



AGENDA
CITY OF LAKE WORTH BEACH
CITY COMMISSION WORK SESSION - ELECTRIC RATES
CITY HALL COMMISSION CHAMBER
TUESDAY, JULY 27, 2021 - 5:00 PM

ROLL CALL:

PLEDGE OF ALLEGIANCE: led by Commissioner Sarah Malega

UPDATES / FUTURE ACTION / DIRECTION

A. [Electric Cost of Service Study](#)

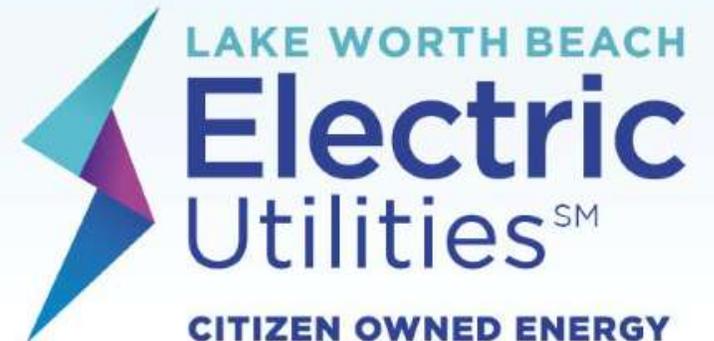
ADJOURNMENT:

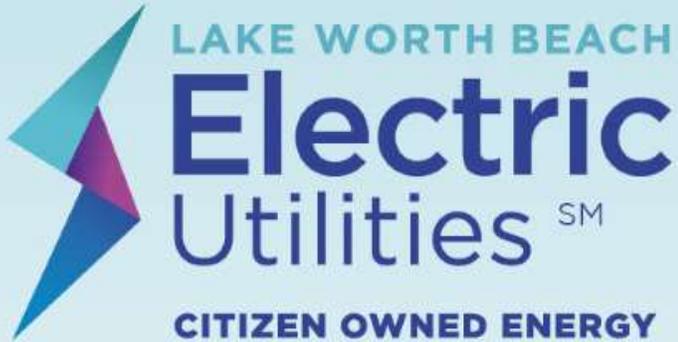
The City Commission has adopted Rules of Decorum for Citizen Participation (See Resolution No. 25-2021). The Rules of Decorum are posted within the City Hall Chambers, City Hall Conference Room, posted online at: <https://lakeworthbeachfl.gov/government/virtual-meetings/>, and available through the City Clerk's office. Compliance with the Rules of Decorum is expected and appreciated.

If a person decides to appeal any decision made by the board, agency or commission with respect to any matter considered at such meeting or hearing, he or she will need a record of the proceedings, and that, for such purpose, he or she may need to ensure that a verbatim record of the proceedings is made, which record includes the testimony and evidence upon which the appeal is to be based. (F.S. 286.0105)

Electric Utility Cost of Service Study Update

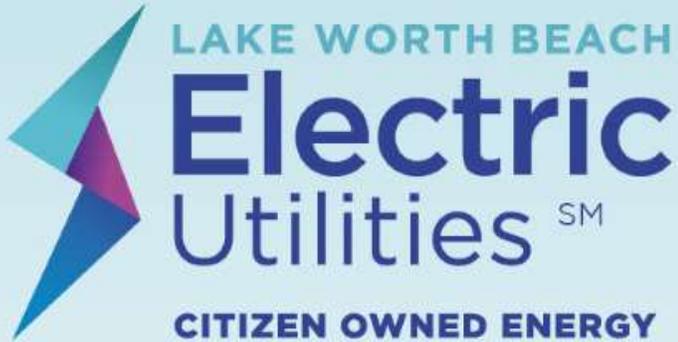
July 27, 2021





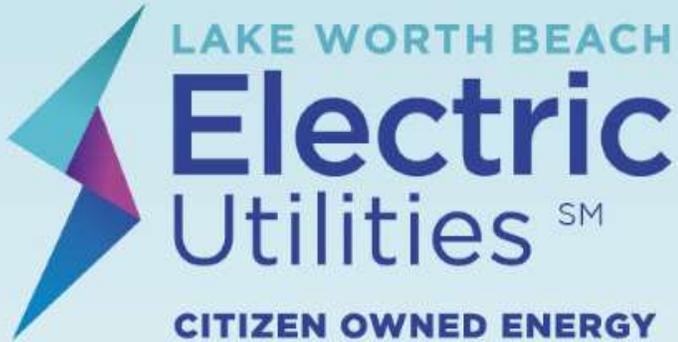
Background

- Electric rates were last looked at in detail circa 2013 as the electric utility made plans for its exit from the FMPA All-Requirements Project.
- Shortly afterwards the City Commission requested that residential rates for customers using < 1000 kWhrs/month achieve rate parity with the neighboring IOU by February 2018.
- Since 2013 significant changes have been made to the utility's cost structure, fuel prices, and revenues that call for revisiting rates.
- Leidos was selected to conduct the study
 - Craig Shepard, Principal Analyst has been leading Leidos' team working with LWB Staff



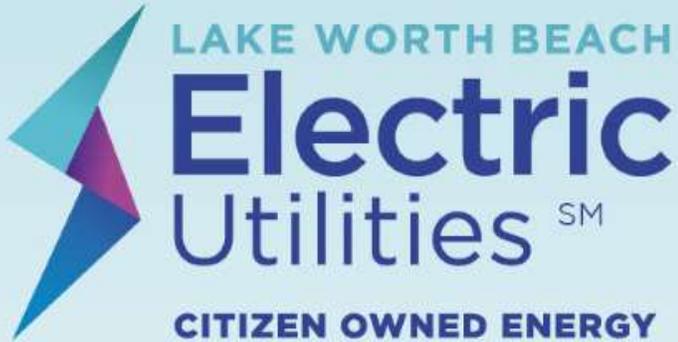
Background

- Rate studies should be performed periodically. Costs and revenues are not static, nor are market conditions for underlying commodities, community desires and aspirations, and relative competitive position.
- We are at the point now where major activities such as significant cost cutting, restructuring of operations, identification of SHRIP capital needs, and refinancing of debt are sufficiently understood to the extent that a clearer picture of costs and revenue requirements can be presented.



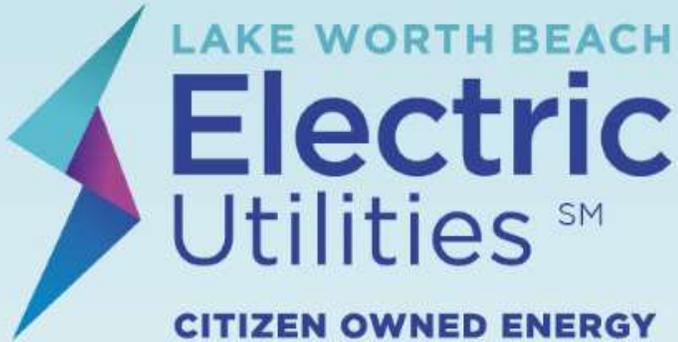
Background

- A Cost of Service Study by itself is not the sole determinant of Rates
 - Test year costs as well and revenue requirements are studied, and extrapolated for growth and expected known changes
- Other factors must be considered in the overall decision on rates, among them:
 - Sustaining and improving on our investment-grade credit rating
 - Competitiveness and fairness
 - Ability to meet operating needs at acceptable service levels
 - Community aspirations
 - Regulatory requirements



Tonight's Agenda

- Tonight we will provide an overview of the purpose, sources of data, methodology, and progress of the study.
- Tonight's meeting is intended to be informative with opportunity for Q&A, no specific action is being requested at this time.
- Changes in rates will be brought forward for approval at a future meeting if the Commission so requests.
- Observations, conclusions and recommendations at this point are not final.



Observations

- Our Residential rates are competitive statewide and regionally with IOUs and Municipal counterparts alike
 - Our base energy rate and fuel charge need to be adjusted, yet the total residential bill can remain essentially neutral for now
- Our Commercial rates are high
 - Base energy and fuel charges need to be adjusted
 - Demand rates are high, and should be adjusted to market over time
- Some changes should be made effective with the coming fiscal year
- Our minimum bill amounts are substantially lower than our actual costs

CITY OF LAKE WORTH BEACH, FLORIDA

Electric Utility Cost of Service Study

PRESENTED BY: Craig Shepard, Project Manager

July 27, 2021



City of Lake Worth Beach Electric Utility

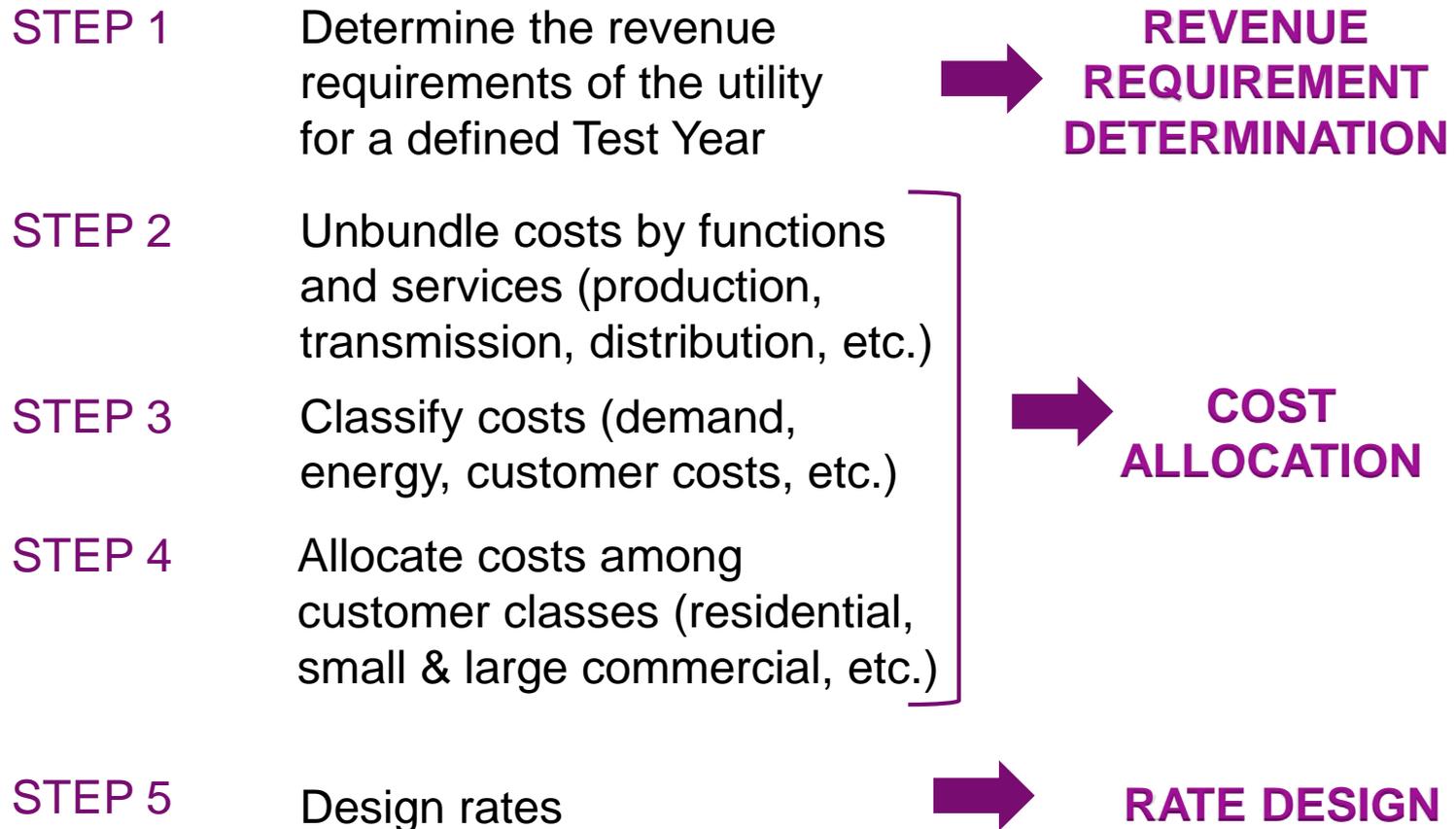
- ▶ Owned and operated by the City of Lake Worth Beach
- ▶ Local control
- ▶ Reliable power
- ▶ Community based
- ▶ Not for Profit
- ▶ Provides for jobs in the City
- ▶ Provides for Economic Development
- ▶ Returns \$ Millions annually to the City

Scope of Services

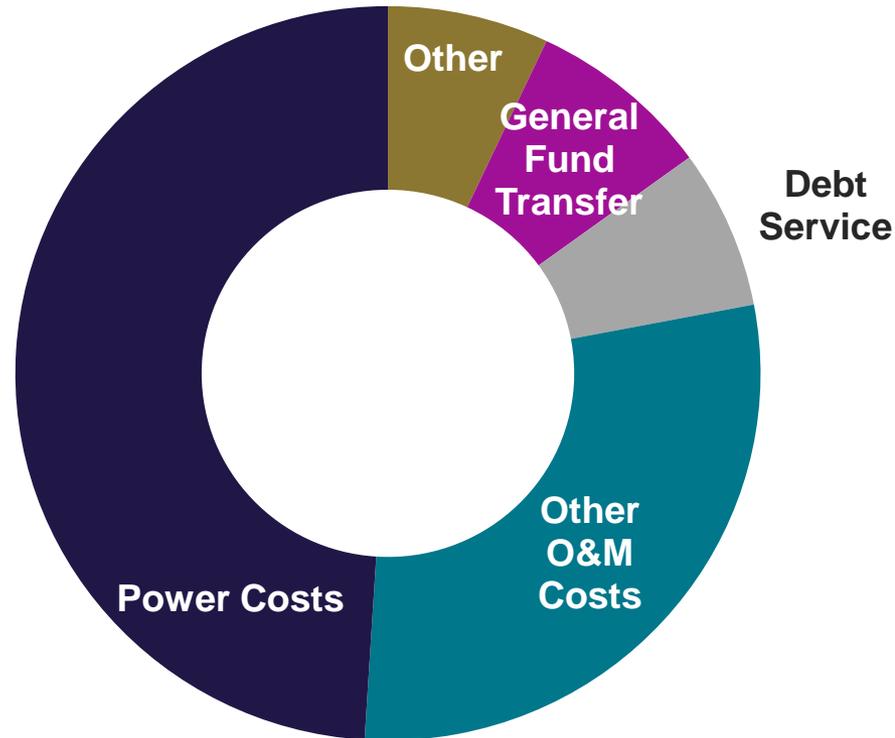
Electric COS Study

- ▶ Review Budgets and other financial documents
- ▶ Adjust Budgets for known changes
- ▶ Develop Test Year Revenue Requirements
- ▶ Test Adequacy of Rates for 2020-2024
- ▶ Conduct a COS Analysis
 - ▶ Determine class (Residential, Small Commercial, Large Commercial, Lighting) contribution to costs
- ▶ If necessary, revise rates according to City policies, the Federal Energy Regulatory Commission, and the Florida Public Service Commission guidelines
- ▶ Frequent communication with City team

COS Study Overview



Test Year Electric Revenue Requirements \$58,159,000



Cost of Service Allocations

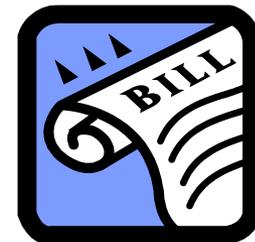
**Demand
(Fixed)**



**Energy
(Variable)**



Customer



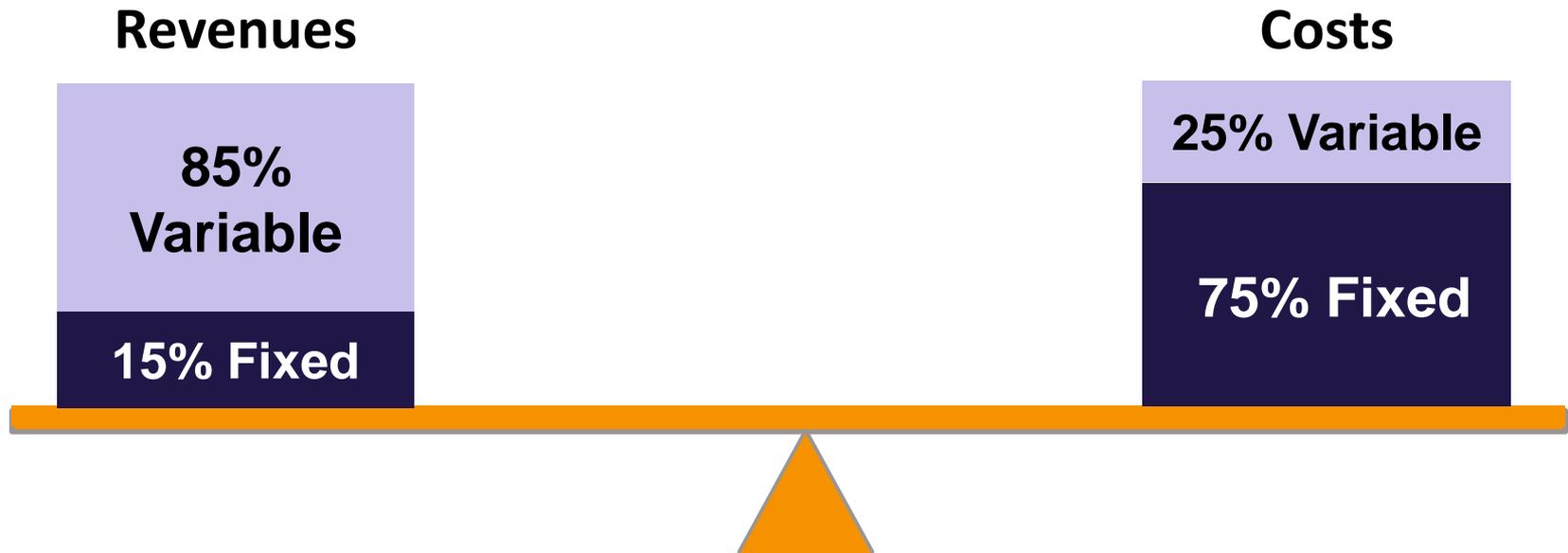
Electric COS Study

Cost of Service Results (\$000)

Test Year Ending September 30, 2020			
Customer Class	Revenues	Adjustment	Difference
Residential	\$35,500	\$0	0.0%
Small Commercial	\$16,207	-\$313	-2.2%
Large Commercial	\$6,143	-\$117	-2.2%
Lighting	\$708	\$30	5.0%
TOTAL SYSTEM	\$58,559	-\$400	<u>-0.8%</u>

Rate Design

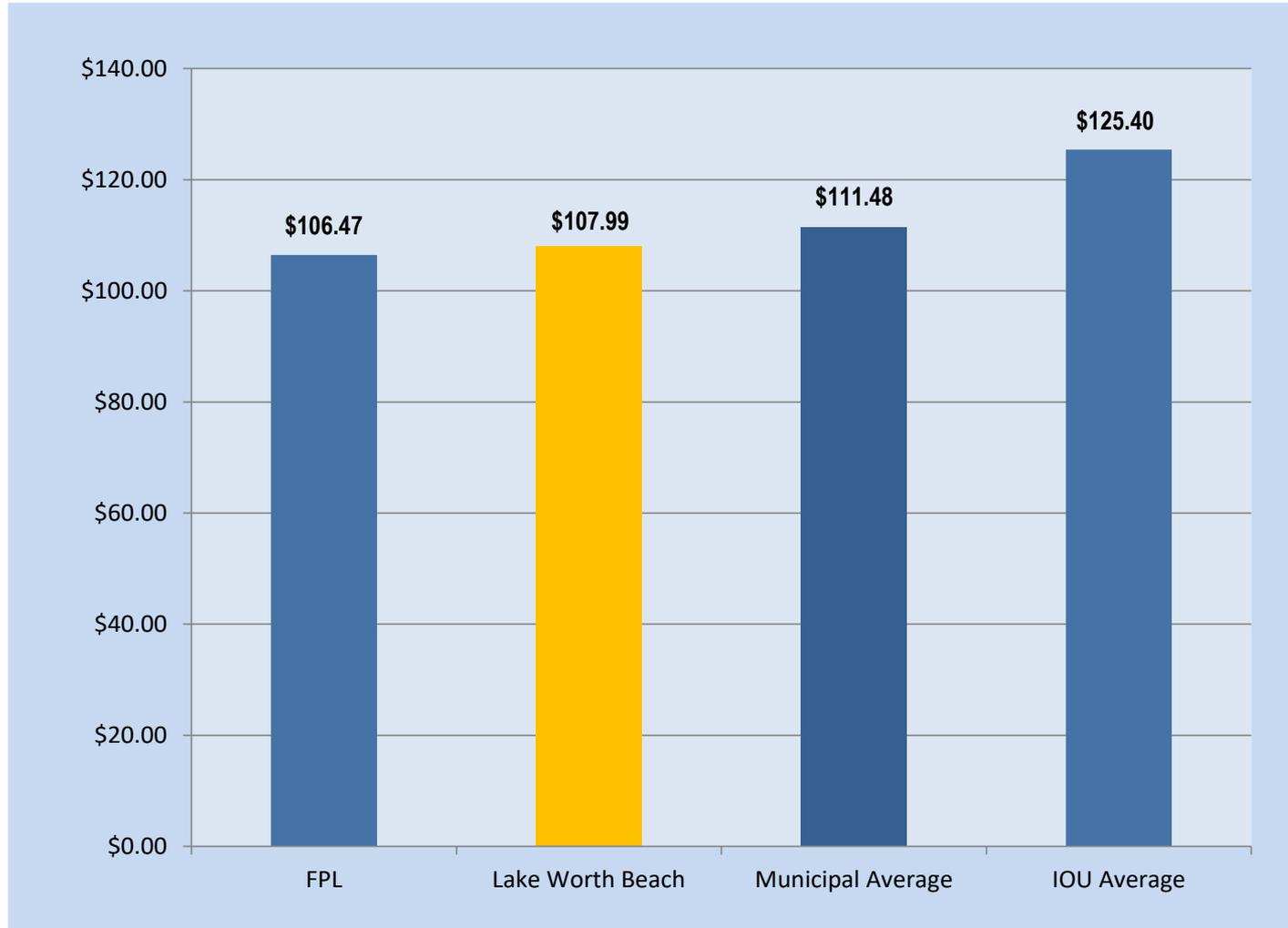
Electric Fixed / Variable Balance



Recommendations

- ▶ Move Rates More Toward Cost of Service
- ▶ Increase Minimum Bills to Help Cover Fixed Costs
- ▶ Revise Purchased Cost Adjustment (PCA)
- ▶ Establish Rate Stabilization Fund
- ▶ Consider Economic Development Rider

Comparison of Residential Bills 1,000 kWh – May 2021



Questions / Comments

POINTS OF CONTACT

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Draft Report

Electric Cost of Service Study

City of Lake Worth Beach, Florida



July 2021



This report has been prepared for the use of the client for the specific purposes identified in the report. The conclusions, observations and recommendations contained herein attributed to Leidos constitute the opinions of Leidos. To the extent that statements, information and opinions provided by the client or others have been used in the preparation of this report, Leidos has relied upon the same to be accurate, and for which no assurances are intended and no representations or warranties are made. Leidos makes no certification and gives no assurances except as explicitly set forth in this report.

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July __, 2021

The Honorable Mayor and City Commission
City of Lake Worth Beach
City Hall, 1900 2nd Avenue North
Lake Worth Beach, Florida 33461

Subject: Electric Cost of Service Study

Honorable Mayor and Commissioners:

In keeping with the provisions of the professional services agreement between the City of Lake Worth Beach, Florida (the City) and Leidos Engineering, LLC, (the Consultant) and the direction provided by the City management and staff, the Electric Cost of Service Study (the Report) has been completed. The Report addresses the projected financial operations of the City's electric system (Electric System) for the fiscal years ending September 30, 2020 through 2024. We have summarized our assumptions and the results of our analyses and conclusions in this Report, which we hereby submit for your consideration. This Report summarizes the basis for the proposed rates for electric service that are necessary to meet the projected revenue requirements in the near future and which rates should recover such projected requirements from the customer classes generally in accordance with the direction provided by the City, the guidelines of the Florida Public Service Commission (the PSC) and the results of the allocated cost of service analyses.

In preparing the Electric Cost of Service Study, the Consultant relied upon historical and projected data for the development of operating revenues, operating expenses and capital requirements. Historical data were obtained from various monthly reports, the City's Comprehensive Annual Financial Reports, actual customer billing records, and analyses and discussions with members of the City management and staff. Projected data were, in part, derived from the Electric System's current forecast of demand and energy requirements, the Electric System Operating Budget for Fiscal Year 2020 (the Budget), and detailed information and data compiled and provided by members of the City management and staff.

The projected costs and revenues used in this Report are for the fiscal years ending September 30, 2020 through 2024, and have been developed using the City's Budget as a basis for the projected costs. Such costs and revenues, as initially reflected in the Budget, were adjusted for known or anticipated changes.

Leidos Engineering, LLC

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SUMMARY OF FINDINGS

ADEQUACY OF EXISTING RATES

The various adjustments, assumptions and considerations are discussed in Section 2 regarding the projected number of customers, sales, and in Section 3 regarding the projected revenues and expenditures. In the fiscal years ending September 30, 2020 through 2024, the revenue requirements proposed herein include Operation and Maintenance expenses, a transfer to the City's General Fund, capital improvement expenditures, the payment of principal and interest on outstanding indebtedness, and an allowance for contingencies and reserves. Based on the foregoing, the Electric System revenue requirements for fiscal years ending September 30, 2020 through 2024 and the projected revenues, assuming the existing rates, are summarized on the following table:

Description	Projected				
	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Net Revenue Requirements	\$58,158,995	\$58,531,674	\$60,360,905	\$58,782,793	\$62,340,635
Total Existing Rate Revenue	58,558,995	58,931,674	60,760,905	58,908,582	61,870,618
Surplus/(Deficiency)	\$400,000	\$400,000	\$400,000	\$125,789	(\$470,017)
Percent of Base and Fuel Revenue	0.8%	0.8%	0.8%	0.2%	-0.9%

As shown above, the existing rates produce revenues that are slightly greater than the projected revenue requirements in the fiscal years ending September 30, 2020 through 2023 and slightly under recover the projected revenue requirements in the fiscal year ending September 30, 2024.

Based on the analyses in this Report, the proposed rates represent a realignment of costs allocated among the residential and commercial classes. It is projected that the proposed rates will be sufficient to meet the projected revenue requirements for the fiscal years ending September 30, 2020 through 2023. For certain analyses, the "Test Year" has been identified as the fiscal year ending September 30, 2020.

COST OF SERVICE RESULTS

The Test Year revenue requirements were allocated to the customer classes based on a cost of service model that functionalizes costs among production, transmission, distribution and customer costs, and classifies costs according to demand related or energy related costs. Production (purchased power) demand related costs were allocated based on the contribution of each class to the average 12 month coincident peak demands and distribution demand related costs were allocated based on the contribution of each class to the annual system peak demand. Section 4 shows the development of allocation factors and Section 5 shows the results of the cost of service analysis.

The results of the cost of service analysis are summarized as follows:

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Customer Class	Test Year 2020		
	Total Existing	Target Adjustments	
	Revenue (\$000)	(\$000)	(%) [1]
Residential	\$35,500	\$0	0.0%
Commercial	16,207	(313)	-2.2%
Commercial Demand	6,143	(117)	-2.2%
Lighting	708	30	5.0%
Total System	\$58,559	(\$400)	-0.8%

[1] Percent of existing base rates and PCA revenues.

RATE DESIGN

The proposed electric rates shown in Section 6 reflect, to the extent permitted, (i) the lowest possible price consistent with the projected revenue requirements, (ii) the discouragement of wasteful, unnecessary use of service, (iii) the policies of the City, and (iv) the cost of service methodologies recommended by the Florida Public Service Commission (the PSC).

The principal effects of adopting the rates proposed herein would be:

- Rate structures and levels, in general, will be based, in part, on allocated cost of service techniques.
- Fuel and purchased power costs will continue to be shown in a separate charge, the Purchased Power Cost Adjustment (PCA).
- The proposed rates will be sufficient to meet the projected revenue requirements for the fiscal years ending September 30, 2020 through 2023.

RATE COMPARISONS

To assist the City in its evaluation and consideration of proposed rate adjustments, included in Table No. 7-1 are comparisons of typical monthly bills for the major rate classifications at various levels of usage. Typical bills calculated under the proposed rates have been compared with bills calculated under the existing rates. In addition, typical monthly bills calculated under the Electric System's existing and proposed rates have been compared with those calculated under the rates of other Florida investor-owned and municipal electric utilities in Table No. 7-2 for the billing month of January 2021.

When reviewing the comparisons of typical bills, it must be recognized that a substantial portion of the electric bill is comprised of fuel and purchased energy costs. For electric utilities other than the Electric System, the bill comparisons shown reflect fuel costs that were estimated in early 2021 and may not reflect actual current market prices for gas, oil and purchased energy.

As shown on Table No. 7-1, typical residential customers' bills under the proposed rates are approximately the same as under the existing rates, and typical commercial customers' bills can be expected to decrease slightly.

CONCLUSIONS

Based upon the results of our studies and analyses as summarized in this Report, which should be read in its entirety in conjunction with the following, and upon the numerous underlying assumptions and considerations relied upon in making such analyses and incorporated by reference herein, and the data and information provided by the City's management and staff and others, we are of the opinion that:

- (i) The existing rates produce revenues that are approximately equal to the projected revenue requirements in the fiscal years ending September 30, 2020 through 2023 and slightly under recover the projected revenue requirements in the fiscal year ending September 30, 2024;
- (ii) The proposed rates reflect a realignment of costs among the residential and commercial rate classes, and are projected to meet the revenue requirements for the fiscal years ending September 30, 2020 through 2023.
- (iii) The City should consider adopting the proposed rates shown in Section 6.
- (iv) The City should consider establishing a Rate Stabilization Fund to mitigate fluctuations in purchased power costs.
- (v) The City's existing and proposed rates are comparable to other Florida electric utilities;
- (vi) The City may want to investigate additional rate offerings such as an Economic Development Rider, Residential Time of Use Rate, Solar Subscription Rate, or Electric Vehicle Rate;
- (vii) The City should continue to monitor the cost of purchased power and current market conditions and should make adjustments, if necessary, to its power cost recovery factor to reflect such costs and conditions and to minimize the potential to under recover or over recover its fuel costs; and
- (viii) The City should consider submitting this Report, together with other appropriate filing requirements, to the PSC.

We are prepared to present our analyses and proposed rates to the City Commission and to assist the City with public meetings, with PSC filing requirements, and with presentations in connection with the adoption and implementation of the proposed rates.

The Honorable Mayor and City Commission
City of Lake Worth Beach
July __, 2021
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We want to take this opportunity to express our appreciation for the spirited cooperation and valuable assistance given us throughout the course of this study by each member of the City management and staff.

Respectfully submitted,

LEIDOS ENGINEERING, LLC

Electric Cost of Service Study

City of Lake Worth Beach, Florida

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Section 1

INTRODUCTION, PURPOSE, AND SCOPE

Introduction

The City of Lake Worth Beach (City), located in south Florida, operates a municipal utility system serving 473,590 MWh in 2019 with a system peak load of 97.2 MW. Lake Worth Beach currently meets its load requirements using a variety of resources, including self-owned and self-operated on-site generation assets and off-site resources as a member of Florida Municipal Power Agency (FMPA). As a participant in FMPA Projects, the City benefits from the associated capacity and energy (Generation Entitlements) to meet its customers' load requirements.

Leidos Engineering, LLC, (the Consultant or the firm) conducted this study, which relied upon historical and projected data for the development of operating revenues, operating expenses, and capital requirements. Historical data was obtained from various monthly reports, annual financial reports, actual billing records, analyses, and discussions with members of the management and staff of the City. Projected data was, in part, derived from historical data adjusted for current economic conditions, the Operating Budget for Fiscal Year ending September 30, 2020 and the Capital Improvement Plan for Fiscal Years 2020 through 2024, the City's demand and energy forecasts (including the effects of conservation), the various contracts, and the direction and instructions provided by the City, and other appropriate sources.

Purpose

The primary purposes of the Electric Rate Study are:

1. To determine the estimated annual revenue requirements for the Fiscal Year ending September 30, 2020, as adjusted for known changes (the Test Year); and Fiscal Years ending September 30, 2021 through 2024 (Study Period).
2. To test the adequacy of the existing rates on a system wide basis for the Fiscal Years 2020 through 2024;
3. To prepare a cost of service analysis to estimate the cost of providing electric service by customer class;
4. To adjust rate levels, if necessary, in order to recover the cost of providing service, and to reflect the policies established by the City; and
5. To continue to recover periodically the costs of purchased power.

Scope

The overall scope of services of the Electric Rate Study provided for (i) the development of a revenue requirements study for the Test Year and Study Period; (ii) the development

Section 1

of proposed rate levels and rate structures that are designed to recover the revenue requirements for the Test Year and Study Period which reflect the City's policy and industry practices; and (iii) the development of comparisons of typical bills for electric service calculated using the existing and proposed rates and the rates charged by neighboring private and public electric utilities.

The Electric Rate Study consists of two parts or phases. The results are presented in this report. Working closely with management and staff, Phase I activities included, among other things, (i) obtaining and reviewing historical billing data, (ii) reconciling such data, (iii) identifying the proper sales forecast to use for purposes of projecting rate revenues and costs (iv) projecting billing determinants in order to calculate the effect on revenues based on revised rates, (v) preparing projections of revenues by major customer class, (vi) developing projected annual revenue requirements for the Test Year and Study Period, (vii) preparing a comparison of the City's existing rates and the rates of other utilities, and (viii) preparing a Phase I report.

Phase II includes (i) the making of revisions to the revenue requirements, (ii) the affirmation of City policies and direction, (iii) the allocation of costs, (iv) the design of proposed rates, and (v) the preparation of a final report.

ENERGY REQUIREMENTS AND CUSTOMER STATISTICS

General

The development of an accurate forecast of future power and energy requirements, sales, customers, and customer usage characteristics, is essential in the evaluation of the adequacy of electric rates and rate structures. This section summarizes the various factors considered and utilized in the development of the City's near term future power and energy requirements.

The estimates of energy and demand requirements developed for inclusion in this study were based on historical sales, customers, and customer usage characteristics.

Energy Requirements

Projection of Electricity Sales to Ultimate Customers

The projections of electric energy sales to ultimate customers are based on an analysis of historical information for the fiscal year ended September 30, 2019. Historical growth, usage patterns, and normalized weather were tested for reasonableness.

Based on information filed with the Energy Information Administration (EIA) and information provided by the City, the following tables show the historical number of residential and commercial customers and residential and commercial energy sales.

Historical Number of Customers			
Fiscal Year	Residential	Commercial	Total
2014	22,179	3,648	25,827
2015	22,830	3,728	26,558
2016	23,053	3,739	26,792
2017	23,357	3,748	27,105
2018	23,399	3,746	27,145
2019	23,528	3,748	27,276
2020	23,758	3,763	27,520

Historical Retail Energy Sales (MWh)			
Fiscal Year	Residential	Commercial	Total
2014	195,937	177,660	373,597
2015	225,813	204,532	430,345
2016	254,734	180,024	434,758
2017	244,928	183,819	428,747
2018	253,196	179,990	433,186
2019	260,305	179,662	439,967
2020	264,974	169,047	434,021

Based on information provided by the City, it was projected that the reported number of customers and kWh sales would increase by 0.5% annually for the projected fiscal year 2021, and Study Period.

Projected Demand

The historical system peak demand for the fiscal year ending September 30, 2019 was 97.2 MW. For purposes of this Study, it was projected that the system peak demand the Test Year would be 96.8 MW.

Projected Energy Sales

The monthly system historical and projected energy sales are set forth in Table No. 2-1, page 2. The following tabulation is an annual summary of the historical and projected energy sales by major customer class:

Retail Energy Sales (MWh)			
Fiscal Year	Residential	Commercial	Total
Historical 2019	260,305	179,662	439,967
Historical 2020	264,974	169,047	434,021
Projected 2021	268,937	165,635	434,572

As can be seen from the summary table, energy sales in fiscal years ended September 30, 2019 were 439,967 MWh and 434,021 MWh in Fiscal Year 2020. Sales in Fiscal Year 2021 and the Study Period are based on a projected annual growth rate of 0.5 percent.

Projected Average Number of Customers

An integral part of the forecasting process is the average number of customers the City expects to serve by major customer class. The detailed historical and projected customers are set forth on Table No. 2-1, page 1. The following is a summary of the historical and projected average number of customers used as a basis for this study:

ENERGY REQUIREMENTS AND CUSTOMER STATISTICS

Average Number of Customers			
Fiscal Year	Residential	Commercial	Total
Historical 2019	23,528	3,748	27,276
Historical 2020	23,758	3,763	27,520
Projected 2021	24,070	3,842	27,911

Purchased Power

The City purchases capacity and energy requirements from a variety of sources, including the FMPA.

Energy Losses

The loss factors utilized in developing the projected energy requirements for the Test Year are 7.3 percent of annual energy requirements and 7.8 percent of energy sales. This factor is used to take into account transmission and distribution losses and unaccounted for energy and demand.

Summary of Projected Demand and Energy Requirements

The following tabulation sets forth the projected annual peak demand at the generation level, energy requirements and the system load factor used in this study:

Description	2020 Test Year
Annual 60-Minute Peak Demand (MW)	96.8
Annual Energy Sales (MWh)	434,021
Losses and Unaccounted for Energy (MWh)	<u>33,854</u>
Annual Energy Requirements (MWh)	<u>467,875</u>
Annual System Load Factor (%)	<u>55.2</u> %

Customer Statistics

Projected customer statistics by major rate classification are set forth on Table No. 2-1 and No. 2-2. Table No. 2-1 sets forth for fiscal years ending September 30, 2019, 2020 and 2021 the historical and projected number of customers and energy sales. Table No. 2-2 sets forth the projected annual billing determinants by major rate classes for fiscal year 2020. The projected average annual number of customers and annual energy sales for the fiscal year ending September 30, 2020 incorporate the following considerations:

- i. continuation of recent historical sales and/or usage characteristics;
- ii. continuation of past, present, and projected conservation and demand-side management programs; and

Section 2

iii. continuation of the existing regulatory structure.

Any departure from those assumptions (e.g., change in economic activity) could have a material adverse effect on energy sales and revenues.

As derived from Table No. 2-1 and No. 2-2, the projected fiscal year 2020 composition of the City's ultimate customers and associated energy sales by major rate classification is tabulated below:

Customer Class	Test Year 2020			
	Average Number of Customers	Percent of Total	Annual MWh Sales	Percent of Total
Residential	23,758	86.3%	264,974	61.1%
Commercial	3,128	11.4%	115,953	26.7%
Commercial Demand Lighting	85	0.3%	49,286	11.4%
	550	2.0%	3,808	0.9%
Total Customers and MWh Sales	27,520	100.0%	434,021	100.0%

CITY OF LAKE WORTH BEACH, FLORIDA
Electric Cost of Service Study

Historical and Projected Customers
Fiscal Years 2019-2021

Ln No	Customer Classes (a)	Oct (b)	Nov (c)	Dec (d)	Jan (e)	Feb (f)	Mar (g)	Apr (h)	May (i)	Jun (j)	Jul (k)	Aug (l)	Sep (m)	Total (n)	Average (o)
Historical FY 2019															
Regular Residential (Schedule R-S)															
1	Residential (Regular)	23,474	23,322	23,408	23,401	23,395	23,462	23,502	23,498	23,431	23,607	23,651	23,464	281,615	23,468
2	Residential Net Metering	0	0	0	71	78	77	78	82	83	81	86	87	723	60
3	Subtotal Residential	23,474	23,322	23,408	23,472	23,473	23,539	23,580	23,580	23,514	23,688	23,737	23,551	282,338	23,528
Regular Commercial (Schedule C-S)															
4	Commercial (Regular)	3,117	3,104	3,113	3,115	3,089	3,136	3,105	3,123	3,108	3,124	3,118	3,101	37,353	3,113
5	Commercial Net Metering	0	0	0	5	6	6	7	4	4	8	8	8	56	5
6	Subtotal Commercial	3,117	3,104	3,113	3,120	3,095	3,142	3,112	3,127	3,112	3,132	3,126	3,109	37,409	3,117
7	Demand Commercial (Schedule CD-S)	85	1,020	85											
Lighting															
8	Private Area Lighting	539	530	537	539	531	534	534	539	534	537	536	543	6,433	536
9	Street Lighting	9	9	9	9	9	9	9	9	9	9	9	9	108	9
10	Subtotal Lighting	548	539	546	548	540	543	543	548	543	546	545	552	6,541	545
11	TOTAL CUSTOMERS	27,224	27,050	27,152	27,225	27,193	27,309	27,320	27,340	27,254	27,451	27,493	27,297	327,308	27,276
Historical FY 2020															
Regular Residential (Schedule R-S)															
12	Residential (Regular)	23,647	23,528	23,582	23,664	23,645	23,760	23,727	23,651	23,663	23,716	23,600	23,675	283,858	23,655
13	Residential Net Metering	94	92	96	97	100	99	103	106	107	110	111	117	1,232	103
14	Subtotal Residential	23,741	23,620	23,678	23,761	23,745	23,859	23,830	23,757	23,770	23,826	23,711	23,792	285,090	23,758
Regular Commercial (Schedule C-S)															
15	Commercial (Regular)	3,099	3,109	3,101	3,106	3,092	3,121	3,127	3,125	3,107	3,145	3,142	3,151	37,425	3,119
16	Commercial Net Metering	8	8	8	9	9	9	9	9	9	9	9	9	105	9
17	Subtotal Commercial	3,107	3,117	3,109	3,115	3,101	3,130	3,136	3,134	3,116	3,154	3,151	3,160	37,530	3,128
18	Demand Commercial (Schedule CD-S)	85	1,020	85											
Lighting															
19	Private Area Lighting	542	542	538	537	537	539	543	540	539	545	542	548	6,492	541
20	Street Lighting	9	9	9	9	9	9	9	9	9	9	9	9	108	9
21	Subtotal Lighting	551	551	547	546	546	548	552	549	548	554	551	557	6,600	550
22	TOTAL CUSTOMERS	27,484	27,373	27,419	27,507	27,477	27,622	27,603	27,525	27,519	27,619	27,498	27,594	330,240	27,520

CITY OF LAKE WORTH BEACH, FLORIDA
Electric Cost of Service Study

Historical and Projected Customers
Fiscal Years 2019-2021

Ln No.	Customer Classes (a)	Oct (b)	Nov (c)	Dec (d)	Jan (e)	Feb (f)	Mar (g)	Apr (h)	May (i)	Jun (j)	Jul (k)	Aug (l)	Sep (m)	Total (n)	Average (o)
Projected FY 2021															
Regular Residential (Schedule R-S)															
23	Residential (Regular)	23,768	23,742	23,931	23,815	23,848	23,902	24,015	24,025	24,035	24,045	24,055	24,065	287,246	23,937
24	Residential Net Metering	121	126	127	128	131	133	137	137	137	137	137	137	1,588	132
25	Subtotal Residential	23,889	23,868	24,058	23,943	23,979	24,035	24,152	24,162	24,172	24,182	24,192	24,202	288,834	24,070
Regular Commercial (Schedule C-S)															
26	Commercial (Regular)	3,157	3,193	3,183	3,174	3,178	3,179	3,196	3,196	3,196	3,196	3,196	3,196	38,240	3,187
27	Commercial Net Metering	10	10	10	10	10	10	10	10	10	10	10	10	120	10
28	Subtotal Commercial	3,167	3,203	3,193	3,184	3,188	3,189	3,206	3,206	3,206	3,206	3,206	3,206	38,360	3,197
29	Demand Commercial (Schedule CD-S)	85	1,020	85											
Lighting															
30	Private Area Lighting	553	546	545	546	546	554	554	554	554	554	554	554	6,614	551
31	Street Lighting	9	9	10	9	9	9	9	9	9	9	9	9	109	9
32	Subtotal Lighting	562	555	555	555	555	563	6,723	560						
33	TOTAL CUSTOMERS	27,703	27,511	27,891	27,767	27,807	27,872	28,006	28,016	28,026	28,036	28,046	28,056	334,937	27,911

* Historical amounts through April 2021 provided by the City and remaining FY2021 months estimated using 0.5% projected residential growth

CITY OF LAKE WORTH BEACH, FLORIDA
Electric Cost of Service Study

Historical and Projected Energy Sales (kWh)
Fiscal Years 2019-2021

Ln. No.	Customer Classes (a)	Oct (b)	Nov (c)	Dec (d)	Jan (e)	Feb (f)	Mar (g)	Apr (h)	May (i)	Jun (j)	Jul (k)	Aug (l)	Sep (m)	Total (n)	Average (o)
Historical FY 2019															
Regular Residential (Schedule R-S)															
1	Residential (Regular)	27,512,330	23,176,876	17,372,046	16,019,712	14,266,563	16,493,207	16,556,972	21,358,775	25,785,557	27,015,766	28,276,368	26,016,577	259,830,749	21,652,562
2	Residential Net Metering	0	0	0	38,675	24,881	33,142	31,093	43,170	47,074	78,105	89,679	88,587	474,406	39,534
3	Subtotal Residential	27,512,330	23,176,876	17,372,046	16,058,387	14,291,444	16,526,349	16,568,065	21,401,945	25,832,631	27,093,871	28,366,047	26,105,164	260,305,155	21,692,096
Regular Commercial (Schedule C-S)															
4	Commercial (Regular)	12,742,432	11,490,716	9,329,240	8,697,885	8,343,637	9,197,057	9,060,828	10,787,044	11,541,895	11,412,080	12,157,110	11,384,156	126,144,080	10,512,007
5	Commercial Net Metering	0	0	0	7,580	19,403	14,200	15,920	17,580	22,760	28,159	33,662	21,636	190,900	15,908
6	Subtotal Commercial	12,742,432	11,490,716	9,329,240	8,705,465	8,363,040	9,211,257	9,076,748	10,804,624	11,564,655	11,440,239	12,190,772	11,415,792	126,334,980	10,527,915
7	Demand Commercial (Schedule CD-S)	4,589,459	4,482,597	3,656,680	3,726,406	3,552,872	3,490,700	3,556,593	4,077,286	4,631,304	4,501,099	4,812,655	4,485,084	49,562,735	4,130,228
Lighting															
8	Private Area Lighting	100,930	99,672	100,564	101,174	100,230	100,432	100,532	100,822	100,828	101,772	101,634	102,176	1,210,766	100,897
9	Street Lighting	212,810	212,810	212,810	212,810	212,810	212,810	212,810	212,810	212,810	212,810	212,810	212,810	2,553,720	212,810
10	Subtotal Lighting	313,740	312,482	313,374	313,984	313,040	313,242	313,342	313,632	313,638	314,582	314,444	314,986	3,764,486	313,707
11	TOTAL ENERGY SALES	45,157,961	39,462,671	30,671,340	28,804,242	26,520,396	29,541,548	29,514,748	36,597,487	42,342,228	43,349,791	45,683,918	42,321,026	439,967,356	36,663,946
Historical FY 2020															
Regular Residential (Schedule R-S)															
12	Residential (Regular)	25,581,857	22,673,609	16,632,869	16,318,036	14,778,853	16,359,464	21,034,935	22,118,591	23,711,330	28,382,026	27,076,413	29,327,150	263,995,133	21,999,594
13	Residential Net Metering	79,999	88,014	38,768	57,705	45,334	45,399	66,558	76,872	106,337	117,025	115,786	141,111	978,908	81,576
14	Subtotal Residential	25,661,856	22,761,623	16,671,637	16,375,741	14,824,187	16,404,863	21,101,493	22,195,463	23,817,667	28,499,051	27,192,199	29,468,261	264,974,041	22,081,170
Regular Commercial (Schedule C-S)															
15	Commercial (Regular)	11,737,967	10,793,914	9,137,961	8,801,693	8,384,596	9,224,617	8,816,243	7,843,706	9,086,543	10,588,744	10,077,301	10,981,931	115,475,216	9,622,935
16	Commercial Net Metering	30,623	32,611	26,344	29,654	35,760	33,361	40,891	42,123	45,734	52,477	51,571	56,310	477,459	39,788
17	Subtotal Commercial	11,768,590	10,826,525	9,164,305	8,831,347	8,420,356	9,257,978	8,857,134	7,885,829	9,132,277	10,641,221	10,128,872	11,038,241	115,952,675	9,662,723
18	Demand Commercial (Schedule CD-S)	4,507,729	4,284,893	3,801,114	3,978,279	3,674,724	3,811,177	4,004,282	3,756,058	4,191,759	4,396,329	4,405,591	4,473,877	49,285,812	4,107,151
Lighting															
19	Private Area Lighting	106,270	105,048	103,742	103,970	103,900	103,766	105,818	104,196	104,246	105,076	103,820	104,098	1,253,950	104,496
20	Street Lighting	212,810	212,810	212,810	212,810	212,810	212,898	212,898	212,898	212,898	212,898	212,898	212,898	2,554,336	212,861
21	Subtotal Lighting	319,080	317,858	316,552	316,780	316,710	316,664	318,716	317,094	317,144	317,974	316,718	316,996	3,808,286	317,357
22	TOTAL ENERGY SALES	42,257,255	38,190,899	29,953,608	29,502,147	27,235,977	29,790,682	34,281,625	34,154,444	37,458,847	43,854,375	42,043,380	45,297,375	434,020,814	36,168,401

CITY OF LAKE WORTH BEACH, FLORIDA
Electric Cost of Service Study

Historical and Projected Energy Sales (kWh)
Fiscal Years 2019-2021

Ln No.	Customer Classes (a)	Oct (b)	Nov (c)	Dec (d)	Jan (e)	Feb (f)	Mar (g)	Apr (h)	May (i)	Jun (j)	Jul (k)	Aug (l)	Sep (m)	Total (n)	Average (o)
Projected FY 2021															
Regular Residential (Schedule R-S)															
23	Residential (Regular)	25,872,026	24,031,892	19,817,202	16,662,623	14,674,480	16,832,990	18,481,380	22,229,184	23,829,887	28,523,936	27,211,795	29,473,786	267,641,181	22,303,432
24	Residential Net Metering	131,201	143,169	87,824	75,828	55,739	57,624	54,991	99,353	136,151	145,749	142,907	165,233	1,295,769	107,981
25	Subtotal Residential	26,003,227	24,175,061	19,905,026	16,738,451	14,730,219	16,890,614	18,536,371	22,328,537	23,966,038	28,669,685	27,354,702	29,639,018	268,936,950	22,411,412
Regular Commercial (Schedule C-S)															
26	Commercial (Regular)	10,682,709	11,006,391	9,318,144	7,779,003	7,321,101	8,270,695	9,061,479	7,843,706	9,086,543	10,588,744	10,077,301	10,981,931	112,017,747	9,334,812
27	Commercial Net Metering	52,469	53,665	45,176	40,164	34,838	37,068	38,601	42,123	45,734	52,477	51,571	56,310	550,196	45,850
28	Subtotal Commercial	10,735,178	11,060,056	9,363,320	7,819,167	7,355,939	8,307,763	9,100,080	7,885,829	9,132,277	10,641,221	10,128,872	11,038,241	112,567,943	9,380,662
29	Demand Commercial (Schedule CD-S)	4,507,729	4,284,893	3,801,114	3,978,279	3,674,724	3,811,177	4,004,282	3,756,058	4,191,759	4,396,329	4,405,591	4,473,877	49,285,812	4,107,151
Lighting															
30	Private Area Lighting	105,850	102,510	102,374	102,336	101,844	102,900	102,626	102,626	102,626	102,626	102,626	102,626	1,233,570	102,798
31	Street Lighting	212,898	212,898	211,666	212,282	212,282	212,282	212,282	212,282	212,282	212,282	212,282	212,282	2,548,000	212,333
32	Subtotal Lighting	318,748	315,408	314,040	314,618	314,126	315,182	314,908	314,908	314,908	314,908	314,908	314,908	3,781,570	315,131
33	TOTAL ENERGY SALES	41,564,882	39,835,418	33,383,590	28,850,515	26,075,008	29,324,736	31,955,641	34,285,332	37,604,982	44,022,143	42,204,073	45,466,044	434,572,275	36,214,356

* Historical amounts through April 2021 provided by the City and remaining FY2021 months estimated using 0.5% projected growth

CITY OF LAKE WORTH BEACH, FLORIDA
Electric Cost of Service Study

Projected Annual Billing Determinants
Fiscal Year Ending September 30, 2020

Ln. No.	Customer Class Description (a)	Number of Bills (b)	Billing Demand (kW) (c)	Energy Sales (kWh) (d)
1	Residential Regular	283,858	0	263,995,133
2	Residential Net Metering	1,232	0	978,908
3	Total Residential	285,090	0	264,974,041
4	Commercial Regular	37,425	0	115,475,216
5	Commercial Net Metering	105	0	477,459
6	Total Commercial	37,530	0	115,952,675
7	Commercial Service Demand	1,020	104,476	49,285,812
8	Lighting	6,600	0	3,808,286
9	TOTAL Residential Service	285,090	0	264,974,041
10	TOTAL Commercial Service	37,530	0	115,952,675
11	TOTAL Commercial Service Demand	1,020	104,476	49,285,812
12	TOTAL Lighting	6,600	0	3,808,286
13	TOTAL SYSTEM	330,240	104,476	434,020,814

Section 3 REVENUE REQUIREMENTS

General

The various components of costs associated with the operation, maintenance, funding of improvements, renewal and replacement of facilities, and assurance of the adequacy and continuity of reliable service to customers are generally referred to as the revenue requirements of a municipally owned and operated utility. The determination of the revenue requirements as they relate to the City, consistent with the methods of other publicly owned utilities, includes the various generalized cost components described below.

Operation and Maintenance Expenses: These expenses include the cost of purchased power, labor, materials, supplies, transportation, services, and other expenses, which are necessary to the operation and maintenance of the Electric Utility. These expenses do not include an allowance for depreciation or replacement of capital assets, any monies for the payment of interest on indebtedness or any monies transferred to a Reserve Fund.

Debt Service: Included in the debt service component of cost is the annual principal of and interest on bonds and related costs/transfers payable from the net revenues.

Capital Improvements: These expenditures are for the purpose of paying the cost of construction or acquisition of necessary improvements, betterments, extensions, enlargements or additions to, or the renewal and replacement of capital assets of the system and for unusual or extraordinary repairs thereto.

Revenues Available for Other Lawful Purposes: This component of cost is paid out of revenues and includes (a) any additional capital improvements to be financed from revenues; (b) additional working cash to provide for the payment of expenses incurred in providing service prior to the receipt of revenues associated with such service; (c) the establishment of operating reserves for special purposes such as providing funds for self-insuring the facilities against certain perils and for the stabilization of rates to smooth out rate increases and minimize customer rate shock, (d) transfers of certain amounts of revenues from the earnings of the Electric Utility to the City; and (e) allowances for any other lawful purpose.

Revenue Credits: In the determination of projected annual costs, adjustments should be made to reflect among other things, (a) the receipt of revenues from the investment of monies, and (b) the receipt of revenues from other operating sources such as the rental of land, the use of poles and the sale of scrap. The recognition of these revenue credits reduces the overall annual revenue requirement from electric rates to ultimate customers.

Total Annual Net Revenue Requirements: The total of the cost components described above less other income and other operating revenues is the total annual net revenue

requirements and such total represents the amount of revenues required to be recovered through rates and charges to ultimate customers.

Projected Revenue Requirements

Electric rates should be set at a level such that the revenues produced will be sufficient to meet near future revenue requirements. An important objective of a projected test year is to establish rates and rate levels that will also reflect the then current and near future costs of providing service and market conditions. Thus, it is necessary to estimate or project the various cost components over a reasonable period of time in order to determine the required rate levels. Projections must consider changes in operating practices, new facilities, increased regulatory (environmental) costs, expected changes in cost, and other factors that may affect the overall cost of operating and maintaining the utility system.

It was determined that the revenue requirements for this Electric Cost of Service Study would be predicated on the budgeted costs of the Electric Utility for the fiscal year ending September 30, 2020. The budgeted expenditures were used as a baseline in the development of the projections of the annual revenue requirements for the fiscal period ending September 30, 2020 through 2024. Based upon that detailed data and certain adjustments to reflect any known and anticipated changes and certain pro forma adjustments, the Consultant, together with members of the management and staff of the City, developed detailed estimates of projected expenditures for the fiscal years 2020 through 2024.

Assumptions and Considerations

The development of the projected revenue requirements for the Test Year required certain assumptions and considerations in order to reflect certain known or anticipated changes and certain pro forma adjustments. The analyses, estimates and projections summarized herein have been based upon an understanding of certain contracts, agreements, regulations, statutory requirements and planned operations. In the preparation of this report, certain assumptions have been made with respect to conditions, which may occur in the future. While these assumptions are reasonable for the preparation of this study, they are dependent upon future events and actual conditions may differ from those assumed. To the extent that actual future conditions differ from those assumed herein or provided to us by others, the actual results will vary from those projected.

The major assumptions and considerations included in the development of the projected annual revenue requirements have been divided into two categories and are listed below:

General

1. The general economic activity will not have a major impact on the City's electric sales and annual inflation will be approximately 1.5 percent.

2. Existing federal and state environmental laws, including the Clean Air Act Amendments of 1990, the Clean Air Interstate Rule and the Clean Air Mercury Rule, will continue to be implemented, applied and enforced, and no new laws, regulations, rules and interpretations will be imposed on the City or its wholesale suppliers resulting in more stringent environmental restrictions in the near term.
3. There will be no material change in the taxation of fuel used to produce electricity.
4. There will be no material change in the taxation of municipally-owned or municipally financed electric generation or purchased power, transmission and distribution systems.
5. There will be no material change in the level of federal, state or local regulation of municipally-owned utilities.
6. There will be no material change in the City's existing ability to import or export power over the transmission grid.
7. The existing form of governance and policies established by the City will continue throughout the Study Period.
8. The City will continue to be the exclusive owner and operator of the Electric Utility, including its transmission, distribution, and customer care facilities.

Specific

1. The fiscal year period ending September 30, 2020 through 2024 revenues and expenses for the Electric Utility and the underlying assumptions included therein provide a reasonable basis and reflect normalized system operation.
2. As discussed in Section 2, the sales forecast was the basis for the development of the projected retail energy and demand requirements for the Test Year. It should be recognized that (a) any meaningful variances in the load characteristics of existing or new customers, and/or (b) any differences in expected initiation of service for anticipated new customers, and/or (c) differences in the expected effectiveness of the various conservation programs initiated and contemplated by the City and/or (d) any changes in federal or state legislation that permit customers to select their energy service provider may result in a distortion and/or an over or under recovery of revenue requirements for the Test Year.
3. Power supply costs used herein are predicated in part on cost data provided by the City and on the continued purchase of power supply from its wholesale suppliers.
4. Expenses for the fiscal years 2020 through 2024 have been increased based on an assumed inflation rate of 1.5 percent per year except where noted in Table No. 3-1. Salaries have been escalated at 3.0 percent, benefits at 6.5 percent, insurance at 5.0 percent, and information technology at 15.0 percent for 2021 and 5.0 percent for years 2022 through 2024.

Section 3

5. Projected purchased power expenses have been estimated based on an analysis of purchased power expenses assuming an overall increase in kWh usage from 2020 of 0.5 percent per year, as shown on Table No. 3-4.
6. Projected debt service payments have been based on information provided by the City.
7. Capital improvement expenditures have been assumed to be funded from bond proceeds.
8. The amount for the Transfer to the General Fund has been based on current City policies and assumed to be constant at the current level.
9. Other Revenue has been projected based on the adopted fiscal year ending September 30, 2020 Budget and is set forth in Table No. 3-3.
10. Projected revenues from existing rates have been estimated based on the projected increases in sales from 2020 levels of 0.5 percent per year, as shown on Table No. 3-2.

Shown on Table No. 3-1 are the various expenditures and revenues for the fiscal years ending September 30, 2020 through 2024, and the adjustments discussed herein. In addition, each of the adjustments is noted in the footnotes to Table No. 3-1.

Summary

Based on the projected Test Year revenue requirements developed on Table No. 3-1, the existing rates produce revenues that are slightly greater than the cost of providing service on a system wide basis through fiscal year 2023. The projected revenue requirements and existing rate revenues are summarized below.

Description	Projected				
	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Net Revenue Requirements	\$58,158,995	\$58,531,674	\$60,360,905	\$58,782,793	\$62,340,635
Total Existing Rate Revenue	58,558,995	58,931,674	60,760,905	58,908,582	61,870,618
Surplus/(Deficiency)	\$400,000	\$400,000	\$400,000	\$125,789	(\$470,017)
Percent of Base and Fuel Revenue	0.8%	0.8%	0.8%	0.2%	-0.9%

CITY OF LAKE WORTH BEACH, FLORIDA
Electric Cost of Service Study

Summary of Projected Revenue Requirements and Existing Rate Revenues
Fiscal Year Ending September 30

Ln. No.	Description	Adopted Budget 2020 [1]	Adjustments to Adopted Budget 2020	2020 Revenue Requirements	2021 Revenue Requirements	2022 Revenue Requirements	2023 Revenue Requirements	2024 Revenue Requirements
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
	Operating Expenses [2]							
1	System Operations							
2	FMPA St. Lucie Project [3]	\$13,383,500	(1,017,663)	\$12,365,837	\$11,935,429	\$12,080,144	\$10,262,220	\$10,262,220
3	Supplemental Purchased Power [3]	6,883,410	(192,587)	6,690,823	8,051,368	9,283,216	8,924,855	10,544,973
4	FMPA Stanton Project [3]	4,068,280	(478,638)	3,589,642	2,478,288	2,428,288	1,975,436	2,074,208
5	Gas Transportation [4]	4,907,122	(899,312)	4,007,810	4,839,676	4,839,676	4,839,676	4,839,676
6	FPL Transmission [3]	2,060,000	(350)	2,059,650	2,449,945	2,653,423	3,128,335	4,066,835
7	Other System Operations	2,139,585	0	2,139,585	2,212,997	2,280,323	2,350,436	2,423,480
8	Total System Operations	33,441,897	(2,588,550)	30,853,347	31,967,703	33,565,069	31,480,958	34,211,392
9	Power Plant	2,811,675	0	2,811,675	2,920,412	3,030,805	3,146,279	3,267,096
10	Transmission and Distribution [5]	6,829,322	(1,345,646)	5,483,676	5,951,008	6,144,635	6,346,475	6,556,950
11	Customer Service	1,786,238	0	1,786,238	1,866,136	1,925,733	1,987,820	2,052,522
12	Meter Shop	1,252,515	0	1,252,515	1,296,276	1,340,612	1,386,903	1,435,250
13	Engineering	1,795,371	0	1,795,371	1,861,627	1,925,470	1,992,052	2,061,514
14	Administration	1,804,700	0	1,804,700	1,868,885	1,928,243	1,990,085	2,054,537
15	Conservation Management	16,390	0	16,390	17,621	18,279	18,966	19,684
16	Total Operating Expenses	49,738,108	(3,934,196)	45,803,912	47,749,668	49,878,847	48,349,537	51,658,945
	Other Revenue Requirements							
17	Debt Service [6]	3,493,633	0	3,493,633	1,120,169	2,964,875	2,974,500	3,686,600
18	Interfund Administrative Services	1,814,900	0	1,814,900	1,924,900	1,953,774	1,983,080	2,012,826
19	Contribution to General Fund	4,536,491	0	4,536,491	4,536,491	4,536,491	4,536,491	4,536,491
20	Other	420,000	0	420,000	426,300	432,695	439,185	445,773
21	Transfer to Rate Stabilization Fund	0	0	0	500,000	500,000	500,000	0
22	Reserves [7]	0	2,090,059	2,090,059	2,274,146	94,224	0	0
23	Total Other Revenue Requirements	10,265,024	2,090,059	12,355,083	10,782,006	10,482,058	10,433,256	10,681,690
24	TOTAL REVENUE REQUIREMENTS	60,003,132	(1,844,137)	58,158,995	58,531,674	60,360,905	58,782,793	62,340,635
	Projected Revenue From Sales							
25	Existing Base Rate Revenues	38,073,168	(2,736,514)	35,336,654 [8]	35,513,337	35,690,904	35,869,359	36,048,705
26	Power Cost Adjustment (PCA) [9]	15,842,358	(608,411)	15,233,947 [8]	15,310,116	16,840,157	14,685,933	17,343,322
27	Other Revenue	7,588,394	400,000	7,988,394 [10]	8,108,220	8,229,843	8,353,291	8,478,590
28	TOTAL REVENUES FROM SALES	61,503,920	(2,944,925)	58,558,995	58,931,674	60,760,905	58,908,582	61,870,618
29	Revenue Surplus or (Deficiency)	\$1,500,788	(\$1,100,788)	\$400,000	\$400,000	\$400,000	\$125,789	(\$470,017)
	Surplus or (Deficiency) as a % of:							
30	Existing Base Rate Revenues			1.1%	1.1%	1.1%	0.4%	-1.3%
31	Existing Base Rate and PCA Revenues			0.8%	0.8%	0.8%	0.2%	-0.9%

CITY OF LAKE WORTH BEACH, FLORIDA
Electric Cost of Service Study

Footnotes to Table No. 3-1

- [1] Based on the Fiscal Year Ending September 30, 2020 Budget.
- [2] Unless otherwise noted, operating expenses are based on the 2020 Budget, escalated in 2021 through 2024 by the assumed general inflation rate of 1.5% per year; salaries escalated at 3.0%, benefits at 6.6%, insurance at 5.0% and information technology at 15.0% for 2021 and 5% for years 2022 through 2024.
- [3] FY 2020 adjustments based on actual expenses. FY 2021-2024 projections provided by the City's power supply consultant, as shown on Table No. 3-4.
- [4] FY 2020 adjustment based on actual expenses.
- [5] FY 2020 adjustment based on actual expenses. The adjustment includes a \$670,077 reduction in maintenance expenses, a \$398,624 reduction in personnel expenses, and a \$276,945 reduction in other expenses.
- [6] Based on information provided by the City.
- [7] Replenishment of Reserves to maintain cash balances.
- [8] From Table No. 3-2, Page 2.
- [9] FY 2020 and FY 2021 based on current PCA; FY 2022 through FY 2024 based on increase in power costs shown on Table No. 3-4.
- [10] From Table No. 3-3.

CITY OF LAKE WORTH BEACH, FLORIDA
Electric Cost of Service Study

**Projected Revenues at
EXISTING RATES
Fiscal Year Ending September 30, 2020**

Ln No.	Customer Class Description	Existing Rate	Billing Determinants	Base Rate Revenue	Power Cost Adjustment	Total Revenue
	(a)	(b)	(c)	(d)	(e)	(f)
Residential Regular						
1	Customer Charge	\$ 10.53	283,858	\$ 2,989,025	\$ -	\$ 2,989,025
2	Energy Charge < 1,000 kWh	\$ 0.05148	208,292,160	10,722,880	-	10,722,880
3	Energy Charge > 1,000 kWh	\$ 0.07880	55,702,973	4,389,394	-	4,389,394
4	Power Cost Adjustment < 1,000 kWh	\$ 0.03578	208,292,160	-	7,452,693	7,452,693
5	Power Cost Adjustment > 1,000 kWh	\$ 0.03900	55,702,973	-	2,172,416	2,172,416
6	Capacity Charge	\$ 0.01020	263,995,133	2,692,750	-	2,692,750
7	<i>Subtotal Residential Regular</i>			\$ 20,794,050	\$ 9,625,109	\$ 30,419,159
Residential Net Metering						
8	Customer Charge	\$ 10.53	1,232	\$ 12,973	\$ -	\$ 12,973
9	Energy Charge < 1,000 kWh	\$ 0.05148	772,358	39,761	-	39,761
10	Energy Charge > 1,000 kWh	\$ 0.07880	206,550	16,276	-	16,276
11	Power Cost Adjustment < 1,000 kWh	\$ 0.03578	772,358	-	27,635	27,635
12	Power Cost Adjustment > 1,000 kWh	\$ 0.03900	206,550	-	8,055	8,055
13	Capacity Charge	\$ 0.01020	978,908	9,985	-	9,985
14	<i>Subtotal Residential Net Metering</i>			\$ 78,995	\$ 35,690	\$ 114,685
15	Total Residential		<u>264,974,041</u>	<u>\$ 20,873,045</u>	<u>\$ 9,660,800</u>	<u>\$ 30,533,845</u>
Commercial Regular						
16	Customer Charge	\$ 16.66	37,425	\$ 623,501	\$ -	\$ 623,501
17	Energy Charge	\$ 0.07040	115,475,216	8,129,455	-	8,129,455
18	Capacity Charge	\$ 0.01020	115,475,216	1,177,847	-	1,177,847
19	Power Cost Adjustment	\$ 0.03578	115,475,216	-	4,131,703	4,131,703
20	<i>Subtotal Commercial Regular</i>			\$ 9,930,803	\$ 4,131,703	\$ 14,062,506
Commercial Net Metering						
21	Customer Charge	\$ 16.66	105	\$ 1,749	\$ -	\$ 1,749
22	Energy Charge	\$ 0.07040	477,459	33,613	-	33,613
23	Capacity Charge	\$ 0.01020	477,459	4,870	-	4,870
24	Power Cost Adjustment	\$ 0.03578	477,459	-	17,083	17,083
25	<i>Subtotal Commercial Net Metering</i>			\$ 40,232	\$ 17,083	\$ 57,316
26	Total Commercial		<u>115,952,675</u>	<u>\$ 9,971,035</u>	<u>\$ 4,148,787</u>	<u>\$ 14,119,822</u>

CITY OF LAKE WORTH BEACH, FLORIDA
Electric Cost of Service Study
Projected Revenues at
EXISTING RATES
Fiscal Year Ending September 30, 2020

Ln No.	Customer Class Description (a)	Existing Rate (b)	Billing Determinants (c)	Base Rate Revenue (d)	Power Cost Adjustment (e)	Total Revenue (f)
Commercial Service Demand						
27	Customer Charge	\$ 120.00	1,020	\$ 122,400	\$ -	\$ 122,400
28	Energy Charge	\$ 0.03550	49,285,812	1,749,646	-	1,749,646
29	Capacity Charge	\$ 0.01020	49,285,812	502,715	-	502,715
30	Power Cost Adjustment	\$ 0.02890	49,285,812	-	1,424,360	1,424,360
31	Demand Charge	\$ 14.48	104,476	1,512,812	-	1,512,812
32	Total Commercial Service Demand			\$ 3,887,574	\$ 1,424,360	\$ 5,311,934
33	Total Private Area Lighting		1,253,950	\$ 250,000		250,000
34	Total Street Lights		2,554,336	\$ 355,000		355,000
35	TOTAL RATE REVENUES			\$ 35,336,654	\$ 15,233,947	\$ 50,570,601
36	OTHER REVENUES					7,588,394
37	TOTAL REVENUES					\$ 58,158,995

CITY OF LAKE WORTH BEACH, FLORIDA
Electric Cost of Service Study

Summary of Other Electric Revenues

Fiscal Year Ending September 30

Ln. No.	Description (a)	Adopted Budget 2020 [1] (b)	Adjustments to Budget (c)	Adjusted Test Year Revenues (d)
<u>Other Electric Revenues</u>				
1	Gas Transportation Revenues	\$5,090,719	\$0	\$5,090,719
2	NSF and Bank Charges	15,000	0	15,000
3	Miscellaneous [2]	246,600	0	246,600
4	Service Charge	670,000	0	670,000
5	Penalties/Late Fees	520,000	0	520,000
6	Tampering Fines	15,000	0	15,000
7	Investments	147,895	0	147,895
8	FDOT-Reimbursement	131,000	0	131,000
9	Other	38,100	0	38,100
10	Water	381,310	0	381,310
11	Refuse	32,770	0	32,770
12	Local Sewer	300,000	0	300,000
13	Increased Commercial Minimum Charge	0	400,000	400,000
14	Total Other Electric Revenues	<u>\$7,588,394</u>	<u>\$400,000</u>	<u>\$7,988,394</u>

[1] Based on the Budgeted 2020 Electric Revenue Fund provided by the City.

[2] Pole Attachment Fees.

CITY OF LAKE WORTH BEACH, FLORIDA
Electric Cost of Service Study

Calculation of Power Cost Adjustment (PCA)

Fiscal Year Ending September 30

Ln. No.	Description (a)	2020 (b)	2021 (c)	2022 (d)	2023 (e)	2024 (f)
	<u>Power Costs [1]</u>					
1	FMPA St. Lucie Project	\$12,365,837	\$11,935,429	\$12,080,144	\$10,262,220	\$10,262,220
2	Supplemental Purchased Power	6,690,823	8,051,368	9,283,216	8,924,855	10,544,973
3	FMPA Stanton Project	3,589,642	2,478,288	2,428,288	1,975,436	2,074,208
4	FPI Transmission	2,059,650	2,449,945	2,653,423	3,128,335	4,066,835
5	Total Power Costs	<u>\$24,705,952</u>	<u>\$24,915,030</u>	<u>\$26,445,071</u>	<u>\$24,290,846</u>	<u>\$26,948,236</u>
6	Total Energy Purchased (kWh)	472,374,000	474,736,000	477,110,000	479,495,000	481,893,000
7	Total Cost Per kWh Purchased	\$0.0523	\$0.0525	\$0.0554	\$0.0507	\$0.0559
8	Total Energy Sales (kWh) [2]	434,020,814	434,572,275	436,745,136	438,928,862	441,123,506
9	Total Cost Per kWh Sold	<u>\$0.0569</u>	<u>\$0.0573</u>	<u>\$0.0606</u>	<u>\$0.0553</u>	<u>\$0.0611</u>
10	FMPA St. Lucie Project Fixed Costs	\$12,365,837	\$11,935,429	\$12,080,144	\$10,262,220	\$10,262,220
11	FMPA Stanton Project Fixed Costs		<u>1,120,499</u>	<u>1,955,310</u>	<u>2,627,195</u>	<u>2,627,195</u>
12	Net Power Costs		\$11,859,102	\$12,409,617	\$11,401,431	\$14,058,821
13	Transfer to Rate Stabilization Fund		<u>500,000</u>	<u>500,000</u>	<u>500,000</u>	<u>0</u>
14	Net Power Costs for PCA		\$12,359,102	\$12,909,617	\$11,901,431	\$14,058,821
15	Calculated PCA per kWh		<u>\$0.0284</u>	<u>\$0.0296</u>	<u>\$0.0271</u>	<u>\$0.0319</u>

[1] FY 2020 Based on actual 8 months; FY 2021-2024 provided by the City's power supply consultant

[2] FY 2020 from Table No. 2-2; FY 2021-2024 based on a growth rate of 0.5% per year.

Section 4

**FUNCTIONALIZATION AND CLASSIFICATION OF COSTS
AND DEVELOPMENT OF ALLOCATION FACTORS**

Functionalization and Classification

In allocating utility costs to the various customer classes, there are three major processes: functionalization, classification, and allocation. The functionalization and classification of the Test Year revenue requirement are discussed in the first part of this section. The development of allocation factors for the Test Year revenue requirement is discussed and set forth in the second half of this section.

Functionalization of Test Year Expenditures

Although budgeting and accounting systems generally follow functional groups, i.e., production, transmission, etc., certain costs such as those associated with administrative and general expenses and bond service generally are not assigned by accounting and budgetary convention to a major function. A COS study usually requires the rearrangement of certain expenditures into functional groups (i) to be more representative of the expenditure causation, (ii) to combine costs that have been incurred for a similar purpose, and (iii) to facilitate the allocation of cost responsibility. Thus, the functionalization of certain costs is merely a ratemaking mechanism to apportion such costs to the common utility function.

The typical functions of the Test Year Revenue Requirements are developed in the COS model and summarized on Table 4-1 and below.

<u>Function and Description</u>	<u>Test Year Amount</u>
<i>Production.</i> Those costs associated with generating or purchasing power and delivering that power to the utility's bulk transmission system	\$40,313,652
<i>Transmission and Distribution.</i> Those costs incurred in connection with the delivery of power over the bulk transmission system through the primary and secondary distribution system to the utility's consumers	\$13,863,265
<i>Customer.</i> Those costs that are related to the number, type and size of customers	<u>\$3,982,058</u>
Total	<u>\$58,158,995</u>

An analysis of the Test Year revenue requirements was made to estimate the functionalized Test Year revenue requirements.

Classification of Various Costs

Historically, electric utility costs or the components of the annual revenue requirement have generally been classified as (1) demand-related, (2) variable or energy-related, and (3) customer-related. Thus, if a cost or expense is fixed or does not vary directly with the level of kWh purchased or sold, the cost was assumed to be generally related to the demands or load of the customers and was allocated to the various customer classes on the basis of demand or load relationships. Debt service is one example of an expenditure generally classified as demand-related. If a cost or expense was viewed to vary with the amount of kWh the electric utility sold, the cost or expense was usually classified as energy-related and allocated to the various customer classes on the basis of kWh relationships. Purchased energy costs are a primary example of expenses classified as variable or energy-related and allocated on the basis of kWh sales. If the cost is directly related to the number of customers which are being served, these costs would generally be classified as such and allocated to the customer classes based on the customer relationship among the customer classes. An example of customer-related costs is meter reading expenses.

Until such time that the development of more detailed data with regard to hourly usage characteristics and costs is economically justified or legally required, the classification of costs described below reflects usual regulatory practice as well as a reasonable and equitable approach.

Demand (Fixed) Costs: Are defined as those costs incurred to maintain in readiness-to-serve an electric system capable of meeting the total combined demands of all classes of customers. Demand costs are those costs that are generally fixed in the short-run, that do not materially vary directly with the number of kWh generated or sold, and that are not defined as customer costs. Demand costs will include that portion of operation and maintenance expenses; debt service; renewals, replacements and improvements; and other costs which are not designated as specifically customer or variable energy costs.

Customer Costs: Are defined as those costs directly related to the number, type and size of customers, such as customer accounting and collecting, and costs of meters and services.

Energy (Variable) Costs: Are defined as those costs that vary substantially or directly with the amount of energy sold or generated and purchased, including such items as fuel and a portion of operation and maintenance expense for production facilities.

Development of Allocation Factors

General

This section discusses the development of the factors utilized to allocate the capacity related, energy related, customer related, and other costs to the various customer classes. The aforementioned costs are allocated to the customer classes according to their respective customer class, and the particular cost allocation factor developed for each

class and for each type of cost. The customer classes include Residential, Commercial, Commercial Demand, and Lighting.

Demand Allocation Factors

"Demand Allocation" refers to the basis on which capacity and other demand related costs are distributed or assigned (allocated) among the various customer classes for the purpose of determining the revenues required from each class to recover such costs. The demand allocation factors, as developed and used herein, reflect the cost responsibility for each of the various customer classes in relation to the capacity or demand related costs to be allocated. The demand allocation factors were used to apportion the following capacity or demand related costs among the various customer classes.

- Production and purchased power expenses (fixed capacity costs only);
- Transmission and distribution expenses;
- Debt service requirements;
- Allowances for renewal and replacements, and reserves; and
- Payments to the City.

The demand allocation factors were developed based on historical demand and energy relationships filed with the Public Service Commission by the investor-owned utilities in Florida for 2018 and an analysis of the City's billing demands. The demand allocation factors are based on the estimated annual coincident and non-coincident peak demands. Table No. 4-2 summarizes the demand allocation factors. Table No. 4-5 shows a comparison of the results of the load research for the investor-owned utilities.

Energy Allocation Factors

Energy allocation factors are the basis for apportioning those costs or expenses classified as variable or energy related and assumed to vary directly with the level of kWh sales or generation. The costs classified herein as variable or energy related are fuel, purchased power, and the variable portion of other production expenses.

The projected fiscal year energy sales data are discussed in Section 2. The resulting energy allocation factors are shown on Table No. 4-3.

Customer Allocation Factors

Customer costs are defined herein as those costs related to the number of customers and the size of service required. Included in the customer related costs are the costs associated with meter reading, meter maintenance, customer installations, billing, collecting, and other customer related accounting, service, and information functions. The customer allocation factors were based on the projected average number of customers in each customer classification during the Test Year.

In apportioning customer related costs and revenues to the various customer classifications, customer allocation factors were utilized that recognized weighted and

Section 4

unweighted customers and fixtures. The customer weighting factors were based on FPL customer charges. The customer allocation factors are shown on Table No. 4-4.

Other Allocation Factors

Certain elements of the annual revenue requirement are related to revenues. Miscellaneous other allocation factors including the revenue allocation factors are included in the COS model.

CITY OF LAKE WORTH BEACH, FLORIDA
Electric Cost of Service Study
Functionalization of Test Year Revenue Requirements

Ln No	Function	<i>FY 2020 Test Year Amount</i>
1	Production	\$ 40,313,652
2	Transmission and Distribution	\$ 13,863,285
3	Customer	\$ 3,982,058
4	TOTAL REVENUE REQUIREMENTS	\$ 58,158,995

CITY OF LAKE WORTH BEACH, FLORIDA
Electric Cost of Service Study

Summary of Demand Allocation Factors

Ln. No.	Customer Class (a)	Average 12 CP		Average Demand			PSC 12 CP Methodology				NCP Demand	
		Demand @ Source (kW) (b)	Percent of Total (%) (c)	2020 Energy at Source (Mwh) (d)	Average Demand (kW) (e)	Percent of Total (%) (f)	Avg. 12 CP @12/13 (kW) (g)	Avg. kW @1/13 (kW) (h)	Total (kW) (%) (i) (j)		Demand @ Source (kW) (k)	Percent of Total (%) (l)
1	Residential	47,377	59.73%	274,869	31,378	61.05%	43,733	2,414	46,146	59.80%	62,668	62.36%
2	Commercial	22,054	27.81%	120,283	13,731	26.72%	20,358	1,056	21,414	27.75%	25,878	25.75%
3	Commercial Demand	8,979	11.32%	51,126	5,836	11.36%	8,288	449	8,737	11.32%	11,012	10.96%
4	Lighting	902	1.14%	3,951	451	0.88%	833	35	867	1.12%	941	0.94%
5	TOTAL SYSTEM	79,312	100.00%	450,229	51,396	100.00%	73,211	3,954	77,165	100.00%	100,499	100.00%

CITY OF LAKE WORTH BEACH, FLORIDA
Electric Cost of Service Study

Development of Demand Allocation Factors

Ln. No.	Customer Class (a)	Total FY 2020 Energy (Mwh) (b)	Average 12 CP				Non-Coincident Peak					
			Load Factor (%) [1] (c)	Demand @ Meter (kW) (d)	Delivery Efficiency (e)	Demand @ Source (kW) (f)	Percent of Total (%) (g)	Load Factor (%) [1] (h)	Demand @ Meter (kW) (i)	Delivery Efficiency (j)	Demand @ Source (kW) (k)	Percent of Total (%) (l)
1	Residential	264,974	66.25%	45,671	0.9640	47,377	59.73%	50.07%	60,412	0.9640	62,668	62.36%
2	Commercial	115,953	62.26%	21,260	0.9640	22,054	27.81%	53.06%	24,946	0.9640	25,878	25.75%
3	Commercial Demand	49,286	65.00%	8,656	0.9640	8,979	11.32%	53.00%	10,616	0.9640	11,012	10.96%
4	Lighting	3,808	50.00%	869	0.9640	902	1.14%	47.90%	908	0.9640	941	0.94%
5	TOTAL SYSTEM	<u>434,021</u>		<u>76,457</u>		<u>79,312</u>	<u>100.00%</u>		<u>96,881</u>		<u>100,499</u>	<u>100.00%</u>

[1] Average 12 CP and NCP Load Factors are based on an FPL 2018 Load Research Study filed with the PSC and an analysis of billing demands for the Commercial Demand class.

CITY OF LAKE WORTH BEACH, FLORIDA
Electric Cost of Service Study

Summary of Energy Allocation Factors

Fiscal Year 2020

Ln. No.	Customer Class (a)	Energy (Mwh) [1]		Allocation Factors (%)	
		Energy Sales (b)	Net Generation (c)	Energy Sales (d)	Net Generation (e)
1	Residential	264,974	274,869	61.05%	61.05%
2	Commercial	115,953	120,283	26.72%	26.72%
3	Commercial Demand	49,286	51,126	11.36%	11.36%
4	Lighting	3,808	3,951	0.88%	0.88%
5	TOTAL SYSTEM	434,021	450,229	100.00%	100.00%

[1] A factor of 3.6% was assumed for System Losses based on data received from the City of Lake Worth.

CITY OF LAKE WORTH BEACH, FLORIDA
Electric Cost of Service Study

Summary of Customer Allocation Factors
Fiscal Year 2020

Ln. No.	Customer Class (a)	Unweighted Customers		Weighted Customers			Unweighted - No Lighting	
		Customers (b)	Factor (c)	Weighting Factor ^[1] (d)	Customers ^[2] (e)	Factor (f)	Customers (g)	Factor (h)
1	Residential	23,758	86.33%	1.00	23,758	85.05%	23,758	88.09%
2	Commercial	3,128	11.37%	1.30	4,066	14.55%	3,128	11.60%
3	Commercial Demand	85	0.31%	1.30	111	0.40%	85	0.32%
4	Lighting	549	1.99%	0.00	0	0.00%	0	0.00%
5	TOTAL SYSTEM	<u>27,519</u>	<u>100.00%</u>		<u>27,934</u>	<u>100.00%</u>	<u>26,970</u>	<u>100.00%</u>

[1] Based on FPL customer charges.

[2] Weighted customers are equal to Column (b), Unweighted Customers multiplied times Column (d), the Weighting Factor.

Table No. 4-5

CITY OF LAKE WORTH BEACH, FLORIDA
Electric Cost of Service Study

Comparison of Load Research Results *

Ln. No.	<u>Utility</u> (a)	<u>Rate Schedule</u> (b)	12 CP Load Factor (c)	NCP Load Factor (d)
<u>Residential Service</u>				
1	Florida Power & Light Company	RS-1	66.2%	50.1%
2	Duke Energy Florida	RS-1	54.8%	37.0%
3	Tampa Electric Company	RS	56.0%	45.0%
4	Gulf Power Company	RS	58.4%	38.8%
<u>General Service Non-Demand</u>				
5	Florida Power & Light Company	GS-1 (less than 21kw)	62.3%	53.1%
6	Duke Energy Florida	GS-1 (no demand breakpoint)	57.6%	45.1%
7	Tampa Electric Company	GS (less than 50 kw)	58.0%	43.0%
8	Gulf Power Company	GS (less than 20 kw)	57.4%	43.5%
<u>General Service Demand</u>				
9	Florida Power & Light Company	GSD-1 (21 - 499 kw)	72.1%	64.0%
10	Duke Energy Florida	GSD-1 (above 24,000 kwh/year)	74.2%	62.6%
11	Tampa Electric Company	GSD-1 (50 - 999 kw)	75.0%	63.0%
12	Gulf Power Company	GSD-1 (20 - 499 kw)	74.4%	56.4%

* The information shown for the investor owned electric utilities reflects the results of 2017-2018 Load Research reported to the PSC.

Section 5 ALLOCATED COST OF SERVICE

General

As one of the factors considered in the development of the proposed rate levels and rate structures included herein, certain analyses common in ratemaking have been employed which provide a reasonable indication of the revenue levels required to recover the full cost of service or revenue requirement of each customer class. Since it is not the practice in utility accounting to maintain a subdivision of accounts that will report the cost of rendering service to each customer class, an allocation of costs must be made on the basis of parameters predicated upon the available classifications of operating expense and utility plant.

Present and Proposed Rate Classifications

The present customer classifications are as follows:

- Residential
- Commercial
- Commercial Demand
- Lighting

Allocation and Assignment of the Cost of Service

The allocated cost of service was developed, along with the target rate change for each class, based on a comparison of existing rate revenues.

Table No. 5-1 summarizes the results of the allocated COS study. Table No. 5-2 shows the results of the functionalization and classification of the Test Year revenue requirements and Table No. 5-3 summarizes the cost of service by customer class.

The target rate changes by customer class were developed to move toward the cost of service. The projected Test Year revenues under the existing rates and charges, the target revenue adjustments, and the percentage change necessary to recover the revenue requirements to move toward the cost of service for each of the major rate classifications, as summarized from the COS model, are as follows:

Section 5

Test Year 2020			
Customer Class	Total Existing		
	Revenue	Target Adjustments	
	(\$000)	(\$000)	(%) [1]
Residential	\$35,500	\$0	0.0%
Commercial	16,207	(313)	-2.2%
Commercial Demand	6,143	(117)	-2.2%
Lighting	708	30	5.0%
Total System	\$58,559	(\$400)	-0.8%

[1] Percent of existing base rates and PCA revenues.

Based on the cost of service and target adjustments for the Test Year and the projected revenue requirements, the target adjustments for Fiscal Year 2021 can be estimated as follows:

Fiscal Year 2021			
Customer Class	Total Existing		
	Revenue	Target Adjustments	
	(\$000)	(\$000)	(%) [1]
Residential	\$35,726	\$0	0.0%
Commercial	16,310	(313)	-2.2%
Commercial Demand	6,182	(117)	-2.2%
Lighting	713	30	5.0%
Total System	\$58,932	(\$400)	-0.8%

[1] Percent of existing base rates and PCA revenues.

CITY OF LAKE WORTH BEACH, FLORIDA
Electric Cost of Service Study

Table No. 5-1
Page 1 of 2

Test Year Cost of Service by Customer Class

Line No.	Description	Total	Allocation Factor	Residential	Commercial	Commercial Demand	Lighting	Total
	(a)		(c)	(d)	(e)	(f)	(g)	(i)
3								
4								
5	<u>Production</u>							
6	Production Demand related							
7	Production - D	31,643,020	12 CP	18,923,262	8,781,229	3,582,894	355,635	31,643,020
8	Blank	0	N/A	0	0	0	0	0
9	Blank	0	N/A	0	0	0	0	0
10	Blank	0	N/A	0	0	0	0	0
11	Blank	0	N/A	0	0	0	0	0
12	Blank	0	N/A	0	0	0	0	0
13	Production Energy related							
14	Fuel & PP	8,670,632	Test Year Sales - kWh	5,293,507	2,316,439	984,605	76,080	8,670,632
15	Variable O&M	0	N/A	0	0	0	0	0
16	Blank	0	N/A	0	0	0	0	0
17	Blank	0	N/A	0	0	0	0	0
18	Production Direct Assignment							
19	Direct Assignment A	0	N/A	0	0	0	0	0
20	Other	0	N/A	0	0	0	0	0
21	Total Production	40,313,652		24,216,769	11,097,669	4,567,499	431,715	40,313,652
22	Check	TRUE						
23		40,313,652						
24	<u>Transmission</u>							
25	Demand Related							
26	115 kV	0	N/A	0	0	0	0	0
27	89 kV	0	N/A	0	0	0	0	0
28	115 kV - Sub	0	N/A	0	0	0	0	0
29	89 kV - Sub	0	N/A	0	0	0	0	0
30	Blank	0	N/A	0	0	0	0	0
31	Blank	0	N/A	0	0	0	0	0
32	Direct Assignment							
33	Service 1	0	N/A	0	0	0	0	0
34	Service 2	0	N/A	0	0	0	0	0
35	Blank	0	N/A	0	0	0	0	0
36	Total Transmission	0		0	0	0	0	0
37	Check	TRUE						
38		0						
39	<u>Distribution</u>							
40	Demand Related							
41	Substations	0	N/A	0	0	0	0	0
42	Primary-Dmd	0	N/A	0	0	0	0	0
43	Sec-Dmd	0	N/A	0	0	0	0	0
44	Total Demand	13,863,285	1 NCP	8,544,650	3,569,729	1,519,035	129,872	13,863,285
45	Blank	0	N/A	0	0	0	0	0
46	Blank	0	N/A	0	0	0	0	0
47	Customer Related							
48	Primary-Cust	0	N/A	0	0	0	0	0
49	Sec-Cust	0	N/A	0	0	0	0	0
50	Service Drp	0	N/A	0	0	0	0	0
51	Trans-CR	0	N/A	0	0	0	0	0
52	Total Cust	0	N/A	0	0	0	0	0
53	Blank	0	N/A	0	0	0	0	0
54	Direct Assignment							
55	Lighting	0	N/A	0	0	0	0	0
56	Blank	0	N/A	0	0	0	0	0
57	Total Distribution	13,863,285		8,544,650	3,569,729	1,519,035	129,872	13,863,285
58	Check	TRUE						
59		13,863,285						

CITY OF LAKE WORTH BEACH, FLORIDA
Electric Cost of Service Study
Test Year Cost of Service by Customer Class

Table No. 5-1
Page 2 of 2

Line No.	Description	Total	Allocation Factor	Residential	Commercial	Commercial Demand	Lighting	Total
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
60	Customer							
61	Meters	1,672,339	Weighted Customers	1,422,315	243,408	6,615	0	1,672,339
62	Cust Accounting	0	Weighted Customers	0	0	0	0	0
63	Cust Service	2,309,719	Weighted Customers	1,964,403	336,179	9,137	0	2,309,719
64	Sales	0	Weighted Customers	0	0	0	0	0
65	Blank	0	N/A	0	0	0	0	0
66	Total Customer	3,982,058		3,386,718	579,587	15,752	0	3,982,058
67	Check	TRUE						
68		3,982,058						
69	Direct Assignments Other							
70	Lighting Adjustment	0		(90,000)	(50,000)	(50,000)	190,000	0
71	Total Direct Assignment Other	0		(90,000)	(50,000)	(50,000)	190,000	0
72	Check	TRUE						
73								
74	Total Cost of Service	\$ 58,158,995		\$ 36,158,138	\$ 15,196,985	\$ 6,052,286	\$ 751,587	\$ 58,158,995
75	Check	TRUE						
76	Total Unit Cost (\$/kWh)			\$ 0.136	\$ 0.131	\$ 0.123	\$ 0.197	\$ 0.134
77	Base Rate Unit Cost (\$/kWh)			\$ 0.136	\$ 0.131	\$ 0.123	\$ 0.197	\$ 0.134
78								
79								
80	Revenue Adequacy Check							
81	TY Base Rate Revenue	\$35,336,654	TY Base Rate Rev	\$20,873,045	\$9,971,035	\$3,887,574	\$605,000	\$35,336,654
82	TY Other Revenue - PCA	\$15,233,947	PCA	9,660,800	4,148,787	1,424,360	0	15,233,947
83	TY Other Revenue	\$7,988,394	Revenue Req	4,966,479	2,087,373	831,308	103,234	\$7,988,394
84	TY Other Revenue	\$0		\$0	\$0	\$0	\$0	\$0
85	Subtotal	\$58,558,995		\$35,500,324	\$16,207,195	\$6,143,242	\$708,234	\$58,558,995
86	Existing Rate Unit Cost (\$/kwh)			\$ 0.134	\$ 0.140	\$ 0.125	\$ 0.186	\$ 0.135
87	TY Rate Revenue	\$58,558,995		\$35,500,324	\$16,207,195	\$6,143,242	\$708,234	\$58,558,995
89	TY Retail Rate Revenue	\$0	Other Revenue	0	0	0	0	\$0
90	TY Total Rate Revenue	\$58,558,995		\$35,500,324	\$16,207,195	\$6,143,242	\$708,234	\$58,558,995
91								
92	TY Rate Revenue Requirement	\$58,158,995		\$ 36,158,138	\$ 15,196,985	\$6,052,286	\$751,587	\$58,158,995
93	TY Other Retail Rate Revenue	\$0		0	0	0	0	0
94	TY Total Rate Revenue Requirement	\$58,158,995		\$36,158,138	\$15,196,985	\$6,052,286	\$751,587	\$58,158,995
95								
96	Difference \$	(\$400,000)		\$ 657,814	(\$1,010,210)	(\$90,956)	\$43,353	(400,000)
97								
98								
99	Unadjusted Difference \$	(\$400,000)		\$657,814	(\$1,010,210)	(\$90,956)	\$43,353	(400,000)
100	Unadjusted Difference %	-0.8%		2.2%	-7.2%	-1.7%	7.2%	
101								
102	Target Difference \$	(\$400,000)		\$0	(\$313,367)	(\$116,863)	\$30,250	(400,000)
103	Target Difference %	-0.8%		0.0%	-2.2%	-2.2%	5.0%	

CITY OF LAKE WORTH BEACH, FLORIDA
Electric Cost of Service Study
Classification of Test Year Revenue Requirements

Ln No	Classification	<i>FY 2020</i> <i>Test Year Amount</i>
	Production	
1	Demand Related	\$ 31,643,020
2	Energy Related	8,670,632
3	Total Production	<u>\$ 40,313,652</u>
	Transmission and Distribution	
4	Demand Related	\$ 13,863,285
5	Customer Related	0
6	Direct Assignment	0
7	Total Distribution	<u>\$ 13,863,285</u>
8	Customer <i>(Customer Related)</i>	<u>\$ 3,982,058</u>
9	TOTAL REVENUE REQUIREMENTS	<u><u>\$ 58,158,995</u></u>

CITY OF LAKE WORTH BEACH, FLORIDA
Electric Cost of Service Study
Results of the Cost of Service Analysis

Ln No	Customer Class (a)	Test Year 2020			Difference (%) [1] (e)
		Cost of Service (b)	Existing Revenues (c)	Difference (d)	
1	Residential	\$36,158,138	\$35,500,324	(\$657,814)	-2.2%
2	Commercial	15,196,985	16,207,195	1,010,210	7.2%
3	Commercial Demand	6,052,286	6,143,242	90,956	1.7%
4	Lighting	751,587	708,234	(43,353)	-7.2%
5	TOTAL	<u>\$58,158,995</u>	<u>\$58,558,995</u>	<u>\$400,000</u>	<u>0.8%</u>

[1] Percent of existing base rates and PCA revenues.

CITY OF LAKE WORTH BEACH, FLORIDA
Electric Cost of Service Study

Calculation of Fixed Costs per Customer [1]

Ln. No.	<u>Description</u> (a)	<u>Residential</u> (b)	<u>Commercial</u> (c)
1	Distribution Fixed Costs [2]	\$8,644,650	\$3,569,729
2	Customer Fixed Costs [2]	<u>\$3,386,718</u>	<u>\$579,587</u>
3	Total	\$12,031,368	\$4,149,316
4	Number of Customers [3]	23,758	3,128
5	Fixed Cost/Customer/Year	\$506.41	\$1,326.51
6	Fixed Cost/Customer/Month	\$42.20	\$110.54
7	Purchased Capacity [2]	\$18,923,262	\$8,781,229
8	Total Including Purchased Capacity	\$30,954,630	\$12,930,545
9	Fixed Cost/Customer/Month	\$109	\$344

[1] Based on Electric Cost of Service Study.

[2] From Table No. 5-1.

[3] From Table No. 2-1.

General Rate Design Criteria

Rate design is the culmination of a rate study whereby the rates and charges for each customer classification are established in such a manner that the total revenue requirement of the system will be recovered in an equitable manner consistent with the results of the allocated cost of service study and any applicable orders and/or requirements of local, state, and federal regulatory authorities. To the extent possible, rate design should consider and reflect overall revenue stability, historical rate form, conservation considerations, competitiveness with neighboring utility systems, and the policies of those charged with the management and operation of the City.

The proposed rate levels and rate structures developed and submitted to the City for consideration and adoption should continue to meet the following electric utility rate criteria for service provided by municipally owned utilities:

- Electric rates should be based on a rate policy which calls for the lowest possible prices consistent with customer requirements, quality service efficiently rendered, and a payment to the City.
- Electric rates should be simple and understandable.
- Electric rates should be equitable among classes of customers and individuals within classes, taking into consideration the cost of service.
- Electric rates should be designed to encourage the most efficient use of the utility plant and discourage unnecessary or wasteful use of service.
- Electric rates should comply with applicable orders and requirements of local, state and federal regulatory authorities that have jurisdiction.

Proposed Rates

The existing rates and the proposed rates necessary to recover the revenue requirements are summarized on Table No. 6-1. The proposed rates reflect with the required rate changes by class applied to the customer, demand and energy charges. Table No. 6-2 shows calculation of the projected revenues at the proposed rates.

Table No. 6-1 also shows the existing and proposed minimum bills for each rate class. Base on the cost of service shown on Table No. 5-1 and Table No. 5-4, the fixed distribution and customer costs allocated to the residential class are \$8,664,650 and \$3,386,718, respectively, for a total of \$12,051,368. Dividing this total by 23,758 residential customers results in \$507 per customer per year, or approximately \$42 per customer per month. This does not include fixed purchased power costs. Based on this fixed cost per customer, it is proposed that the residential minimum charge be increased

to \$35 per month. Similarly, the fixed distribution and customer costs allocated to the commercial class results in approximately \$111 per customer per month, and it is proposed that the commercial minimum charge be increased to \$100 per month.

Rate Stabilization Fund

It is recommended that the City establish a Rate Stabilization Fund to use if necessary to avoid variations in customers’ bills because of changes in the cost of purchased power. Section 4.08 of the City’s Bond Resolution states “The issuer may transfer into the Rate Stabilization Fund such moneys which are on deposit in the Utility Reserve Fund as it deems appropriate. The issuer may transfer such amount of moneys from the Rate Stabilization Fund to the Revenue Fund as it deems appropriate.”

Power Cost Adjustment

It is recommended that a separate rate component continue to be implemented that recovers the cost of purchased power. It is proposed that this factor be calculated every year and adjusted as necessary. The proposed factor includes the variable Stanton costs, capacity and energy purchased power costs, fuel and transmission costs. Table No. 3-4 shows the proposed calculation of the PCA.

Summary

The following is a comparison of the projected Fiscal Year 2021 revenues produced by applying the projected billing determinants to the existing rates and the proposed rates for each classification, plus an allocation of other revenues:

Customer Class	Fiscal Year 2021		
	Total Existing	Proposed	Rate
	Revenue	Revenue	Adjustment
	(\$000)	(\$000)	(%) [1]
Residential	\$35,726	\$35,726	0.0%
Commercial	16,310	15,997	-2.2%
Commercial Demand	6,182	6,065	-2.2%
Lighting	713	743	5.0%
Total System	\$58,932	\$58,532	-0.8%

[1] Percent of existing base rates and PCA revenues.

CITY OF LAKE WORTH BEACH, FLORIDA
Electric Cost of Service Study

Table No. 6-1
Page 1 of 2

Summary of Existing and Proposed Rates and Charges

Ln No	Rate Description (a)	Unit (b)	Existing Rates Effective October 1, 2019 (c)	Proposed Rates Effective 2021 (d)
<u>Residential Service</u>				
Schedule R-S				
1	Monthly Customer Charge	\$/Mo	\$10.53	\$10.55
<u>Energy Charges < 1,000 kWh's</u>				
2	Base	\$/kWh	\$0.05148	\$0.07114
3	Power Cost Adjustment	\$/kWh	\$0.03578	\$0.02630
<u>Energy Charges > 1,000 kWh's</u>				
4	Base	\$/kWh	\$0.07880	\$0.09114
5	Power Cost Adjustment	\$/kWh	\$0.03900	\$0.03630
6	<u>Capacity Charge All kWh's</u>	\$/kWh	\$0.01020	-
7	Minimum Bill	\$/Mo	\$31.40	\$35.00
<u>Commercial Service</u>				
Schedule C-S				
8	Monthly Customer Charge	\$/Mo	\$16.66	\$17.00
<u>Energy Charges All kWh's</u>				
9	Base	\$/kWh	\$0.07040	\$0.08600
10	Power Cost Adjustment	\$/kWh	\$0.03578	\$0.02840
11	Capacity	\$/kWh	\$0.01020	-
12	Minimum Bill	\$/Mo	\$50.00	\$100.00
<u>Commercial TOU Service</u>				
Schedule CT-S				
13	Monthly Customer Charge	\$/Mo	\$28.97	\$30.00
<u>Energy Charges All kWh's</u>				
14	Off - Peak	\$/kWh	\$0.08460	\$0.08400
15	On - Peak	\$/kWh	\$0.26510	\$0.26000
<u>Commercial Demand Service</u>				
Schedule CD-S				
16	Monthly Customer Charge	\$/Mo	\$120.00	\$130.00
<u>Energy Charges All kWh's</u>				
17	Base	\$/kWh	\$0.03550	\$0.04980
18	Power Cost Adjustment	\$/kWh	\$0.02890	\$0.02840
19	Capacity	\$/kWh	\$0.01020	-
20	Demand Charge	\$/kW	\$14.48	\$12.00
21	Minimum Bill	\$/Mo	\$140.00	\$250.00

CITY OF LAKE WORTH BEACH, FLORIDA
Electric Cost of Service Study

Table No. 6-1
Page 2 of 2

Summary of Existing and Proposed Rates and Charges

Ln No	Rate Description (a)	Unit (b)	Existing Rates Effective October 1, 2019 (c)	Proposed Rates Effective 2021 (d)
Commercial Demand TOU Service				
Schedule CDT-S				
22	Monthly Customer Charge	\$/Mo	\$130.32	\$140.00
Energy Charges All kWh's				
23	Off - Peak	\$/kWh	\$0.06270	\$0.06200
24	On - Peak	\$/kWh	\$0.24320	\$0.24000
25	Demand Charge	\$/kW	\$7.39	\$7.00
Private Area Lighting				
Schedule L-P				
26	175 W Mercury Vapor	\$/Mo	\$11.63	\$12.21
27	400 W Mercury Vapor	\$/Mo	\$18.24	\$19.15
28	1,000 W Mercury Vapor	\$/Mo	\$35.89	\$37.68
29	100 W Sodium Vapor	\$/Mo	\$9.46	\$9.93
30	250 W Sodium Vapor	\$/Mo	\$13.58	\$14.26
31	360 W Sodium Vapor	\$/Mo	\$16.24	\$17.05
32	400 W Sodium Vapor	\$/Mo	\$16.33	\$17.15
33	Wood Pole and Span	\$/Mo	\$2.55	\$10.00
34	Concrete Pole and Span	\$/Mo	\$3.82	\$15.00
35	Underground Conductors up to 150 ft	\$/Mo	\$1.27	\$1.33
36	Underground Conductors 150-300 ft	\$/Mo	\$2.55	\$2.68
Street Lighting				
Schedule L-S				
37	100 W Sodium Vapor	\$/Mo	\$7.48	\$7.85
38	150 W Sodium Vapor	\$/Mo	\$8.89	\$9.33
39	250 W Sodium Vapor	\$/Mo	\$11.68	\$12.26
40	360 W Sodium Vapor	\$/Mo	\$14.47	\$15.19
41	400 W Sodium Vapor	\$/Mo	\$16.28	\$17.09
42	Wood Pole and Span	\$/Mo	\$2.55	\$10.00
43	Concrete Pole and Span	\$/Mo	\$3.82	\$15.00
44	Underground Conductors up to 150 ft	\$/Mo	\$1.27	\$1.33
45	Underground Conductors 150-300 ft	\$/Mo	\$2.55	\$2.68

CITY OF LAKE WORTH BEACH, FLORIDA
Electric Cost of Service Study

**Projected Revenues at
PROPOSED RATES**
Fiscal Year Ending September 30, 2021

Ln. No.	Customer Class Description	Proposed Rate	Billing Determinants	Base Rate Revenue	Power Cost Adjustment	Total Revenue
	(a)	(b)	(c)	(d)	(e)	(f)
Residential Regular						
1	Customer Charge	\$ 10.55	285,277	\$ 3,009,675	\$ -	\$ 3,009,675
2	Energy Charge < 1,000 kWhs	\$ 0.07114	209,333,621	14,891,994	-	14,891,994
3	Energy Charge > 1,000 kWhs	\$ 0.09114	55,981,488	5,102,153	-	5,102,153
4	Power Cost Adjustment < 1,000 kWhs	\$ 0.02630	209,333,621	-	5,505,474	5,505,474
5	Power Cost Adjustment > 1,000 kWhs	\$ 0.03630	55,981,488	-	2,032,128	2,032,128
6	Capacity Charge	\$ -	265,315,109	-	-	-
7	<i>Subtotal Residential Regular</i>			\$ 23,003,822	\$ 7,537,602	\$ 30,541,424
Residential Net Metering						
8	Customer Charge	\$ 10.55	1,238	\$ 13,063	\$ -	\$ 13,063
9	Energy Charge < 1,000 kWhs	\$ 0.07114	776,220	55,220	-	55,220
10	Energy Charge > 1,000 kWhs	\$ 0.09114	207,582	18,919	-	18,919
11	Power Cost Adjustment < 1,000 kWhs	\$ 0.02630	776,220	-	20,415	20,415
12	Power Cost Adjustment > 1,000 kWhs	\$ 0.03630	207,582	-	7,535	7,535
13	Capacity Charge	\$ -	983,803	-	-	-
14	<i>Subtotal Residential Net Metering</i>			\$ 87,202	\$ 27,950	\$ 115,152
15	Total Residential		<u>266,298,911</u>	<u>\$ 23,091,024</u>	<u>\$ 7,565,552</u>	<u>\$ 30,656,576</u>
Commercial Regular						
16	Customer Charge	\$ 17.00	37,612	\$ 639,406	\$ -	\$ 639,406
17	Energy Charge	\$ 0.08600	116,052,592	9,980,523	-	9,980,523
18	Capacity Charge	\$ -	116,052,592	-	-	-
19	Power Cost Adjustment	\$ 0.02840	116,052,592	-	3,295,894	3,295,894
20	<i>Subtotal Commercial Regular</i>			\$ 10,619,929	\$ 3,295,894	\$ 13,915,823
Commercial Net Metering						
21	Customer Charge	\$ 17.00	106	\$ 1,794	\$ -	\$ 1,794
22	Energy Charge	\$ 0.08600	479,846	41,267	-	41,267
23	Capacity Charge	\$ -	479,846	-	-	-
24	Power Cost Adjustment	\$ 0.02840	479,846	-	13,628	13,628
25	<i>Subtotal Commercial Net Metering</i>			\$ 43,061	\$ 13,628	\$ 56,688
26	Total Commercial		<u>116,532,438</u>	<u>\$ 10,662,990</u>	<u>\$ 3,309,521</u>	<u>\$ 13,972,511</u>

CITY OF LAKE WORTH BEACH, FLORIDA
Electric Cost of Service Study
Projected Revenues at
PROPOSED RATES
Fiscal Year Ending September 30, 2021

Ln No.	Customer Class Description (a)	Proposed Rate (b)	Billing Determinants (c)	Base Rate Revenue (d)	Power Cost Adjustment (e)	Total Revenue (f)
Commercial Service Demand						
27	Customer Charge	\$ 130.00	1,025	\$ 133,263	\$ -	\$ 133,263
28	Energy Charge	\$ 0.04980	49,532,241	2,466,706	-	2,466,706
29	Capacity Charge	\$ -	49,532,241	-	-	-
30	Power Cost Adjustment	\$ 0.02840	49,532,241	-	1,406,716	1,406,716
31	Demand Charge	\$ 12.00	104,998	1,259,981	-	1,259,981
32	Total Commercial Service Demand			\$ 3,859,949	\$ 1,406,716	\$ 5,266,665
33	Total Private Area Lighting		1,260,220	\$ 262,500		\$ 262,500
34	Total Street Lights		2,567,108	\$ 372,750		\$ 372,750
35	TOTAL RATE REVENUES			\$ 38,249,213	\$ 12,281,789	\$ 50,531,002
36	OTHER REVENUES					7,702,220
37	TOTAL REVENUES					\$ 58,233,222

General

This section provides a summary of the billing effects of the proposed rates for major rate classifications. Specifically, the tables in this section provide for two types of billing comparisons for each major rate classification at various levels of usage which include (i) monthly bills calculated under the City's proposed rates compared with bills calculated under its existing rates, and (ii) monthly bills calculated under the City's existing and proposed rates compared with those calculated under the rates of selected utilities for the billing month of January 2021.

Existing and Proposed Rates

Table No. 7-1 provides a comparison of monthly bills calculated under the proposed rates and the existing rates over a wide range of usage levels.

Comparisons with Other Utilities

Table No. 7-2 show the City's existing and proposed rates along with those of other electric utilities. As can be seen from these tables, the City's rates are comparable to other utilities.

CITY OF LAKE WORTH BEACH, FLORIDA
Electric Cost of Service Study

Comparison of Existing and Proposed Residential Service Rates [1]

			Residential Service	
			Existing	Proposed
Customer Charge		(\$)	\$10.53	\$10.55
Energy Charge	First 1,000 kWh	(\$/kWh)	\$0.05148	\$0.07114
Energy Charge	Additional kWh	(\$/kWh)	\$0.07880	\$0.09114
PCA [2]	First 1,000 kWh	(\$)	\$0.03578	\$0.02630
PCA [2]	Additional kWh	(\$/kWh)	\$0.03900	\$0.03630
Capacity Charge	All kWh	(\$/kWh)	\$0.01020	-

Usage (kWh)	Existing		Proposed		Difference		
	Amount (\$)	Unit Cost (Cents/kWh)	Amount (\$)	Unit Cost (Cents/kWh)	Amount (\$)	Unit Cost (Cents/kWh)	Percent (%)
500	59.26	11.852	59.27	11.854	0.01	0.002	0.02%
600	69.01	11.501	69.01	11.502	0.01	0.001	0.01%
700	78.75	11.250	78.76	11.251	0.01	0.001	0.01%
800	88.50	11.062	88.50	11.063	0.00	0.000	0.00%
900	98.24	10.916	98.25	10.916	0.00	0.000	0.00%
1,000	107.99	10.799	107.99	10.799	0.00	0.000	0.00%
1,100	120.79	10.981	120.73	10.976	(0.06)	(0.005)	-0.05%
1,200	133.59	11.133	133.48	11.123	(0.11)	(0.009)	-0.08%
1,300	146.39	11.261	146.22	11.248	(0.17)	(0.013)	-0.11%
1,400	159.19	11.371	158.97	11.355	(0.22)	(0.016)	-0.14%
1,500	171.99	11.466	171.71	11.447	(0.28)	(0.019)	-0.16%
2,000	235.99	11.800	235.43	11.772	(0.56)	(0.028)	-0.24%
2,500	299.99	12.000	299.15	11.966	(0.84)	(0.034)	-0.28%
3,000	363.99	12.133	362.87	12.096	(1.12)	(0.037)	-0.31%
4,000	491.99	12.300	490.31	12.258	(1.68)	(0.042)	-0.34%
5,000	619.99	12.400	617.75	12.355	(2.24)	(0.045)	-0.36%

[1] Amounts shown reflect single phase, inside the City service.

[2] Proposed Power Cost Adjustment is for the fiscal year 2021.

CITY OF LAKE WORTH BEACH, FLORIDA
Electric Cost of Service Study

Comparison of Existing and Proposed General Service Non-Demand Rates [1]

General Service Non-Demand							
		Existing		Proposed			
Customer Charge		(\$)		\$16.66	\$17.00		
Energy Charge All kWh		(\$/kWh)		\$0.07040	\$0.08600		
Power Cost Adjustment [2]		(\$/kWh)		\$0.03578	\$0.02840		
Capacity Charge		(\$/kWh)		\$0.01020	-		

Usage (kWh)	Existing		Proposed		Difference		
	Amount (\$)	Unit Cost (Cents/kWh)	Amount (\$)	Unit Cost (Cents/kWh)	Amount (\$)	Unit Cost (Cents/kWh)	Percent (%)
1,000	133.04	13.304	131.40	13.140	(1.64)	(0.164)	-1.23%
1,250	162.14	12.971	160.00	12.800	(2.13)	(0.171)	-1.32%
1,500	191.23	12.749	188.60	12.573	(2.63)	(0.175)	-1.38%
1,750	220.33	12.590	217.20	12.411	(3.12)	(0.179)	-1.42%
1,900	237.78	12.515	234.36	12.335	(3.42)	(0.180)	-1.44%
2,000	249.42	12.471	245.80	12.290	(3.62)	(0.181)	-1.45%
3,000	365.80	12.193	360.20	12.007	(5.60)	(0.187)	-1.53%
4,000	482.18	12.055	474.60	11.865	(7.58)	(0.190)	-1.57%
5,000	598.56	11.971	589.00	11.780	(9.56)	(0.191)	-1.60%
6,000	714.94	11.916	703.40	11.723	(11.54)	(0.192)	-1.61%
7,000	831.32	11.876	817.80	11.683	(13.52)	(0.193)	-1.63%
8,000	947.70	11.846	932.20	11.653	(15.50)	(0.194)	-1.64%
9,000	1,064.08	11.823	1,046.60	11.629	(17.48)	(0.194)	-1.64%
10,000	1,180.46	11.805	1,161.00	11.610	(19.46)	(0.195)	-1.65%

[1] Amounts shown reflect single phase, inside the City service.

[2] Proposed Power Cost Adjustment is for the fiscal year 2021.

CITY OF LAKE WORTH BEACH, FLORIDA
Electric Cost of Service Study

Comparison of Existing and Proposed Rates for General Service Demand [1]

			General Service Demand							
					Existing			Proposed		
			Customer Charge	(\$)	\$120.00			\$130.00		
			Demand Charge	(\$/kW)	\$14.48			\$12.00		
			Energy Charge	All kWh (\$/kWh)	\$0.03550			\$0.04980		
			Power Cost Adjustment [2]	(\$/kWh)	\$0.02890			\$0.02840		
			Capacity Charge	(\$/kWh)	\$0.01020			-		
Demand (kW)	Hours	Usage (kWh)	Existing		Proposed		Difference			
			Amount (\$)	Unit Cost (Cents/kWh)	Amount (\$)	Unit Cost (Cents/kWh)	Amount (\$)	Unit Cost (Cents/kWh)	Percent (%)	
30	200	6,000	1,002.00	16.700	959.20	15.987	(42.80)	(0.713)	-4.27%	
	300	9,000	1,225.80	13.620	1,193.80	13.264	(32.00)	(0.356)	-2.61%	
	400	12,000	1,449.60	12.080	1,428.40	11.903	(21.20)	(0.177)	-1.46%	
	500	15,000	1,673.40	11.156	1,663.00	11.087	(10.40)	(0.069)	-0.62%	
	600	18,000	1,897.20	10.540	1,897.60	10.542	0.40	0.002	0.02%	
150	200	30,000	4,530.00	15.100	4,276.00	14.253	(254.00)	(0.847)	-5.61%	
	300	45,000	5,649.00	12.553	5,449.00	12.109	(200.00)	(0.444)	-3.54%	
	400	60,000	6,768.00	11.280	6,622.00	11.037	(146.00)	(0.243)	-2.16%	
	500	75,000	7,887.00	10.516	7,795.00	10.393	(92.00)	(0.123)	-1.17%	
	600	90,000	9,006.00	10.007	8,968.00	9.964	(38.00)	(0.042)	-0.42%	
500	200	100,000	14,820.00	14.820	13,950.00	13.950	(870.00)	(0.870)	-5.87%	
	300	150,000	18,550.00	12.367	17,860.00	11.907	(690.00)	(0.460)	-3.72%	
	400	200,000	22,280.00	11.140	21,770.00	10.885	(510.00)	(0.255)	-2.29%	
	500	250,000	26,010.00	10.404	25,680.00	10.272	(330.00)	(0.132)	-1.27%	
	600	300,000	29,740.00	9.913	29,590.00	9.863	(150.00)	(0.050)	-0.50%	

[1] Amounts shown reflect inside the City service, and exclude any applicable primary service discount or power factor correction.

[2] Proposed Power Cost Adjustment is for the fiscal year 2021.

CITY OF LAKE WORTH BEACH, FLORIDA
Electric Cost of Service Study

Inter-Utility Comparison of Typical Monthly Electric Bills ^[1]

Ln. No.	Utility	Fuel Adj. \$/1000 kWh	Residential Class							
			250 kWh	500 kWh	750 kWh	1,000 kWh	1,200 kWh	2,000 kWh	2,500 kWh	3,000 kWh
1	City of Lake Worth Beach (Existing)	35.78	34.90	59.26	83.63	107.99	133.59	235.99	299.99	363.99
2	City of Lake Worth Beach (Proposed)	26.30	34.91	59.27	83.63	107.99	133.48	235.43	299.15	362.87
<u>Other Florida Municipalities:</u>										
3	City of Alachua	10.75	35.18	61.22	87.25	113.29	136.16	227.64	284.82	341.99
4	City of Bushnell	19.00	37.41	64.83	92.24	119.65	141.58	229.30	284.13	338.95
5	For: Pierce Utilities Authority	(8.00)	31.07	56.12	81.18	108.84	130.96	219.48	274.80	330.12
6	Gainesville Regional Utilities	30.00	41.13	67.25	93.38	123.13	148.87	251.83	316.18	380.53
7	Jacksonville Electric Authority	32.50	31.25	57.00	82.75	108.50	129.10	211.50	263.00	317.00
8	Kissimmee Utilities Authority	(38.28)	31.38	52.58	73.79	94.99	114.48	192.46	241.20	289.93
9	City of Lakeland	35.00	33.22	55.43	77.65	99.87	119.08	198.98	250.07	301.15
10	City of Leesburg	2.50	35.29	58.39	81.48	104.58	127.59	219.63	277.15	334.67
11	City of New Smyrna Beach	15.75	28.70	51.75	74.80	97.85	116.29	190.05	236.15	282.25
12	City of Newberry	5.00	35.00	61.50	88.00	114.50	144.00	228.00	280.50	333.00
13	City of Ocala	14.00	42.91	68.82	94.73	120.64	141.37	224.28	276.10	327.92
14	Orlando Utilities Commission	32.02	36.75	61.00	85.25	109.50	132.90	226.50	285.00	343.50
15	City of Tallahassee	28.08	33.66	59.27	84.89	110.50	130.99	212.96	264.19	315.42
<u>Florida Cooperatives</u>										
16	Sumter Electric Cooperative	(20.70)	53.48	75.95	98.43	120.90	142.88	230.80	285.75	340.70
17	Central Florida Cooperative	(5.50)	52.58	75.70	98.83	121.95	140.45	214.45	260.70	306.95
18	Clay Electric Cooperative	11.40	43.98	64.95	85.93	106.90	127.44	209.60	260.95	312.30
<u>Investor-Owned Utilities:</u> ^[2]										
19	Florida Power and Light	21.23	32.22	55.60	78.98	102.36	125.44	217.75	275.44	333.13
20	Gulf Power Company	30.70	51.58	82.80	114.03	145.25	170.23	270.15	332.60	395.05
21	Duke Energy	28.11	41.78	71.48	101.17	130.87	160.38	278.43	352.21	425.99
22	Tampa Electric Company	28.56	39.21	62.46	85.71	108.97	131.81	223.18	280.29	337.40

[1] Amounts shown are based on the rates for single phase service and reflect when applicable, inside city service. In addition, amounts include January 2021 fuel adjustments and franchise fees but do not include taxes.

[2] Amounts shown include the energy conservation, capacity, environmental and storm cost recovery charges where appropriate, as filed with the the Florida Public Service Commission (FPSC). Franchise fees of 6 percent are included for each of the IOU's listed.

CITY OF LAKE WORTH BEACH, FLORIDA
Electric Cost of Service Study

Inter-Utility Comparison of Typical Monthly Electric Bills^[1]

Ln. No.	Utility	Fuel Adj. \$/1000 kWh	General Service Non-Demand Class							
			250 kWh	500 kWh	750 kWh	1,000 kWh	1,500 kWh	2,000 kWh	2,500 kWh	3,000 kWh
1	City of Lake Worth Beach (Existing)	35.78	45.76	74.85	103.95	133.04	191.23	249.42	307.61	365.80
2	City of Lake Worth Beach (Proposed)	28.40	45.60	74.20	102.80	131.40	188.60	245.80	303.00	360.20
<u>Other Florida Municipalities:</u>										
3	City of Alachua	10.75	38.99	66.31	93.62	120.93	175.56	230.18	284.81	339.43
4	City of Bushnell	19.00	40.72	71.43	102.15	132.86	194.29	255.72	317.15	378.58
5	Fort Pierce Utilities Authority	(8.00)	33.61	61.37	89.14	116.90	172.43	227.96	283.49	339.02
6	Gainesville Regional Utilities	30.00	63.10	95.20	127.30	159.40	223.60	304.05	384.50	464.95
7	Jacksonville Electric Authority	32.50	33.65	58.05	82.44	106.84	155.64	204.43	253.23	302.02
8	Kissimmee	(38.28)	35.08	59.09	83.09	107.09	155.10	203.10	251.11	299.11
9	City of Lakeland	35.00	35.01	57.01	79.02	101.03	145.04	189.05	233.06	277.08
10	City of New Smyrna Beach	15.75	28.61	51.18	73.74	96.30	141.43	186.55	231.68	276.80
11	City of Ocala	14.00	46.19	72.39	98.58	124.77	177.16	229.54	281.93	334.31
12	Orlando Utilities Commission	32.02	40.30	65.84	91.39	116.93	168.02	219.11	270.20	321.29
13	City of Tallahassee	28.08	32.66	54.39	76.12	97.85	141.31	184.77	228.23	271.69
<u>Florida Cooperatives</u>										
14	Sumter Electric Cooperative	(20.70)	56.80	80.42	104.05	127.67	174.92	222.17	269.42	316.67
15	Clay Electric Cooperative	17.40	47.68	72.35	97.03	121.70	171.05	220.40	269.75	319.10
<u>Investor-Owned Utilities:</u> ^[2]										
16	Florida Power and Light	24.49	35.11	58.98	82.84	106.71	154.44	202.17	249.91	297.64
17	Gulf Power Company	30.70	58.79	90.81	122.83	154.86	218.90	282.95	346.99	411.04
18	Duke Energy	30.94	47.66	79.32	110.98	142.64	205.97	269.29	332.62	395.94
19	Tampa Electric Company	31.67	43.91	68.68	93.44	118.21	167.75	217.28	266.81	316.35

[1] Amounts shown are based on the rates for single phase service and reflect when applicable, inside city service. In addition, amounts include January 2021 fuel adjustments and franchise fees but do not include taxes.

[2] Amounts shown include the energy conservation, capacity, environmental and storm cost recovery charges where appropriate, as filed with the the Florida Public Service Commission (FPSC). Franchise fees of 6 percent are included for each of the IOU's listed.

CITY OF LAKE WORTH BEACH, FLORIDA
Electric Cost of Service Study

Inter-Utility Comparison of Typical Monthly Electric Bills [1]

		General Service Demand Class								
Ln. No.	Utility	30 kW			150 kW			500 kW		
		6,000 kWh	12,000 kWh	18,000 kWh	30,000 kWh	60,000 kWh	90,000 kWh	100,000 kWh	200,000 kWh	300,000 kWh
1	City of Lake Worth Beach (Existing)	1,002	1,450	1,897	4,530	6,768	9,006	14,820	22,280	29,740
2	City of Lake Worth Beach (Proposed)	949	1,418	1,888	4,266	6,612	8,958	13,940	21,760	29,580
<u>Other Florida Municipalities:</u>										
3	Fort Pierce Utilities Authority	719	1,196	1,673	3,439	5,822	8,206	11,370	19,316	27,262
4	Gainesville Regional Utilities	976	1,548	2,120	4,482	7,341	10,200	14,705	24,235	33,765
5	Jacksonville Electric Authority	737	1,137	1,537	3,345	5,345	7,345	10,952	17,619	24,286
6	Kissimmee	701	1,080	1,459	3,284	5,179	7,074	11,618	17,099	22,580
7	City of Lakeland	637	980	1,324	3,017	4,734	6,452	9,958	15,683	21,409
8	City of New Smyrna Beach	721	1,205	1,690	3,469	5,891	8,314	10,859	18,434	26,009
9	City of Ocala	700	1,140	1,579	3,301	5,498	7,695	11,522	18,634	25,746
10	Orlando Utilities Commission	683	1,029	1,374	3,265	4,993	6,720	10,796	16,554	22,312
11	City of Tallahassee	804	1,115	1,365	3,720	5,275	6,524	12,162	17,284	21,417
<u>Florida Cooperatives</u>										
12	Sumter Electric Cooperative	680	1,099	1,518	3,069	5,163	7,257	10,038	17,018	23,998
<u>Investor-Owned Utilities:</u> ^[2]										
13	Florida Power and Light	693	998	1,304	3,352	4,879	6,407	11,926	16,524	21,121
14	Gulf Power Company	767	1,261	1,754	3,638	6,105	8,573	14,461	20,620	26,779
15	Duke Energy	784	1,182	1,579	3,858	5,846	7,833	12,789	19,382	25,975
16	Tampa Electric Company	741	1,060	1,379	3,576	5,173	6,770	11,847	17,169	22,491

[1] Amounts shown are based on the rates for single phase service and reflect when applicable, inside city service. In addition, amounts include January 2021 fuel adjustments and franchise fees but do not include taxes.

[2] Amounts shown include the energy conservation, capacity, environmental and storm cost recovery charges where appropriate, as filed with the the Florida Public Service Commission (FPSC). Franchise fees of 6 percent are included for each of the IOU's listed.

GLOSSARY [1]

Administrative and general expenses: Expenses of an electric utility relating to the overall directions of its corporate offices and administrative affairs, as contrasted with expenses incurred for specialized functions. Examples include office salaries, office supplies, advertising, and other general expenses.

AMI: Advanced Metering Infrastructure is a term denoting electricity meters that measure and record usage data at a minimum, in hourly intervals, and provide usage data to both consumers and energy companies at least once daily.

Base rate: A fixed kilowatt-hour charge for electricity consumed that is independent of other charges and/or adjustments.

Bulk power transactions: The wholesale sale, purchase, and interchange of electricity among electric utilities. Bulk power transactions are used by electric utilities for many different aspects of electric utility operations, from maintaining load to reducing costs.

Capacity (purchased): The amount of energy and capacity available for purchase from outside the system.

Capacity charge: An element in a two-part pricing method used in capacity transactions (energy charge is the other element). The capacity charge, sometimes called Demand Charge, is assessed on the amount of capacity being purchased.

Capacity factor: The ratio of the electrical energy produced by a generating unit for the period of time considered to the electrical energy that could have been produced at continuous full power operation during the same period.

Capital cost: The cost of field development and plant construction and the equipment required for industry operations.

Class rate schedule: An electric rate schedule applicable to one or more specified classes of service, groups of businesses, or customer uses.

Classes of service: Customers grouped by similar characteristics in order to be identified for the purpose of setting a common rate for electric service. Usually classified into groups identified as residential, commercial, industrial, and other.

Coincidental demand: The sum of two or more demands that occur in the same time interval.

Coincidental peak load: The sum of two or more peak loads that occur in the same time interval.

Consumer charge: An amount charged periodically to a consumer for such utility costs as billing and meter reading, without regard to demand or energy consumption.

Cost of service: A ratemaking concept used for the design and development of rate schedules to ensure that the filed rate schedules recover only the cost of providing the electric service at issue. This concept attempts to correlate the utility's costs and revenue with the service provided to each of the various customer classes.

Demand charge: That portion of the consumer's bill for electric service based on the consumer's maximum electric capacity usage and calculated based on the billing demand charges under the applicable rate schedule.

Distribution system: The portion of the transmission and facilities of an electric system that is dedicated to delivering electric energy to an end-user.

Electric rate: The price set for a specified amount and type of electricity by class of service in an electric rate schedule or sales contract.

Electric rate schedule: A statement of the electric rate and the terms and conditions governing its application, including attendant contract terms and conditions that have been accepted by a regulatory body with appropriate oversight authority.

Electricity sales: The amount of kilowatthours sold in a given period of time; usually grouped by classes of service, such as residential, commercial, industrial, and other. "Other" sales include sales for public street and highway lighting and other sales to public authorities, sales to railroads and railways, and interdepartmental sales.

Energy charge: That portion of the charge for electric service based upon the electric energy (kWh) consumed or billed.

Federal Energy Regulatory Commission (FERC): The Federal agency with jurisdiction over interstate electricity sales, wholesale electric rates, hydroelectric licensing, natural gas pricing, oil pipeline rates, and gas pipeline certification. FERC is an independent regulatory agency within the Department of Energy and is the successor to the Federal Power Commission.

FERC guidelines: A compilation of the Federal Energy Regulatory Commission's enabling statutes; procedural and program regulations; and orders, opinions, and decisions.

Fixed cost (expense): An expenditure or expense that does not vary with volume level of activity.

Fixed operating costs: Costs other than those associated with capital investment that do not vary with the operation, such as maintenance and payroll.

Investor-owned utility (IOU): A privately-owned electric utility whose stock is publicly traded. It is rate regulated and authorized to achieve an allowed rate of return.

Kilowatt (kW): One thousand watts.

Kilowatthour (kWh): A measure of electricity defined as a unit of work or energy, measured as 1 kilowatt (1,000watts) of power expended for 1 hour. One kWh is equivalent to 3,412 Btu.

Load diversity: The difference between the peak of coincident and noncoincident demands of two or more individual loads.

Load factor: The ratio of the average load to peak load during a specified time interval.

Megawatt (MW): One million watts of electricity.

Megawatthour (MWh): One thousand kilowatt-hours or 1million watt-hours.

Noncoincident demand: Sum of two or more demands on individual systems that do not occur in the same demand interval.

Noncoincidental peak load: The sum of two or more peak loads on individual systems that do not occur in the same time interval. Meaningful only when considering loads within a limited period of time, such as a day, week, month, a heating or cooling season, and usually for not more than 1 year.

O&M: Operation and Maintenance.

Peak demand: The maximum load during a specified period of time.

Purchased power: Power purchased or available for purchase from a source outside the system.

Rate schedule (electric): The rates, charges, and provisions under which service is supplied to the designated class of customers.

Ratemaking authority: A utility commission's legal authority to fix, modify, approve, or disapprove rates as determined by the powers given the commission by a State or Federal legislature.

Rates: The authorized charges per unit or level of consumption for a specified time period for any of the classes of utility services provided to a customer.

Time-of-day rate: The rate charged by an electric utility for service to various classes of customers. The rate reflects the different costs of providing the service at different times of the day.

Watt (W): The unit of electrical power equal to one ampere under a pressure of one volt. A Watt is equal to 1/746 horse power.

[1] From U. S. Energy Information Administration Glossary
<https://www.eia.gov/tools/glossary/index.php?id=xyz>.

CITY OF LAKE WORTH BEACH, FLORIDA
Electric Cost of Service Study

Calculation of Fixed Costs per Customer [1]

Ln. No.	Description (a)	Residential (b)	Commercial (c)
1	Distribution Fixed Costs [2]	\$8,644,650	\$3,569,729
2	Customer Fixed Costs [2]	\$3,386,718	\$579,587
3	Total	\$12,031,368	\$4,149,316
4	Number of Customers [3]	23,758	3,128
5	Fixed Cost/Customer/Year	\$506.41	\$1,326.51
6	Fixed Cost/Customer/Month	\$42.20	\$110.54
7	Purchased Capacity [2]	\$18,923,262	\$8,781,229
8	Total Including Purchased Capacity	\$30,954,630	\$12,930,545
9	Fixed Cost/Customer/Month	\$108.58	\$344.48
10	Current Minimum Monthly Bill	\$31.40	\$50.00
11	Percent of Line 6	74%	45%
12	Percent of Line 9	29%	15%
13	Proposed Minimum Monthly Bill	\$35.00	\$100.00

[1] Based on Electric Cost of Service Study.

[2] From Table No. 5-1.

[3] From Table No. 2-1.