	55	55
kWh	421,538	386,201	367,143	341,866	340,304	340,496	340,760	338,890	335,322	331,791
Sentinel Lighting										
Connections	127	119	113	112	112	112	112	116	116	115
kWh	116,952	102,641	98,397	95,815	79,644	75,008	72,438	72,091	71,836	71,581
kW	301	282	263	256	217	202	202	202	196	195
Street Lighting										
Connections	1	1	1	1	1	1	1	1	1	1
kWh	1,405,153	1,427,616	1,422,829	1,117,131	545,652	527,637	607,361	619,623	619,623	619,623
kW	3,829	3,831	3,831	3,044	1,498	1,416	1,647	1,668	1,676	1,676
Total										
Customer/Connections	6,994	7,202	7,316	7,431	7,568	7,749	8,037	8,355	8,566	8,783
kWh	183,376,707	195,938,265	183,826,118	183,750,499	171,687,025	167,477,566	172,196,903	178,660,614	174,108,951	174,659,234
kW	275,648	322,878	316,507	314,793	284,976	269,248	282,117	283,790	270,109	264,125

2

3

3. ACCURACY OF LOAD FORECAST AND VARIANCE ANALYSIS

The following discussion provides a year over year variance analysis of THI’s distribution revenue and billing determinants. The variance analysis compares 2016 Actual to 2017 Actual; 2017 Actual to 2018 Actual; 2018 Actual to 2019 Actual; 2019 Actual to 2020 Actual; 2020 Actual to 2021; 2021 Actual to 2022 Actual; 2022 Actual to 2023 Bridge Year and 2023 Bridge Year to 2024 Test Year. The overall variance analysis has been provided based on a materiality threshold of \$50,000 as per the OEB’s response to the Very Small Utilities Working Group Report, issued March 28, 2024.

2016 Actual to 2017 Actual

Table 3-19 compares distribution revenues for 2016 Actuals to 2017 Actuals. Table 3-20 compares the billing determinants (customers/connections and volumes).

Both individual rate class variances and the total variance in distribution revenue between 2016 and 2017 Actual were less than \$50,000, and not material.

Table 3-19: Distribution Revenue – 2016 Actual vs 2017 Actual

Distribution Throughput Revenue	2016 Actual	2017 Actual	Difference (\$)	Difference (%)
Residential	2,033,299	2,066,745	33,447	1.6%
General Service < 50 kW	588,117	584,934	(3,183)	-0.5%
General Service 50 to 499 kW	422,925	417,096	(5,829)	-1.4%
General Service 500 to 1499 kW	216,582	228,629	12,046	5.6%
General Service 1500-4999 kW	139,291	137,147	(2,144)	-1.5%
Unmetered Scattered Load	10,036	9,838	(198)	-2.0%
Sentinel Lighting	9,613	9,150	(463)	-4.8%
Street Lighting	53,158	53,849	691	1.3%
Total	3,473,019	3,507,387	34,368	1.0%

Table 3-20: Billing Determinants – 2016 Actual vs 2017 Actual

Rate Class	Customers / Connections		Units	Volume		Volume (Wthr Nrm)		Annual Usage per Customer / Connection		Annual Usage per Customer / Connection (Wthr Nrm)	
	2016 Actual	2017 Actual		2016 Actual	2017 Actual	2016 Actual	2017 Actual	2016 Actual	2017 Actual	2016 Actual	2017 Actual
Residential	6,294	6,409	kWh	50,305,890	48,524,267	49,995,788	48,964,602	7,993	7,572	7,944	7,640
General Service < 50 kW	637	642	kWh	21,381,406	20,751,635	21,249,604	20,939,946	33,553	32,319	33,346	32,613
General Service 50 to 499 kW	80	80	kW	143,223	137,627	142,340	138,876	1,792	1,719	1,781	1,734
General Service 500 to 1499 kW	10	10	kW	103,435	106,161	102,798	107,124	10,344	10,191	10,280	10,284
General Service 1500-4999 kW	2	2	kW	72,107	68,625	71,662	69,248	36,053	34,312	35,831	34,624
Unmetered Scattered Load	60	59	kWh	386,201	367,143	383,820	370,474	6,482	6,276	6,442	6,333
Sentinel Lighting	119	113	kW	282	263	280	265	2	2	2	2
Street Lighting	1	1	kW	3,831	3,831	3,808	3,866	3,831	3,831	3,808	3,866
Total	7,202	7,316									
Variance	Count	%		Volume	%	Volume	%	Dollars	%	Dollars	%
Residential	115	1.8%	kWh	(1,781,622)	-3.5%	(1,031,186)	-2.1%	(421)	-5.3%	(303)	-3.8%
General Service < 50 kW	5	0.8%	kWh	(629,771)	-2.9%	(309,658)	-1.5%	(1,233)	-3.7%	(733)	-2.2%
General Service 50 to 499 kW	0	0.2%	kW	(5,595)	-3.9%	(3,464)	-2.4%	(74)	-4.1%	(47)	-2.6%
General Service 500 to 1499 kW	0	4.2%	kW	2,726	2.6%	4,327	4.2%	(152)	-1.5%	4	0.0%
General Service 1500-4999 kW	-	0.0%	kW	(3,482)	-4.8%	(2,415)	-3.4%	(1,741)	-4.8%	(1,207)	-3.4%
Unmetered Scattered Load	(1)	-1.8%	kWh	(19,058)	-4.9%	(13,346)	-3.5%	(206)	-3.2%	(109)	-1.7%
Sentinel Lighting	(6)	-4.6%	kW	(19)	-6.8%	(15)	-5.4%	(0)	-2.3%	(0)	-0.8%
Street Lighting	-	0.0%	kW	-	0.0%	58	1.5%	-	0.0%	58	1.5%
Total	113	1.6%									

2017 Actual to 2018 Actual

Table 3-21 compares distribution revenues for 2017 Actuals against 2018 Actuals. Table 3-22 compares the billing determinants (customers/connections and volumes).

2018 Actual distribution revenue was \$3,507,387, or \$142,504 higher than 2017 Actuals, principally explained by a surge of 9.0% in Residential volumetric billing determinants (6.8% on a weather normal basis) and the addition of 2 new GS 500 to 1,499kW customers, driving incremental billing determinants for this class.

Table 3-21: Distribution Revenue - 2017 Actual vs 2018 Actual

Distribution Throughput Revenue	2017 Actual	2018 Actual	Difference (\$)	Difference (%)
Residential	2,066,745	2,174,533	107,788	5.2%
General Service < 50 kW	584,934	600,615	15,681	2.7%
General Service 50 to 499 kW	417,096	406,188	(10,909)	-2.6%
General Service 500 to 1499 kW	228,629	266,870	38,241	16.7%
General Service 1500-4999 kW	137,147	135,552	(1,595)	-1.2%
Unmetered Scattered Load	9,838	9,643	(195)	-2.0%
Sentinel Lighting	9,150	9,040	(110)	-1.2%
Street Lighting	53,849	47,450	(6,398)	-11.9%
Total	3,507,387	3,649,891	142,504	4.1%

Table 3-22: Billing Determinants - 2017 Actual vs 2018 Actual

Rate Class	Customers / Connections		Units	Volume		Volume (Wthr Nrm)		Annual Usage per Customer / Connection		Annual Usage per Customer / Connection (Wthr Nrm)	
	2017 Actual	2018 Actual		2017 Actual	2018 Actual	2017 Actual	2018 Actual	2017 Actual	2018 Actual	2017 Actual	2018 Actual
Residential	6,409	6,516	kWh	48,524,267	52,869,436	48,964,602	52,315,681	7,572	8,113	7,640	8,028
General Service < 50 kW	642	648	kWh	20,751,635	21,318,676	20,939,946	21,095,384	32,319	32,899	32,613	32,555
General Service 50 to 499 kW	80	80	kW	137,627	131,466	138,876	130,089	1,719	1,648	1,734	1,631
General Service 500 to 1499 kW	10	12	kW	106,161	113,441	107,124	112,253	10,191	9,198	10,284	9,102
General Service 1500-4999 kW	2	2	kW	68,625	66,586	69,248	65,889	34,312	33,293	34,624	32,944
Unmetered Scattered Load	59	59	kWh	367,143	341,866	370,474	338,285	6,276	5,770	6,333	5,709
Sentinel Lighting	113	112	kW	263	256	265	254	2	2	2	2
Street Lighting	1	1	kW	3,831	3,044	3,866	3,012	3,831	3,044	3,866	3,012
Total	7,316	7,431									
Variance	Count	%		Volume	%	Volume	%	Dollars	%	Dollars	%
Residential	108	1.7%	kWh	4,345,169	9.0%	3,351,079	6.8%	542	7.2%	388	5.1%
General Service < 50 kW	6	0.9%	kWh	567,041	2.7%	155,438	0.7%	580	1.8%	(58)	-0.2%
General Service 50 to 499 kW	(0)	-0.4%	kW	(6,162)	-4.5%	(8,788)	-6.3%	(70)	-4.1%	(103)	-5.9%
General Service 500 to 1499 kW	2	18.4%	kW	7,280	6.9%	5,129	4.8%	(994)	-9.7%	(1,182)	-11.5%
General Service 1500-4999 kW	-	0.0%	kW	(2,039)	-3.0%	(3,359)	-4.9%	(1,019)	-3.0%	(1,680)	-4.9%
Unmetered Scattered Load	1	1.3%	kWh	(25,277)	-6.9%	(32,189)	-8.7%	(506)	-8.1%	(623)	-9.8%
Sentinel Lighting	(1)	-0.9%	kW	(6)	-2.4%	(11)	-4.3%	(0)	-1.6%	(0)	-3.5%
Street Lighting	-	0.0%	kW	(787)	-20.6%	(854)	-22.1%	(787)	-20.6%	(854)	-22.1%
Total	115	1.6%									

2018 Actual to 2019 Actual

Table 3-23 compares distribution revenues for 2018 Actuals against 2019 Actuals. Table 3-24 compares the billing determinants (customers/connections and volumes).

2019 Actual distribution revenue was \$25,526 more than 2018 Actuals; an immaterial variance. The Residential class saw a positive variance of \$60,463, driven by the addition of 136 customers and an Annual IR rate escalation.

Table 3-23: Distribution Revenue - 2018 Actual vs 2019 Actual

Distribution Throughput Revenue	2018 Actual	2019 Actual	Difference (\$)	Difference (%)
Residential	2,174,533	2,234,996	60,463	2.8%
General Service < 50 kW	600,615	606,112	5,497	0.9%
General Service 50 to 499 kW	406,188	406,895	708	0.2%
General Service 500 to 1499 kW	266,870	245,994	(20,876)	-7.8%
General Service 1500-4999 kW	135,552	129,147	(6,404)	-4.7%
Unmetered Scattered Load	9,643	9,476	(167)	-1.7%
Sentinel Lighting	9,040	8,232	(808)	-8.9%
Street Lighting	47,450	34,564	(12,887)	-27.2%
Total	3,649,891	3,675,417	25,526	0.7%

Table 3-24: Billing Determinants - 2018 Actual vs 2019 Actual

Rate Class	Customers / Connections		Units	Volume		Volume (Wthr NrmI)		Annual Usage per Customer / Connection		Annual Usage per Customer / Connection (Wthr NrmI)	
	2018 Actual	2019 Actual		2018 Actual	2019 Actual	2018 Actual	2019 Actual	2018 Actual	2019 Actual	2018 Actual	2019 Actual
Residential	6,516	6,652	kWh	52,869,436	51,949,017	52,315,681	52,189,972	8,113	7,810	8,028	7,846
General Service < 50 kW	648	655	kWh	21,318,676	21,167,458	21,095,384	21,265,639	32,899	32,325	32,555	32,475
General Service 50 to 499 kW	80	78	kW	131,466	131,386	130,089	131,996	1,648	1,683	1,631	1,690
General Service 500 to 1499 kW	12	12	kW	113,441	91,315	112,253	91,739	9,198	7,883	9,102	7,920
General Service 1500-4999 kW	2	2	kW	66,586	60,560	65,889	60,841	33,293	30,280	32,944	30,420
Unmetered Scattered Load	59	57	kWh	341,866	340,304	338,285	341,882	5,770	6,005	5,709	6,033
Sentinel Lighting	112	112	kW	256	217	254	218	2	2	2	2
Street Lighting	1	1	kW	3,044	1,498	3,012	1,505	3,044	1,498	3,012	1,505
Total	7,431	7,568									
Variance	Count	%		Volume	%	Volume	%	Dollars	%	Dollars	%
Residential	136	2.1%	kWh	(920,420)	-1.7%	(125,709)	-0.2%	(304)	-3.7%	(183)	-2.3%
General Service < 50 kW	7	1.1%	kWh	(151,219)	-0.7%	170,255	0.8%	(574)	-1.7%	(80)	-0.2%
General Service 50 to 499 kW	(2)	-2.1%	kW	(80)	-0.1%	1,907	1.5%	34	2.1%	59	3.6%
General Service 500 to 1499 kW	(1)	-6.1%	kW	(22,126)	-19.5%	(20,514)	-18.3%	(1,315)	-14.3%	(1,182)	-13.0%
General Service 1500-4999 kW	-	0.0%	kW	(6,026)	-9.1%	(5,048)	-7.7%	(3,013)	-9.1%	(2,524)	-7.7%
Unmetered Scattered Load	(3)	-4.4%	kWh	(1,562)	-0.5%	3,597	1.1%	235	4.1%	324	5.7%
Sentinel Lighting	-	0.0%	kW	(40)	-15.5%	(36)	-14.2%	(0)	-15.5%	(0)	-14.2%
Street Lighting	-	0.0%	kW	(1,546)	-50.8%	(1,507)	-50.0%	(1,546)	-50.8%	(1,507)	-50.0%
Total	138	1.9%									

2019 Actual to 2020 Actual

Table 3-25 compares distribution revenues for 2019 Actuals against 2020 Actuals. Table 3-26 compares the billing determinants (customers/connections and volumes).

2020 Actual distribution revenue was \$3,747,403 or \$71,986 higher than 2019 Actuals, with a positive revenue variance of \$105,163 attributable to the Residential class. Additional revenue attributable to the Residential class relates to the addition of 171 customers and an Annual IR rate escalation, with the addition of GS <50kW and GS 50 to 499kW customers more than offset by revenue losses in the GS 500 to 1,499kW and GS 1,500 to 4,999kW rate classes. Significant revenue losses in the larger GS rate classes, though consistent with a general trend in declining revenues, were exacerbated in 2020 by the COVID-19 pandemic.

Table 3-25: Distribution Revenue - 2019 Actual vs 2020 Actual

Distribution Throughput Revenue	2019 Actual	2020 Actual	Difference (\$)	Difference (%)
Residential	2,234,996	2,340,159	105,163	4.7%
General Service < 50 kW	606,112	623,023	16,912	2.8%
General Service 50 to 499 kW	406,895	431,016	24,121	5.9%
General Service 500 to 1499 kW	245,994	179,738	(66,256)	-26.9%
General Service 1500-4999 kW	129,147	121,468	(7,679)	-5.9%
Unmetered Scattered Load	9,476	9,630	154	1.6%
Sentinel Lighting	8,232	8,037	(195)	-2.4%
Street Lighting	34,564	34,331	(232)	-0.7%
Total	3,675,417	3,747,403	71,986	2.0%

Table 3-26: Billing Determinants - 2019 Actual vs 2020 Actual

Rate Class	Customers / Connections		Units	Volume		Volume (Wthr Nrm)		Annual Usage per Customer / Connection		Annual Usage per Customer / Connection (Wthr Nrm)	
	2019 Actual	2020 Actual		2019 Actual	2020 Actual	2019 Actual	2020 Actual	2019 Actual	2020 Actual	2019 Actual	2020 Actual
Residential	6,652	6,823	kWh	51,949,017	55,641,421	52,189,972	55,437,587	7,810	8,154	7,846	8,125
General Service < 50 kW	655	665	kWh	21,167,458	21,397,531	21,265,639	21,319,144	32,325	32,181	32,475	32,063
General Service 50 to 499 kW	78	81	kW	131,386	137,702	131,996	137,198	1,683	1,700	1,690	1,694
General Service 500 to 1499 kW	12	8	kW	91,315	76,763	91,739	76,481	7,883	9,595	7,920	9,560
General Service 1500-4999 kW	2	2	kW	60,560	53,165	60,841	52,970	30,280	26,582	30,420	26,485
Unmetered Scattered Load	57	57	kWh	340,304	340,496	341,882	339,249	6,005	5,991	6,033	5,969
Sentinel Lighting	112	112	kW	217	202	218	202	2	2	2	2
Street Lighting	1	1	kW	1,498	1,416	1,505	1,411	1,498	1,416	1,505	1,411
Total	7,568	7,749									
Variance	Count	%		Volume	%	Volume	%	Dollars	%	Dollars	%
Residential	171	2.6%	kWh	3,692,404	7.1%	3,247,614	6.2%	345	4.4%	279	3.6%
General Service < 50 kW	10	1.5%	kWh	230,073	1.1%	53,505	0.3%	(144)	-0.4%	(412)	-1.3%
General Service 50 to 499 kW	3	3.7%	kW	6,316	4.8%	5,202	3.9%	17	1.0%	3	0.2%
General Service 500 to 1499 kW	(4)	-30.9%	kW	(14,553)	-15.9%	(15,257)	-16.6%	1,712	21.7%	1,640	20.7%
General Service 1500-4999 kW	-	0.0%	kW	(7,395)	-12.2%	(7,871)	-12.9%	(3,698)	-12.2%	(3,935)	-12.9%
Unmetered Scattered Load	0	0.3%	kWh	192	0.1%	(2,634)	-0.8%	(14)	-0.2%	(64)	-1.1%
Sentinel Lighting	0	0.1%	kW	(14)	-6.5%	(16)	-7.3%	(0)	-6.6%	(0)	-7.4%
Street Lighting	-	0.0%	kW	(82)	-5.5%	(94)	-6.3%	(82)	-5.5%	(94)	-6.3%
Total	181	2.4%									

2020 Actual to 2021 Actual

Table 3-27 compares distribution revenues for 2020 Actuals against 2021 Actuals. Table 3-28 compares the billing determinants (customers/connections and volumes).

2021 Actual distribution revenue was \$3,927,504 or \$180,101 higher than 2020 Actuals, marked by Residential customer additions in excess of historical norms at 284, and positive revenue variances in most GS rate classes as COVID-19 measures for businesses lessened in 2021 relative to 2020.

Table 3-27: Distribution Revenue - 2020 Actual vs 2021 Actual

Distribution Throughput Revenue	2020 Actual	2021 Actual	Difference (\$)	Difference (%)
Residential	2,340,159	2,476,793	136,634	5.8%
General Service < 50 kW	623,023	628,869	5,845	0.9%
General Service 50 to 499 kW	431,016	450,692	19,676	4.6%
General Service 500 to 1499 kW	179,738	195,479	15,741	8.8%
General Service 1500-4999 kW	121,468	120,820	(648)	-0.5%
Unmetered Scattered Load	9,630	9,783	153	1.6%
Sentinel Lighting	8,037	8,141	104	1.3%
Street Lighting	34,331	36,926	2,595	7.6%
Total	3,747,403	3,927,504	180,101	4.8%

Table 3-28: Billing Determinants - 2020 Actual vs 2021 Actual

Rate Class	Customers / Connections		Units	Volume		Volume (Wthr Nrm)		Annual Usage per Customer / Connection		Annual Usage per Customer / Connection (Wthr Nrm)	
	2020 Actual	2021 Actual		2020 Actual	2021 Actual	2020 Actual	2021 Actual	2020 Actual	2021 Actual	2020 Actual	2021 Actual
Residential	6,823	7,107	kWh	55,641,421	57,807,950	55,437,587	57,773,982	8,154	8,133	8,125	8,129
General Service < 50 kW	665	672	kWh	21,397,531	21,062,932	21,319,144	21,050,555	32,181	31,328	32,063	31,310
General Service 50 to 499 kW	81	77	kW	137,702	146,508	137,198	146,422	1,700	1,895	1,694	1,893
General Service 500 to 1499 kW	8	9	kW	76,763	82,837	76,481	82,788	9,595	9,745	9,560	9,740
General Service 1500-4999 kW	2	2	kW	53,165	50,923	52,970	50,894	26,582	25,462	26,485	25,447
Unmetered Scattered Load	57	57	kWh	340,496	340,760	339,249	340,560	5,991	5,996	5,969	5,992
Sentinel Lighting	112	112	kW	202	202	202	201	2	2	2	2
Street Lighting	1	1	kW	1,416	1,647	1,411	1,646	1,416	1,647	1,411	1,646
Total	7,749	8,037									
Variance	Count	%		Volume	%	Volume	%	Dollars	%	Dollars	%
Residential	284	4.2%	kWh	2,166,529	3.9%	2,336,395	4.2%	(21)	-0.3%	4	0.1%
General Service < 50 kW	7	1.1%	kWh	(334,599)	-1.6%	(268,589)	-1.3%	(853)	-2.6%	(753)	-2.3%
General Service 50 to 499 kW	(4)	-4.5%	kW	8,806	6.4%	9,224	6.7%	194	11.4%	200	11.8%
General Service 500 to 1499 kW	1	6.3%	kW	6,074	7.9%	6,307	8.2%	150	1.6%	180	1.9%
General Service 1500-4999 kW	-	0.0%	kW	(2,241)	-4.2%	(2,076)	-3.9%	(1,121)	-4.2%	(1,038)	-3.9%
Unmetered Scattered Load	-	0.0%	kWh	264	0.1%	1,311	0.4%	5	0.1%	23	0.4%
Sentinel Lighting	(0)	-0.1%	kW	(1)	-0.4%	(0)	-0.1%	(0)	-0.4%	(0)	-0.1%
Street Lighting	-	0.0%	kW	231	16.3%	235	16.6%	231	16.3%	235	16.6%
Total	288	3.7%									

2021 Actual to 2022 Actual

Table 3-29 compares distribution revenues for 2021 Actuals against 2022 Actuals. Table 3-30 compares the billing determinants (customers/connections and volumes).

2022 Actual distribution revenue was \$4,139,574 or \$212,070 higher than 2021 Actuals, marked by continued growth in the Residential customer class, as well as some customer growth in the GS <50kW class, and volumetric growth in the GS 50 to 499kW class. These increases in revenue for smaller consumers were partially offset by a significant reduction of \$44,573 in the GS 500 to 1,499kW rate class, driven by customer and volumetric reductions.

Table 3-29: Distribution Revenue - 2021 Actual vs 2022 Actual

Distribution Throughput Revenue	2021 Actual	2022 Actual	Difference (\$)	Difference (%)
Residential	2,476,793	2,654,219	177,426	7.2%
General Service < 50 kW	628,869	668,702	39,833	6.3%
General Service 50 to 499 kW	450,692	488,383	37,690	8.4%
General Service 500 to 1499 kW	195,479	150,906	(44,573)	-22.8%
General Service 1500-4999 kW	120,820	120,811	(9)	0.0%
Unmetered Scattered Load	9,783	9,951	167	1.7%
Sentinel Lighting	8,141	8,488	347	4.3%
Street Lighting	36,926	38,115	1,189	3.2%
Total	3,927,504	4,139,574	212,070	5.4%

Table 3-30: Billing Determinants - 2021 Actual vs 2022 Actual

Rate Class	Customers / Connections		Units	Volume		Volume (Wthr NrmI)		Annual Usage per Customer / Connection		Annual Usage per Customer / Connection (Wthr NrmI)	
	2021 Actual	2022 Actual		2021 Actual	2022 Actual	2021 Actual	2022 Actual	2021 Actual	2022 Actual	2021 Actual	2022 Actual
	Residential	7,107		7,417	kWh	57,807,950	59,629,357	57,773,982	60,083,010	8,133	8,039
General Service < 50 kW	672	682	kWh	21,062,932	23,000,509	21,050,555	23,175,494	31,328	33,713	31,310	33,969
General Service 50 to 499 kW	77	74	kW	146,508	160,486	146,422	161,707	1,895	2,164	1,893	2,180
General Service 500 to 1499 kW	9	6	kW	82,837	73,360	82,788	73,918	9,745	12,227	9,740	12,320
General Service 1500-4999 kW	2	2	kW	50,923	48,074	50,894	48,440	25,462	24,037	25,447	24,220
Unmetered Scattered Load	57	56	kWh	340,760	338,890	340,560	341,468	5,996	6,061	5,992	6,107
Sentinel Lighting	112	116	kW	202	202	201	203	2	2	2	2
Street Lighting	1	1	kW	1,647	1,668	1,646	1,680	1,647	1,668	1,646	1,680
Total	8,037	8,355									
Variance	Count	%		Volume	%	Volume	%	Dollars	%	Dollars	%
Residential	310	4.4%	kWh	1,821,407	3.2%	2,309,028	4.0%	(94)	-1.2%	(28)	-0.3%
General Service < 50 kW	10	1.5%	kWh	1,937,578	9.2%	2,124,939	10.1%	2,385	7.6%	2,660	8.5%
General Service 50 to 499 kW	(3)	-4.1%	kW	13,978	9.5%	15,285	10.4%	269	14.2%	287	15.2%
General Service 500 to 1499 kW	(3)	-29.4%	kW	(9,476)	-11.4%	(8,870)	-10.7%	2,481	25.5%	2,580	26.5%
General Service 1500-4999 kW	-	0.0%	kW	(2,849)	-5.6%	(2,453)	-4.8%	(1,425)	-5.6%	(1,227)	-4.8%
Unmetered Scattered Load	(1)	-1.6%	kWh	(1,870)	-0.5%	909	0.3%	65	1.1%	114	1.9%
Sentinel Lighting	4	3.6%	kW	(0)	0.0%	2	0.8%	(0)	-3.5%	(0)	-2.7%
Street Lighting	-	0.0%	kW	21	1.3%	35	2.1%	21	1.3%	35	2.1%
Total	317	3.9%									

2022 Actual to 2023 Bridge

Table 3-31 compares distribution revenues for 2022 Actuals against the 2023 Bridge Year.

Table 3-32 compares the billing determinants (customers/connections and volumes).

2023 Bridge distribution revenue is forecast to be \$4,339,570, or \$199,996 higher than 2022 Actuals. The sole rate class exhibiting a material variance between these years is the Residential class with additional revenues of \$157,816, driven by the addition of 206 customers and an Annual IR escalation.

Table 3-31: Distribution Revenue - 2022 Actual vs 2023 Bridge

Distribution Throughput Revenue	2022 Actual	2023 Bridge	Difference (\$)	Difference (%)
Residential	2,654,219	2,812,035	157,816	5.9%
General Service < 50 kW	668,702	702,485	33,783	5.1%
General Service 50 to 499 kW	488,383	508,490	20,107	4.1%
General Service 500 to 1499 kW	150,906	141,063	(9,843)	-6.5%
General Service 1500-4999 kW	120,811	117,387	(3,423)	-2.8%
Unmetered Scattered Load	9,951	10,139	189	1.9%
Sentinel Lighting	8,488	8,596	108	1.3%
Street Lighting	38,115	39,374	1,259	3.3%
Total	4,139,574	4,339,570	199,996	4.8%

Table 3-32: Billing Determinants - 2022 Actual vs 2023 Bridge

2022 Weather Normal Conversion Factor 1.0076

Rate Class	Customers / Connections		Units	Volume		Volume (Wthr Nrm)		Annual Usage per Customer / Connection		Annual Usage per Customer / Connection (Wthr Nrm)	
	2022 Actual	2023 Bridge		2022 Actual	2023 Bridge	2022 Actual	2023 Bridge	2022 Actual	2023 Bridge	2022 Actual	2023 Bridge
	Residential	7,417		7,623	kWh	59,629,357	59,512,317	60,083,010	60,052,364	8,039	7,807
General Service < 50 kW	682	690	kWh	23,000,509	22,590,994	23,175,494	22,795,997	33,713	32,738	33,969	33,035
General Service 50 to 499 kW	74	73	kW	160,486	163,381	161,707	164,864	2,164	2,230	2,180	2,251
General Service 500 to 1499 kW	6	6	kW	73,360	62,156	73,918	62,720	12,227	11,280	12,320	11,382
General Service 1500-4999 kW	2	2	kW	48,074	42,700	48,440	43,087	24,037	21,350	24,220	21,544
Unmetered Scattered Load	56	55	kWh	338,890	335,322	341,468	338,364	6,061	6,061	6,107	6,116
Sentinel Lighting	116	116	kW	202	196	203	198	2	2	2	2
Street Lighting	1	1	kW	1,668	1,676	1,680	1,691	1,668	1,676	1,680	1,691
Total	8,355	8,566									
Variance	Count	%		Volume	%	Volume	%	Dollars	%	Dollars	%
Residential	206	2.8%	kWh	(117,040)	-0.2%	(30,646)	-0.1%	(232)	-2.9%	(223)	-2.7%
General Service < 50 kW	8	1.1%	kWh	(409,516)	-1.8%	(379,498)	-1.6%	(975)	-2.9%	(934)	-2.7%
General Service 50 to 499 kW	(1)	-1.2%	kW	2,895	1.8%	3,157	2.0%	67	3.1%	70	3.2%
General Service 500 to 1499 kW	(0)	-8.2%	kW	(11,204)	-15.3%	(11,198)	-15.1%	(947)	-7.7%	(937)	-7.6%
General Service 1500-4999 kW	-	0.0%	kW	(5,374)	-11.2%	(5,353)	-11.0%	(2,687)	-11.2%	(2,676)	-11.0%
Unmetered Scattered Load	(1)	-1.1%	kWh	(3,568)	-1.1%	(3,104)	-0.9%	-	0.0%	9	0.1%
Sentinel Lighting	(0)	-0.4%	kW	(6)	-2.8%	(5)	-2.6%	(0)	-2.4%	(0)	-2.3%
Street Lighting	-	0.0%	kW	8	0.5%	11	0.6%	8	0.5%	11	0.6%
Total	211	2.5%									

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2023 Bridge to 2024 Test

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Table 3-33 compares distribution revenues for the 2024 Test Year at existing 2023 rates against the 2023 Bridge Year. Table 3-34 compares distribution revenues for the 2024 Test Year at proposed rates against the 2023 Bridge Year. Table 3-35 compares the billing determinants (customers/connections and volumes).

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Table 3-33 illustrates the impact of billing determinant changes between the 2023 Bridge Year and 2024 Test Year on distribution revenue, since distribution rates are held constant, while Table 3-34 illustrates both changes in billing determinants and implementation of proposed 2024 rates.

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Table 3-33: Distribution Revenue - 2023 Bridge vs 2024 Test at Current Rates

Distribution Throughput Revenue	2023 Bridge	2024 Test	Difference (\$)	Difference (%)
Residential	2,812,035	2,890,071	78,036	2.8%
General Service < 50 kW	702,485	714,056	11,571	1.6%
General Service 50 to 499 kW	508,490	504,171	(4,318)	-0.8%
General Service 500 to 1499 kW	141,063	129,663	(11,400)	-8.1%
General Service 1500-4999 kW	117,387	117,478	90	0.1%
Unmetered Scattered Load	10,139	10,033	(107)	-1.1%
Sentinel Lighting	8,596	8,566	(30)	-0.4%
Street Lighting	39,374	39,374	-	0.0%
Total	4,339,570	4,413,412	73,842	1.7%

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1 **Table 3-34: Distribution Revenue - 2023 Bridge vs 2024 Test at Proposed Rates**

Distribution Throughput Revenue	2023 Bridge	2024 Test	Difference (\$)	Difference (%)
Residential	2,812,035	3,434,300	622,266	22.1%
General Service < 50 kW	702,485	714,599	12,114	1.7%
General Service 50 to 499 kW	508,490	727,607	219,117	43.1%
General Service 500 to 1499 kW	141,063	126,186	(14,877)	-10.5%
General Service 1500-4999 kW	117,387	113,883	(3,505)	-3.0%
Unmetered Scattered Load	10,139	13,021	2,881	28.4%
Sentinel Lighting	8,596	24,541	15,945	185.5%
Street Lighting	39,374	28,247	(11,128)	-28.3%
Total	4,339,570	5,182,383	842,813	19.4%

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 3 **Table 3-35: Billing Determinants - 2023 Bridge vs 2024 Test**

Rate Class	Customers / Connections		Units	Volume (Wthr Nrml)		Annual Usage per Customer / Connection (Wthr Nrml)	
	2023 Bridge	2024 Test		2023 Bridge	2024 Test	2023 Bridge	2024 Test
Residential	7,623	7,835	kWh	59,512,317	61,627,888	7,807	7,866
General Service < 50 kW	690	698	kWh	22,590,994	23,022,735	32,738	32,986
General Service 50 to 499 kW	73	72	kW	163,381	162,219	2,230	2,242
General Service 500 to 1499 kW	6	5	kW	62,156	57,274	11,280	11,318
General Service 1500-4999 kW	2	2	kW	42,700	42,760	21,350	21,380
Unmetered Scattered Load	55	55	kWh	335,322	331,791	6,061	6,061
Sentinel Lighting	116	115	kW	196	195	2	2
Street Lighting	1	1	kW	1,676	1,676	1,676	1,676
Total	8,566	8,783					
Variance	Count	%		Volume	%	Dollars	%
Residential	212	2.8%	kWh	2,115,571	3.6%	59	0.8%
General Service < 50 kW	8	1.1%	kWh	431,741	1.9%	248	0.8%
General Service 50 to 499 kW	(1)	-1.2%	kW	(1,162)	-0.7%	12	0.5%
General Service 500 to 1499 kW	(0)	-8.2%	kW	(4,882)	-7.9%	38	0.3%
General Service 1500-4999 kW	-	0.0%	kW	60	0.1%	30	0.1%
Unmetered Scattered Load	(1)	-1.1%	kWh	(3,531)	-1.1%	-	0.0%
Sentinel Lighting	(0)	-0.4%	kW	(1)	-0.4%	-	0.0%
Street Lighting	-	0.0%	kW	-	0.0%	-	0.0%
Total	217	2.5%					

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APPENDIX A: MONTHLY DATA USED IN REGRESSION MODEL

Month	<u>Wholesale Purchases</u>	<u>Embedded Generation</u>	<u>Power Purchases</u>	<u>Shut Down Adjustment</u>	<u>Reduced Load Adjustment</u>	<u>Adjusted Power Purchases</u>	<u>Heating Degree Days</u>	<u>Cooling Degree Days</u>	<u>Days in Month</u>	<u>Spring Fall Flag</u>	<u>Number of Customers</u>	<u>Covid Flag</u>	<u>Predicted Purchases</u>
Jan-16	17,214,579	62,080	17,276,658	1,398,553	4,160,319	11,717,786	700	0	31	0	6,973	0	11,241,706
Feb-16	16,327,742	71,513	16,399,255	1,222,411	4,296,012	10,880,833	604	0	29	0	6,976	0	10,405,940
Mar-16	16,387,709	128,194	16,515,903	1,328,244	4,380,083	10,807,576	467	0	31	1	6,984	0	10,333,572
Apr-16	15,295,316	189,041	15,484,357	1,253,862	4,125,932	10,104,564	391	0	30	1	6,995	0	9,878,104
May-16	15,349,498	239,388	15,588,886	1,195,533	4,159,262	10,234,091	148	26	31	1	7,003	0	10,521,537
Jun-16	16,760,017	264,615	17,024,632	1,306,219	4,271,213	11,447,200	43	44	30	0	7,015	0	11,024,639
Jul-16	17,584,613	249,447	17,834,060	1,366,766	3,813,953	12,653,341	4	109	31	0	7,029	0	13,239,964
Aug-16	20,027,555	228,669	20,256,223	1,456,378	4,753,917	14,045,928	1	124	31	0	7,045	0	13,706,286
Sep-16	17,024,200	191,589	17,215,789	1,349,320	4,536,644	11,329,826	41	40	30	1	7,053	0	10,488,652
Oct-16	15,911,420	132,640	16,044,060	1,234,721	4,536,508	10,272,832	213	3	31	1	7,064	0	10,075,311
Nov-16	15,908,145	91,505	15,999,650	1,266,139	4,373,436	10,360,075	365	0	30	0	7,067	0	10,423,458
Dec-16	16,116,946	14,828	16,131,774	1,137,070	3,672,970	11,321,735	645	0	31	0	7,085	0	11,316,956
Jan-17	17,123,786	40,918	17,164,705	1,299,340	4,258,095	11,607,269	605	0	31	0	7,094	0	11,255,572
Feb-17	15,034,183	98,843	15,133,026	1,201,381	3,901,376	10,030,269	508	0	28	0	7,111	0	10,108,851
Mar-17	16,518,332	144,381	16,662,714	1,325,849	4,291,491	11,045,374	568	0	31	1	7,115	0	10,737,528
Apr-17	13,982,813	180,226	14,163,039	1,205,714	3,567,728	9,389,597	256	0	30	1	7,119	0	9,818,129
May-17	15,061,646	211,938	15,273,584	1,314,156	3,987,886	9,971,542	195	7	31	1	7,125	0	10,256,541
Jun-17	16,237,905	236,829	16,474,733	1,376,051	3,867,008	11,231,674	37	60	30	0	7,136	0	11,676,938
Jul-17	16,605,648	225,249	16,830,897	1,358,368	3,233,481	12,239,048	1	78	31	0	7,145	0	12,505,175
Aug-17	16,791,868	209,082	17,000,951	1,152,624	3,878,368	11,969,958	24	43	31	0	7,160	0	11,534,536
Sep-17	15,184,922	202,752	15,387,674	1,015,208	3,513,213	10,859,253	71	53	30	1	7,167	0	11,111,706
Oct-17	14,823,921	127,444	14,951,365	941,288	3,734,043	10,276,033	184	5	31	1	7,177	0	10,240,147
Nov-17	15,176,795	76,466	15,253,261	892,085	3,835,597	10,525,579	448	0	30	0	7,191	0	10,780,148
Dec-17	15,312,050	29,462	15,341,512	768,932	3,124,272	11,448,309	730	0	31	0	7,190	0	11,646,893
Jan-18	16,892,329	37,099	16,929,428	920,894	3,911,966	12,096,569	765	0	31	0	7,199	0	11,727,705
Feb-18	14,940,712	50,870	14,991,582	760,194	3,678,957	10,552,432	585	0	28	0	7,202	0	10,401,896
Mar-18	15,870,053	157,402	16,027,455	806,290	3,925,852	11,295,313	592	0	31	1	7,212	0	10,936,717
Apr-18	14,690,755	155,665	14,846,420	722,326	3,713,769	10,410,325	454	0	30	1	7,220	0	10,358,305
May-18	15,199,976	229,193	15,429,168	825,640	3,812,144	10,791,384	84	37	31	1	7,230	0	11,090,186

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Month	Wholesale Purchases	Embedded Generation	Power Purchases	Shut Down Adjustment	Reduced Load Adjustment	Adjusted Power Purchases	Heating Degree Days	Cooling Degree Days	Days in Month	Spring Fall Flag	Number of Customers	Covid Flag	Predicted Purchases
Jun-18	15,726,340	208,452	15,934,792	784,226	3,559,018	11,591,548	23	46	30	0	7,247	0	11,419,890
Jul-18	17,253,026	237,873	17,490,899	792,778	3,396,535	13,301,586	4	92	31	0	7,270	0	13,101,843
Aug-18	17,560,845	198,710	17,759,555	827,924	3,522,904	13,408,728	4	107	31	0	7,289	0	13,600,783
Sep-18	15,504,314	151,818	15,656,132	797,357	3,371,796	11,486,979	69	59	30	1	7,297	0	11,486,419
Oct-18	15,079,923	103,571	15,183,494	847,708	3,547,209	10,788,577	294	9	31	1	7,309	0	10,787,728
Nov-18	15,240,430	36,531	15,276,961	844,670	3,441,518	10,990,773	527	0	30	0	7,309	0	11,120,373
Dec-18	14,436,070	31,997	14,468,068	620,430	2,779,734	11,067,903	574	0	31	0	7,329	0	11,570,439
Jan-19	16,295,155	46,540	16,341,695	407,406	3,683,036	12,251,253	779	0	31	0	7,335	0	11,972,075
Feb-19	14,247,812	62,627	14,310,438	332,491	3,240,576	10,737,372	636	0	28	0	7,343	0	10,725,072
Mar-19	14,861,723	152,139	15,013,862	257,081	3,459,058	11,297,723	617	0	31	1	7,347	0	11,201,246
Apr-19	13,124,082	151,196	13,275,278	203,874	3,178,347	9,893,058	347	0	30	1	7,358	0	10,373,586
May-19	13,301,422	191,846	13,493,268	178,686	3,335,680	9,978,902	184	2	31	1	7,367	0	10,472,392
Jun-19	14,098,154	205,535	14,303,689	166,608	3,264,723	10,872,357	38	30	30	0	7,382	0	11,199,165
Jul-19	17,237,421	234,680	17,472,102	181,458	3,433,937	13,856,707	0	127	31	0	7,383	0	14,334,362
Aug-19	16,150,314	220,609	16,370,922	182,486	3,410,964	12,777,472	11	67	31	0	7,409	0	12,597,019
Sep-19	14,159,845	176,014	14,335,859	174,130	3,388,940	10,772,790	48	24	30	1	7,446	0	10,644,238
Oct-19	13,763,437	131,017	13,894,453	182,414	3,391,532	10,320,507	248	4	31	1	7,456	0	10,802,288
Nov-19	14,270,972	54,537	14,325,509	189,034	3,150,962	10,985,514	527	0	30	0	7,479	0	11,392,577
Dec-19	14,104,425	40,652	14,145,078	156,380	2,676,041	11,312,657	536	0	31	0	7,489	0	11,754,504
Jan-20	15,014,092	35,137	15,049,228	171,027	3,175,806	11,702,396	603	0	31	0	7,508	0	11,912,193
Feb-20	14,192,238	77,810	14,270,047	163,565	3,106,058	11,000,424	603	0	29	0	7,522	0	11,276,485
Mar-20	13,448,797	139,742	13,588,539	155,746	2,605,805	10,826,988	463	0	31	1	7,534	0	11,207,077
Apr-20	10,036,079	191,302	10,227,380	130,251	981,047	9,116,083	382	0	30	1	7,547	1	9,114,882
May-20	11,027,736	221,551	11,249,287	127,787	1,321,735	9,799,765	213	23	31	1	7,550	1	9,800,966
Jun-20	15,117,287	271,293	15,388,580	140,825	2,831,032	12,416,723	34	60	30	0	7,557	0	12,352,312
Jul-20	18,014,751	250,059	18,264,810	162,185	3,020,618	15,082,006	0	159	31	0	7,566	0	15,575,953
Aug-20	16,733,869	221,686	16,955,555	158,669	3,014,863	13,782,024	6	76	31	0	7,581	0	13,134,374
Sep-20	14,451,425	189,578	14,641,003	149,562	3,076,656	11,414,786	92	11	30	1	7,596	0	10,581,774
Oct-20	14,304,932	116,353	14,421,286	146,356	3,018,748	11,256,182	273	0	31	1	7,650	0	11,029,143
Nov-20	14,279,909	82,903	14,362,813	165,564	2,950,186	11,247,063	354	0	30	0	7,665	0	11,360,162

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Dec-20	14,921,507	40,423	14,961,930	196,767	2,363,231	12,401,932	568	0	31	0	7,688	0	12,133,200
Jan-21	15,381,838	41,700	15,423,538	543,748	2,652,844	12,226,946	615	0	31	0	7,720	0	12,275,411
Feb-21	14,338,373	36,905	14,375,278	463,831	2,406,119	11,505,328	693	0	28	0	7,739	0	11,466,097
Mar-21	14,839,570	197,009	15,036,579	537,531	2,855,575	11,643,472	456	0	31	1	7,764	0	11,560,711
Apr-21	12,258,026	195,594	12,453,621	208,736	2,127,833	10,117,052	303	0	30	1	7,789	0	10,978,943
May-21	13,244,338	234,501	13,478,839	137,710	2,246,885	11,094,245	176	20	31	1	7,811	0	11,687,852
Jun-21	15,554,414	235,576	15,789,990	157,595	2,636,157	12,996,237	21	88	30	0	7,846	0	13,625,696
Jul-21	15,685,343	213,581	15,898,924	155,917	2,079,124	13,663,883	6	77	31	0	7,883	0	13,641,744
Aug-21	17,774,633	222,339	17,996,972	171,946	2,857,705	14,967,322	2	113	31	0	7,901	0	14,742,931
Sep-21	14,020,372	193,180	14,213,552	148,190	2,457,488	11,607,875	58	12	30	1	7,934	0	11,091,473
Oct-21	13,896,446	100,673	13,997,120	161,879	2,421,665	11,413,576	157	10	31	1	7,977	0	11,636,620
Nov-21	14,538,014	75,643	14,613,657	216,919	2,535,706	11,861,032	448	0	30	0	8,016	0	12,099,664
Dec-21	14,738,840	46,960	14,785,799	205,565	2,333,799	12,246,435	515	0	31	0	8,043	0	12,601,195
Jan-22	16,412,005	39,551	16,451,556	229,885	2,704,684	13,516,987	825	0	31	0	8,062	0	13,221,547
Feb-22	14,716,424	71,043	14,787,467	215,472	2,459,020	12,112,975	635	0	28	0	8,086	0	11,911,374
Mar-22	15,784,695	118,490	15,903,186	258,483	2,650,069	12,994,633	499	0	31	1	8,093	0	12,169,221
Apr-22	13,400,987	183,398	13,584,385	215,328	2,124,042	11,245,015	372	0	30	1	8,106	0	11,617,891
May-22	14,301,607	237,125	14,538,732	190,188	2,149,732	12,198,812	121	24	31	1	8,119	0	12,190,818
Jun-22	15,576,117	248,877	15,824,995	186,476	2,378,715	13,259,804	37	46	30	0	8,166	0	12,904,375
Jul-22	17,012,437	229,152	17,241,589	188,489	2,333,899	14,719,201	1	80	31	0	8,192	0	14,229,881
Aug-22	17,747,490	216,120	17,963,610	201,468	2,759,316	15,002,826	2	72	31	0	8,221	0	14,026,658
Sep-22	14,825,219	177,423	15,002,641	184,986	2,284,987	12,532,668	70	27	30	1	8,244	0	12,059,864
Oct-22	13,962,207	150,970	14,113,177	203,935	2,142,062	11,767,180	254	0	31	1	8,288	0	12,013,008
Nov-22	14,546,118	89,130	14,635,248	227,344	2,384,246	12,023,658	401	0	30	0	8,301	0	12,478,664
Dec-22	15,060,787	37,384	15,098,171	219,978	2,024,508	12,853,685	557	0	31	0	8,315	0	13,116,083
Jan-23							699	0	31	0	8,327	0	13,405,570
Feb-23							609	0	28	0	8,340	0	12,266,675
Mar-23							523	0	31	1	8,352	0	12,628,693
Apr-23							358	0	30	1	8,364	0	12,003,434
May-23							160	20	31	1	8,376	0	12,561,255

Month	Wholesale Purchases	Embedded Generation	Power Purchases	Shut Down Adjustment	Reduced Load Adjustment	Adjusted Power Purchases	Heating Degree Days	Cooling Degree Days	Days in Month	Spring Fall Flag	Number of Customers	Covid Flag	Predicted Purchases
Jun-23							33	53	30	0	8,389	0	13,484,511
Jul-23							2	103	31	0	8,401	0	15,252,205
Aug-23							7	86	31	0	8,413	0	14,770,983
Sep-23							64	32	30	1	8,426	0	12,492,513
Oct-23							232	5	31	1	8,438	0	12,344,620
Nov-23							438	0	30	0	8,451	0	12,778,729
Dec-23							589	0	31	0	8,463	0	13,413,870
Jan-24							699	0	31	0	8,486	0	13,659,301
Feb-24							609	0	29	0	8,509	0	12,866,556
Mar-24							523	0	31	1	8,532	0	12,916,512
Apr-24							358	0	30	1	8,555	0	12,308,402
May-24							160	20	31	1	8,578	0	12,883,442
Jun-24							33	53	30	0	8,601	0	13,823,988
Jul-24							2	103	31	0	8,624	0	15,609,043
Aug-24							7	86	31	0	8,648	0	15,145,252
Sep-24							64	32	30	1	8,671	0	12,884,286
Oct-24							232	5	31	1	8,694	0	12,753,968
Nov-24							438	0	30	0	8,718	0	13,205,722
Dec-24							589	0	31	0	8,741	0	13,858,582

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**APPENDIX B: OEB APPPENDIX 2-IB ACTUAL AND FORECAST
ANALYSIS**

Appendix 2-IB
 Customer, Connections, Load Forecast and Revenues Data and Analysis

Customer Numbers

This sheet is to be filled in accordance with the instructions documented in section 2.3.2 of Chapter 2 of the Filing Requirements for Distribution Rate Applications, in terms of one set of tables per customer class.

Customers/Connections													
Rate Class	Last Board Approved	Historical 2013	Historical 2014	Historical 2015	Historical 2016	Historical 2017	Historical 2018	Historical 2019	Historical 2020	Historical 2021	Historical 2022	Bridge Year 2023	Test Year 2024
Residential	6042	6072	6145	6205	6294	6409	6516	6652	6823	7107	7417	7623	7835
GS-50	666	630	634	637	637	642	648	655	665	672	682	690	698
GS 50-499kW	85	90	89	90	80	80	80	78	81	77	74	73	72
GS 500-1499kW	9	0	0	0	10	10	12	12	8	9	6	6	5
GS 1500-4999 kW	2	2	2	2	2	2	2	2	2	2	2	2	2
USL	62	59	60	60	60	59	57	57	57	56	55	55	55
Sentinel Lighting	127	124	124	119	119	113	112	112	112	112	116	116	115
Street Lighting	1	1	1	1	1	1	1	1	1	1	1	1	1
Total	6,994	6,978	7,055	7,113	7,202	7,316	7,431	7,568	7,749	8,037	8,355	8,566	8,783

Customers/Connections Variance Analysis												
Rate Class	Historical 2013	Historical 2014	Historical 2015	Historical 2016	Historical 2017	Historical 2018	Historical 2019	Historical 2020	Historical 2021	Historical 2022	Bridge Year 2023	Test Year 2024
Residential	0%	1%	1%	1%	2%	2%	3%	4%	4%	4%	3%	3%
GS-50	-5%	1%	1%	0%	1%	1%	2%	1%	1%	1%	1%	1%
GS 50-499kW	-5%	0%	1%	-1%	0%	0%	-2%	4%	-5%	-4%	-1%	-1%
GS 500-1499kW	-100%	0%	0%	0%	4%	18%	-6%	-31%	0%	-29%	-8%	-8%
GS 1500-4999 kW	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
USL	-5%	1%	0%	0%	-2%	1%	-4%	0%	0%	-2%	-1%	-1%
Sentinel Lighting	-2%	0%	-4%	0%	-5%	-1%	0%	0%	0%	4%	0%	0%
Street Lighting	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Total	0%	1%	1%	-1%	2%	2%	2%	4%	4%	4%	3%	3%

Consumption (Actual)													
Rate Class	Last Board Approved	Historical 2013	Historical 2014	Historical 2015	Historical 2016	Historical 2017	Historical 2018	Historical 2019	Historical 2020	Historical 2021	Historical 2022	Bridge Year 2023	Test Year 2024
Residential	49,906,667	-	-	-	50,305,890	48,524,267	52,869,436	51,949,017	55,641,421	57,807,950	59,629,357	59,512,317	61,627,888
GS-50	22,650,334	-	-	-	21,381,406	20,751,635	21,318,676	21,167,458	21,397,531	21,062,932	23,000,509	22,590,994	23,022,735
GS 50-499kW	38,065,105	-	-	-	44,889,119	42,593,613	42,394,629	42,725,411	43,788,589	46,750,240	54,079,512	52,318,523	51,946,339
GS 500-1499kW	36,286,504	-	-	-	42,123,343	39,292,385	38,925,221	38,159,132	25,142,092	27,055,986	23,129,478	20,958,055	19,312,053
GS 1500-4999 kW	34,524,454	-	-	-	35,542,049	30,775,850	28,687,524	26,720,406	20,564,791	18,499,236	17,800,153	17,702,283	17,727,224
USL	421,538	-	-	-	386,201	367,143	341,866	340,304	340,496	340,760	338,890	335,322	331,791
Sentinel Lighting	116,952	-	-	-	102,641	98,397	95,815	79,644	75,008	72,438	72,091	71,836	71,581
Street Lighting	1,405,153	-	-	-	1,427,618	1,422,829	1,117,131	545,652	527,637	607,361	619,623	619,623	619,623
Total	183,376,707	-	-	-	195,838,265	183,826,118	183,750,499	171,687,025	167,477,566	172,196,903	178,660,614	174,108,951	174,659,234

Consumption (Actual) Variance Analysis												
Rate Class	Historical 2013	Historical 2014	Historical 2015	Historical 2016	Historical 2017	Historical 2018	Historical 2019	Historical 2020	Historical 2021	Historical 2022	Bridge Year 2023	Test Year 2024
Residential	-100%	-100%	-100%	-100%	-4%	9%	-2%	7%	4%	3%	0%	4%
GS-50	-100%	-100%	-100%	-100%	-3%	3%	-1%	1%	-2%	9%	-2%	2%
GS 50-499kW	-100%	-100%	-100%	-100%	-5%	0%	1%	2%	7%	16%	-3%	-1%
GS 500-1499kW	-100%	-100%	-100%	-100%	-7%	-6%	-24%	-11%	8%	-15%	-9%	-8%
GS 1500-4999 kW	-100%	-100%	-100%	-100%	-13%	-7%	-7%	-23%	-10%	-4%	-1%	0%
USL	-100%	-100%	-100%	-100%	-5%	-7%	0%	0%	0%	-1%	-1%	-1%
Sentinel Lighting	-100%	-100%	-100%	-100%	-4%	-3%	-17%	-6%	-3%	0%	0%	0%
Street Lighting	-100%	-100%	-100%	-100%	0%	-21%	-51%	-3%	15%	2%	0%	0%
Total	-100%	-100%	-100%	-100%	-6%	0%	-7%	-2%	3%	4%	-3%	0%

Demand (Actual)													
Rate Class	Last Board Approved	Historical 2013	Historical 2014	Historical 2015	Historical 2016	Historical 2017	Historical 2018	Historical 2019	Historical 2020	Historical 2021	Historical 2022	Bridge Year 2023	Test Year 2024
Residential	-	-	-	-	-	-	-	-	-	-	-	-	-
GS-50	-	-	-	-	-	-	-	-	-	-	-	-	-
GS 50-499kW	115,328	-	-	-	143,223	137,627	131,466	131,386	137,702	146,508	160,486	163,381	162,219
GS 500-1499kW	87,913	-	-	-	103,435	106,161	113,441	91,315	76,763	82,837	73,360	62,156	67,274
GS 1500-4999 kW	68,279	-	-	-	72,107	68,625	66,586	60,560	53,165	50,923	48,074	42,700	42,760
USL	-	-	-	-	-	-	-	-	-	-	-	-	-
Sentinel Lighting	301	-	-	-	282	263	256	217	202	202	202	196	195
Street Lighting	3,829	-	-	-	3,831	3,831	3,044	1,498	1,416	1,647	1,668	1,676	1,676
Total	0	-	-	-	3,831	3,831	3,044	1,498	1,416	1,647	1,668	1,676	1,676

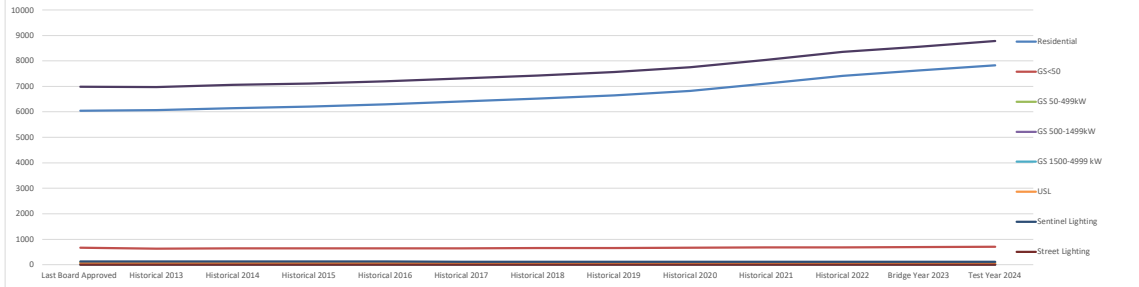
Demand (Actual) Variance Analysis												
Rate Class	Historical 2013	Historical 2014	Historical 2015	Historical 2016	Historical 2017	Historical 2018	Historical 2019	Historical 2020	Historical 2021	Historical 2022	Bridge Year 2023	Test Year 2024
Residential	-	-	-	-	-	-	-	-	-	-	-	-
GS-50	-	-	-	-	-	-	-	-	-	-	-	-
GS 50-499kW	-	-	-	-	0%	5%	6%	10%	2%	-1%	-1%	-1%
GS 500-1499kW	-	-	-	-	-20%	-16%	8%	-11%	-15%	-8%	-15%	-8%
GS 1500-4999 kW	-	-	-	-	-8%	-12%	-4%	-6%	-11%	0%	-11%	0%
USL	-	-	-	-	-	-	-	-	-	-	-	-
Sentinel Lighting	-	-	-	-	-16%	-7%	0%	0%	-3%	0%	-3%	0%
Street Lighting	0	-	-	-	-51%	-5%	16%	1%	0%	0%	0%	0%
Total	0	-	-	-	-	-	-	-	-	-	-	-

Consumption (Weather Normalized)													
Rate Class	Last Board Approved	Historical 2013	Historical 2014	Historical 2015	Historical 2016	Historical 2017	Historical 2018	Historical 2019	Historical 2020	Historical 2021	Historical 2022	Bridge Year 2023	Test Year 2024
Residential	49,906,667	-	-	-	49,995,788	48,964,602	52,315,681	52,189,972	55,437,587	57,773,982	60,083,010	59,512,317	61,627,888
GS-50	22,650,334	-	-	-	21,249,604	20,839,946	21,095,384	21,265,639	21,319,144	21,050,555	23,175,494	22,590,994	23,022,735
GS 50-499kW	38,065,105	-	-	-	42,340	138,878	130,089	131,996	137,198	146,422	161,707	52,318,523	51,946,339
GS 500-1499kW	36,286,504	-	-	-	102,798	107,124	112,253	91,739	76,481	82,788	73,918	20,958,055	19,312,053
GS 1500-4999 kW	34,524,454	-	-	-	71,662	69,248	65,880	60,841	52,970	50,894	48,440	17,702,283	17,727,224
USL	421,538	-	-	-	383,820	370,474	338,285	341,862	339,249	340,560	341,468	335,322	331,791
Sentinel Lighting	116,952	-	-	-	280	265	254	218	202	201	203	71,836	71,581
Street Lighting	1,405,153	-	-	-	3,808	3,866	3,012	1,505	1,411	1,646	1,680	619,623	619,623
Total	0	-	-	-	183,376,707	-	-	-	-	-	-	-	-

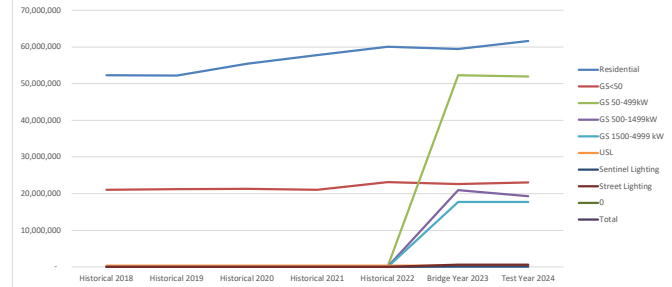
Consumption (Weather Normalized) Variance Analysis												
Rate Class	Historical 2013	Historical 2014	Historical 2015	Historical 2016	Historical 2017	Historical 2018	Historical 2019	Historical 2020	Historical 2021	Historical 2022	Bridge Year 2023	Test Year 2024
Residential	-	-	-	-	0%	6%	4%	4%	-1%	4%	-1%	4%
GS-50	-	-	-	-	1%	0%	-1%	10%	-3%	2%	-3%	2%
GS 50-499kW	-	-	-	-	1%	4%	7%	10%	3224%	-1%	-	-
GS 500-1499kW	-	-	-	-	-8%	-17%	8%	-11%	28245%	-8%	-	-
GS 1500-4999 kW	-	-	-	-	-18%	-13%	-4%	-5%	36445%	0%	-	-
USL	-	-	-	-	-	-	-	-	-	-	-	-
Sentinel Lighting	-	-	-	-	1%	-1%	0%	0%	-2%	-1%	-	-
Street Lighting	0	-	-	-	-14%	-7%	0%	1%	35209%	0%	-	-
Total	0	-	-	-	-	-	-	-	-	-	-	-

Demand (Weather Normalized)													
Rate Class	Last Board Approved	Historical 2013	Historical 2014	Historical 2015	Historical 2016	Historical 2017	Historical 2018	Historical 2019	Historical 2020	Historical 2021	Historical 2022	Bridge Year 2023	Test Year 2024
Residential	-	-	-	-	-	-	-	-	-	-	-	-	-
GS-50	-	-	-	-	-	-	-	-	-	-	-	-	-
GS 50-499kW	115,328	-	-	-	143,223	137,627							

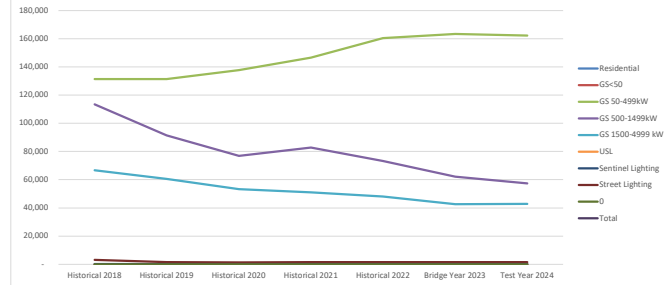
Consumption (Actual)



Consumption (Weather Normalized)



Demand (Weather Normalized)



1

2

APPENDIX C: LOAD FORECAST MODEL (THI 2024 LOAD FORECAST

3

MODEL 20240430)

4