

Gainesville Regional Utilities

**Revenue Requirement, Cost of Service, and Rate Design
Studies for Electric, Water, Wastewater & Gas Utilities**

Item #110665

May 7, 2015

- > **Review of electric, water, wastewater and gas revenue requirement and cost of service models**
 - > **Goal for this presentation is to ensure the following:**
 - > **All revenue requirement areas are included**
 - > **Cost of service general customer profiles are properly addressed**
 - > **Specific cost of service areas are included and addressed**
 - > **Groundwork is defined for rate design for general and specifically requested areas**

Process for developing customer rates



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- > **Adopt a “Test Year”, ie. year that the rates are based on**
- > **Assemble data for test year:**
 - **Operating budgets**
 - **Capital additions**
 - **Customer statistics**
- > **Determine revenue requirement for test year**
- > **Allocate revenue requirement to customer classes, i.e. the cost of the service study**
- > **Design customer rates**

Revenue requirement

What do the components pay for?



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Revenue Requirement Component	Used for
Operating expenses	<ul style="list-style-type: none">• Operation and maintenance expenses, fuel, purchased power, purchased gas, administration and general
Depreciation	<ul style="list-style-type: none">• Plant in service replacement – historical cost
Transfer to general fund	<ul style="list-style-type: none">• Transfer to City
Return on ratebase	<ul style="list-style-type: none">• Debt service• Appreciation on plant in service replacement• Return for risk of providing service

- > **Determine costs for the test period**
- > **Summarize customer class billing and usage patterns**
- > **Forecast sales and costs for test year**
- > **Assign costs to customer classes based on their consumption profile**

Revenue requirement analysis



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Utility	Revenue at Current Rates	Cost of Service	Rate Increase Needed
Electric	\$274,479,000	\$284,593,000	3.7%
Gas	\$24,009,000	\$23,959,000	NA
Wastewater	\$35,138,000	\$36,600,000	4%
Water	\$30,000,000	\$31,300,000	4.5%

*Note: Electric only shows revenue requirement for revenues from rates, excluding Fuel Differential, Non-Fuel/PP Fixed Revenues and Rate Stabilization Transfer

Revenue requirement Electric Utility



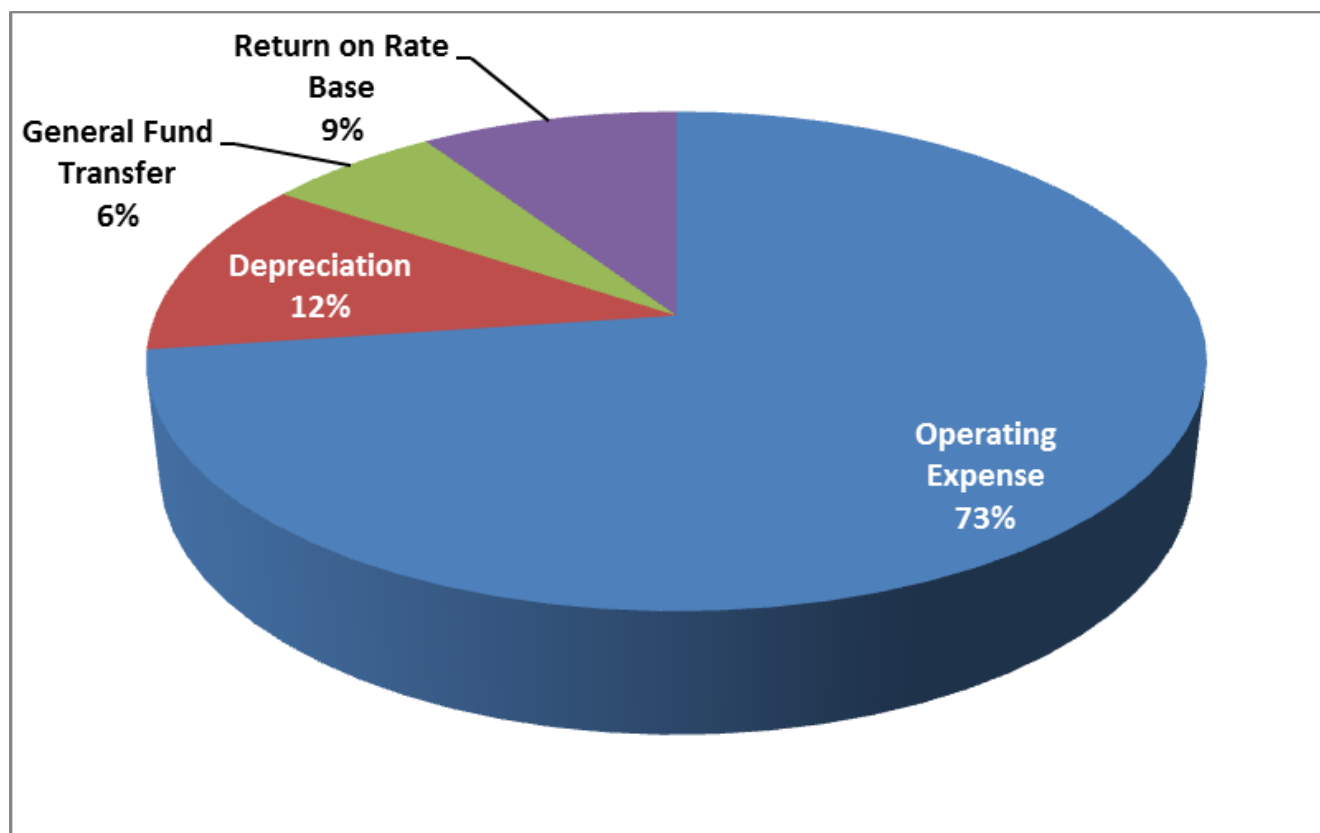
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<u>Revenues</u>		Forecasted Revenue Requirement
Revenue from Rates	\$	111,983,219
Sales for Resale - Base Rate		4,008,046
Fuel Adjustment (incl Embedded)		146,657,067
Sales for Resale - Fuel		11,830,452
Fuel Differential		1,968,184
Non-Fuel/PP Fixed Revenues		1,350,000
Transfer from Rate Stabilization		1,737,708
<i>Total Revenues</i>		<i>279,534,676</i>
<u>Expenses</u>		
Non Fuel Operation and Maintenance	\$	61,904,639
Fuel Operations and Maintenance		167,018,000
Depreciation		36,280,202
General Fund Transfer		19,799,381
Return on Rate Base		29,402,497
Less Other Revenues		(24,755,432)
<i>Total Expenses</i>		<i>289,649,287</i>
Rate Increase Required	\$	<u>10,114,611</u>

Revenue requirement Electric Utility



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*Note: Revenue Requirement Less Other Revenues (e.g., South Energy Center, Interest Income, BABs subsidy)

Cost of service Electric Utility



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Customer Class	FY 2016 Cost of Service	Forecasted		
		Revenues at Current Rates	Change Required	Percent Change Required
Residential	\$ 119,510,932	\$ 113,328,201	\$ 6,182,731	5.46%
General Non Demand	\$ 28,833,355	32,774,431	(3,941,076)	-12.02%
General Demand	\$ 85,265,645	84,895,578	370,067	0.44%
Large Power	\$ 19,613,589	20,534,810	(921,221)	-4.49%
Street Lighting	\$ 5,808,099	7,107,266	(1,299,167)	-18.28%
Alachua Wholesale	\$ 14,490,002	11,126,104	3,363,898	30.23%
Seminole Wholesale	\$ 2,100,335	313,560	1,786,775	569.84%
Winter Park Wholesale	\$ 8,971,460	4,398,834	4,572,626	103.95%
Total	\$ 284,593,417	\$ 274,478,784	\$ 10,114,633	<u>3.69%</u>

GRU's current rate for providing service to its wholesale customers is on an incremental cost approach, which contrasts with Baker Tilly's average embedded cost approach. While overall GRU must recover its average embedded cost, incremental cost ratemaking is appropriate for customers in a competitive environment. As long as the rate is greater than the customer's incremental cost, all ratepayers will benefit from bringing the incremental cost customer onto the system.

*Note: Table shown only reflects revenues from rates, excluding Fuel Differential, Non-Fuel/PP Fixed Revenues and Rate Stabilization Transfer

Cost of service Electric Utility



Candor. Insight. Results.

Customer Class	Cost of Service		Percent Change
	Change	Adjusted Change	from Current Rates
Residential	\$ 6,182,731	\$ 5,667,240	5.00%
General Non Demand	(3,941,076)	231,497	0.71%
General Demand	370,067	3,474,666	4.09%
Large Power	(921,221)	668,977	3.26%
Street Lighting	(1,299,167)	72,000	1.01%
Alachua Wholesale	3,363,898	-	0.00%
Seminole Wholesale	1,786,775	-	0.00%
Winter Park Wholesale	4,572,626	-	0.00%
Overall Change	\$ 10,114,633	\$ 10,114,380	3.68%

Rate increases/decreases are within a +/- 5% threshold

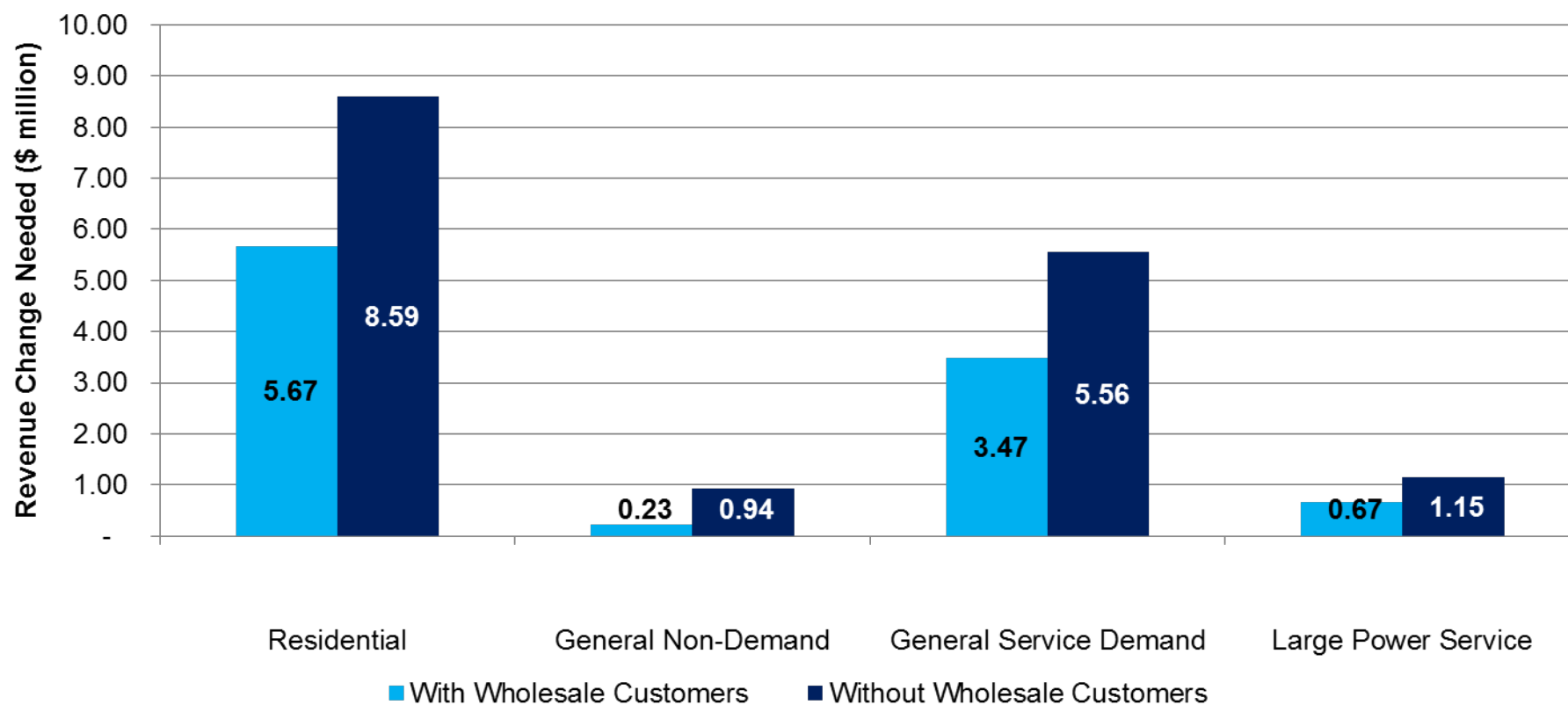
Customer	<i>Cost of Service (Embedded Cost to Serve)</i>	Forecasted Revenues at Current Rates	Incremental Cost to Serve	Additional Revenues over Incremental Costs
Alachua	\$14,490,002	\$11,126,104	\$5,865,673	\$5,260,431
Seminole	\$2,100,335	\$313,560	\$120,910	\$192,650
Winter Park	\$8,971,460	\$4,398,834	\$3,648,834	\$750,000
<u>Total</u>	<u>\$25,561,797</u>	<u>\$15,838,498</u>	<u>\$9,635,417</u>	<u>\$6,203,081</u>

Setting rates equal to incremental cost to serve would push additional costs (\$6.2 million) to other rate classes

*Note: Incremental cost to serve based on incremental fuel costs estimated by GRU

- Do wholesale customers (Alachua, Seminole, Winter Park) need a \$9.7 million rate increase over current rates?
- Average Embedded Cost = Total cost of all infrastructure and expenses divided by the energy produced
- Incremental Cost = Additional cost to produce the last unit on the margin (i.e., kWh)
- As long as a customer pays for at least its incremental cost, all ratepayers are better off

Impact of Wholesale Customers on Other Retail Customers

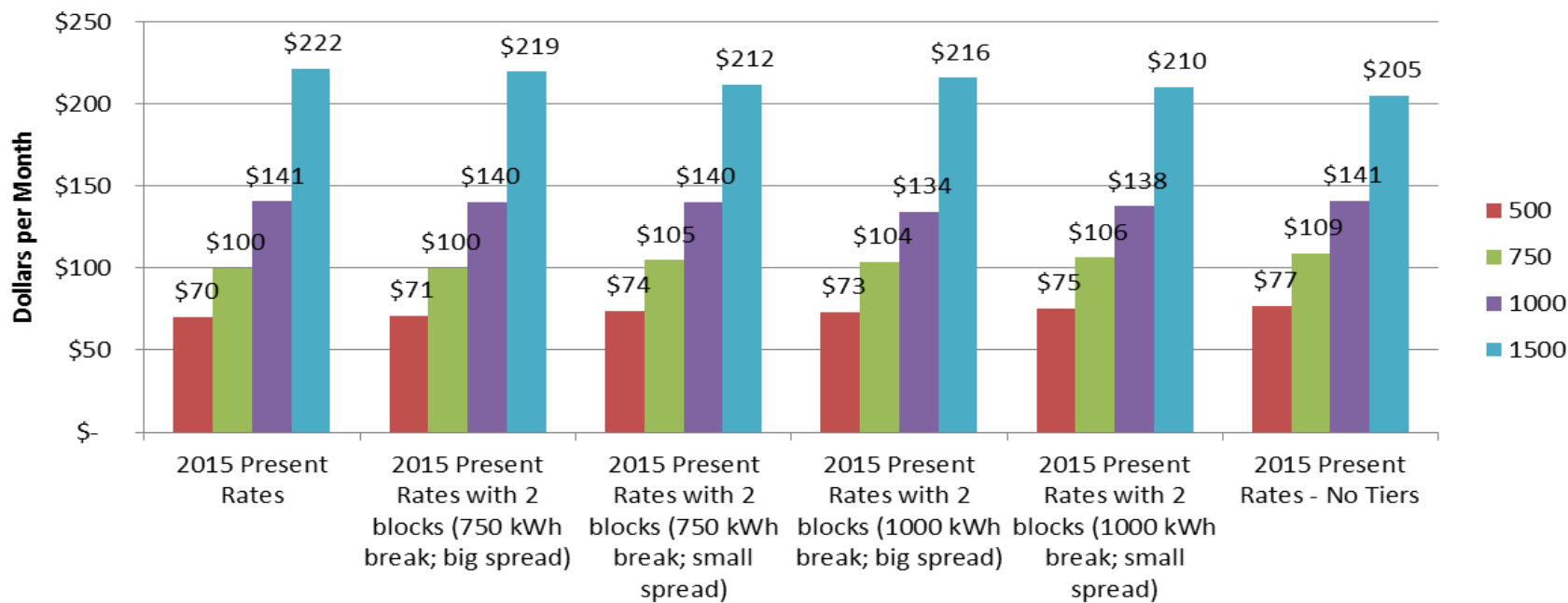


Residential Tiers – 2015 Present Rates Electric Utility



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2015 Present Rates - Residential Bill Impacts at 500, 750, 1,000, and 1,500 kWh per Month

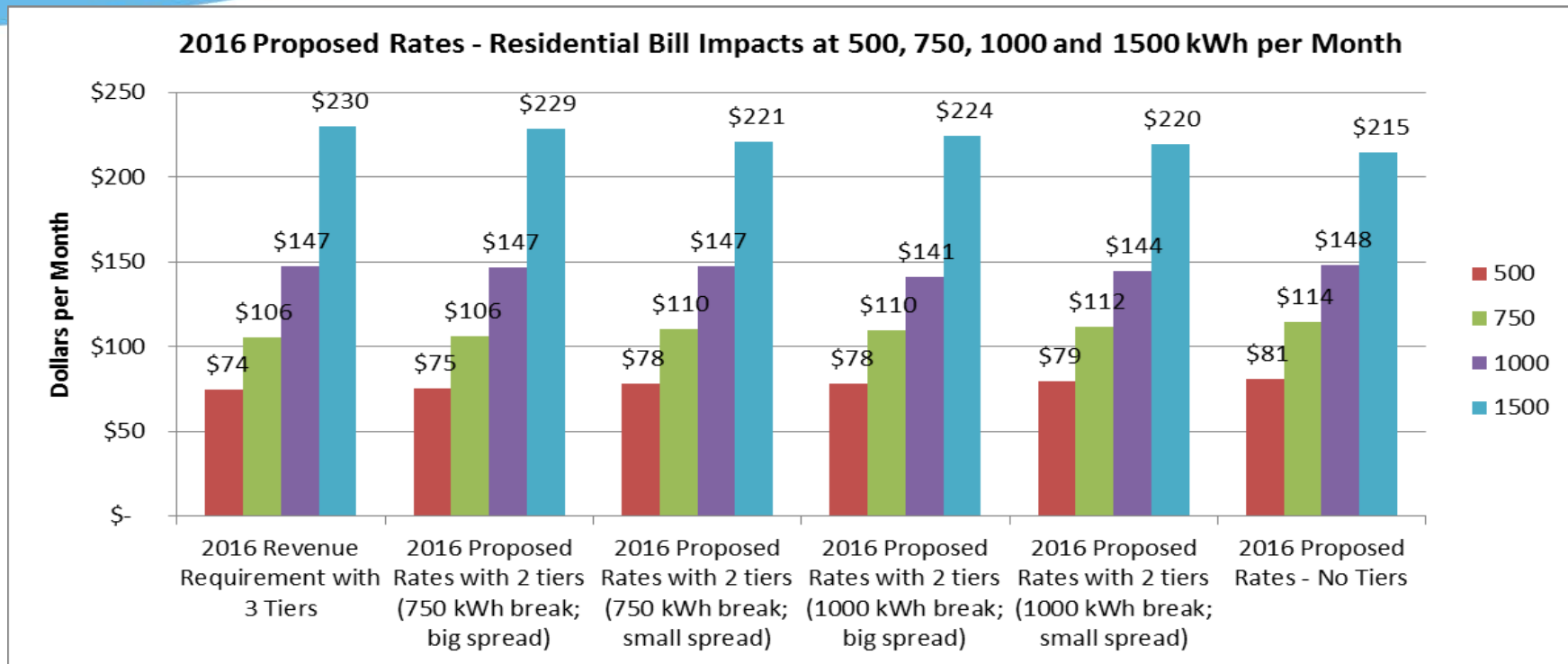


Scenario	1	2	3	4	5	6
Customer Charge	\$12.75	\$12.75	\$12.75	\$12.75	\$12.75	\$12.75
1 st Tier Rate	First 250 kWh \$0.0310	First 750 kWh \$0.0386	First 750 kWh \$0.0447	First 1000 kWh \$0.0433	First 1000 kWh \$0.0468	Uniform Rate \$0.0501
2 nd Tier Rate	Next 500 kWh \$0.0420	Over 750 kWh \$0.0810	Over 750 kWh \$0.0647	Over 1000 kWh \$0.0856	Over 1000 kWh \$0.0675	
3 rd Tier Rate	Over 750 kWh \$0.0840					
Fuel Adjustment	\$0.0780	\$0.0780	\$0.0780	\$0.0780	\$0.0780	\$0.0780

Residential Tiers – 2016 Proposed Rates Electric Utility



Candor. Insight. Results.



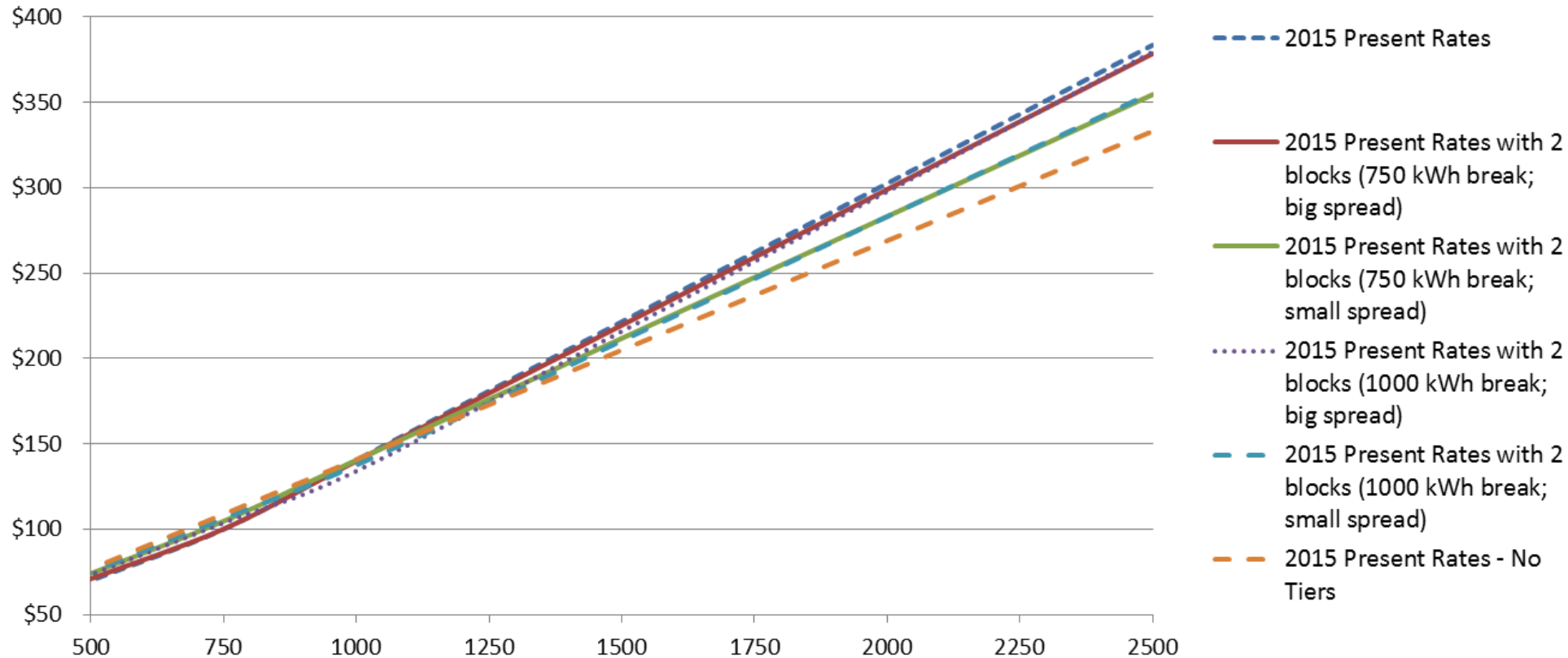
Scenario	1	2	3	4	5	6
Customer Charge	\$14.25	\$14.25	\$14.25	\$14.25	\$14.25	\$14.25
1 st Tier Rate	First 250 kWh \$0.0310	First 750 kWh \$0.0411	First 750 kWh \$0.0471	First 1000 kWh \$0.0461	First 1000 kWh \$0.0491	Uniform Rate \$0.0525
2 nd Tier Rate	Next 500 kWh \$0.0420	Over 750 kWh \$0.0827	Over 750 kWh \$0.0667	Over 1000 kWh \$0.0852	Over 1000 kWh \$0.0697	
3 rd Tier Rate	Over 750 kWh \$0.0840					
Fuel Adjustment	\$0.0810	\$0.0810	\$0.0810	\$0.0810	\$0.0810	\$0.0810

Residential Tiers – 2015 Present Rates Electric Utility



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Electric Tiered Rate Examples - Monthly Total Bill

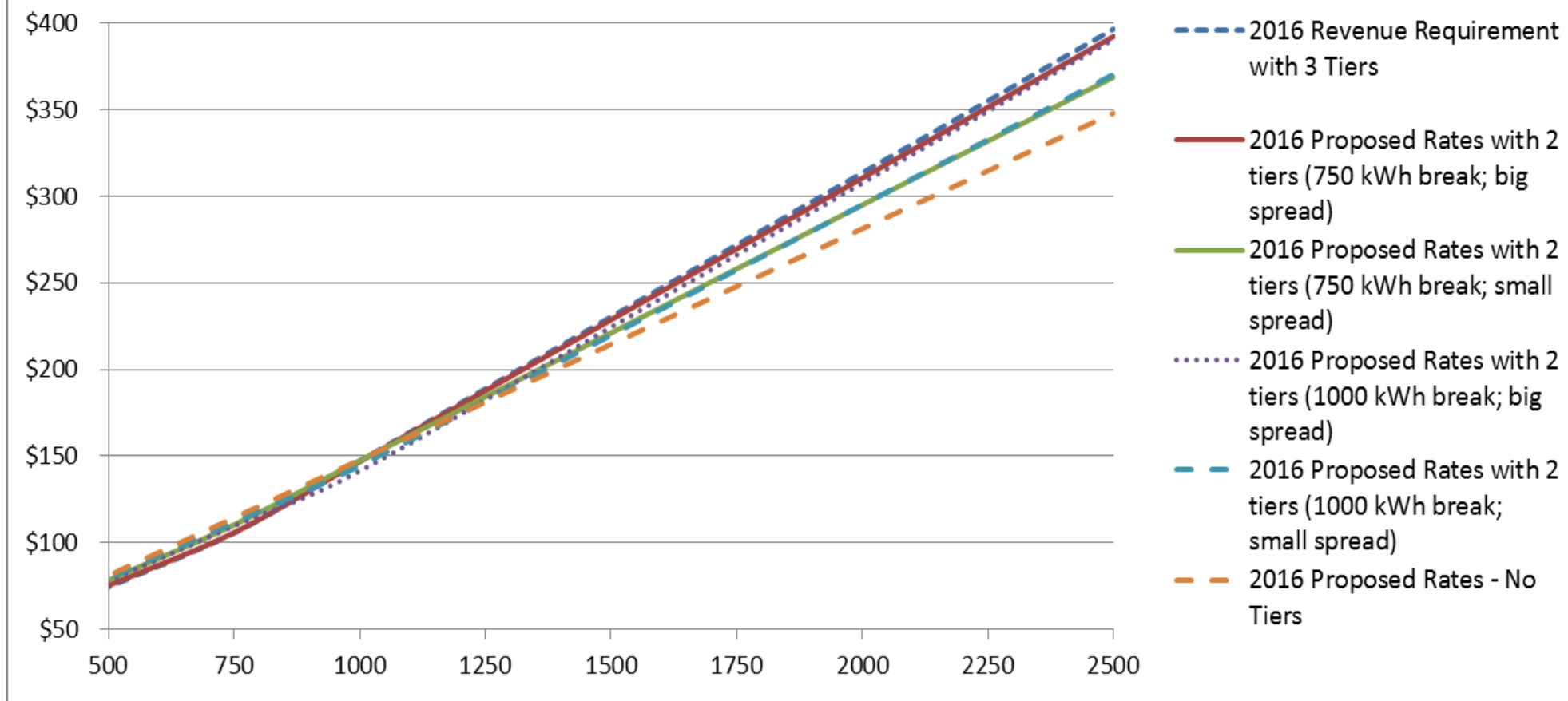


Residential Tiers – 2016 Proposed Rates Electric Utility



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Electric Tiered Rate Examples - Monthly Total Bill



Customer bill impacts Electric Utility



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Customer	Monthly Consumption (kWh)	Monthly Billing Demand (kW)	Base Rates - Customer Charge			Base Rates - Volumetric (Energy)			Base Rates - Volumetric (Billing Demand)			Fuel Adjustment Rates (Energy)			Total Bill			Percent Change
			Current	Proposed	Change	Current	Proposed	Change	Current	Proposed	Change	Current	Proposed	Change	Current	Proposed	Change	
Residential	768	n/a	12.75	14.25	1.50	0.031 (first 250); 0.042 (next 500); 0.840 (over 750)	0.0411 (first 750); 0.0827 (over 750)	0.0006 (first 750); (0.0013) (over 750)	n/a	n/a	n/a	0.078	0.081	0.003	\$ 102.92	\$ 108.77	\$ 5.86	5.7%
General Non Demand	1,605	n/a	29.50	29.50	0.00	0.069 (first 1500); 0.100 (over 1500)	0.0707 (first 1500); 0.0949 (over 1500)	0.0017 (first 1500); (0.0051) (over 1500)	n/a	n/a	n/a	0.078	0.081	0.003	\$ 268.78	\$ 275.60	\$ 6.83	2.5%
General Demand	40,631	110	100	100	0.00	0.0400	0.0442	0.0042	8.50	8.00	(0.50)	0.078	0.081	0.003	\$ 5,826	\$ 6,063	\$ 238	4.1%
Large Power	1,093,103	1970	350	350	0.00	0.0360	0.0382	0.0022	8.50	8.00	(0.50)	0.078	0.081	0.003	\$ 141,708	\$ 146,407	\$ 4,699	3.3%

*Note: All rates shown are in dollars unless otherwise noted; residential rate change reflects a change from a 3-tiered rate block to a 2-tiered one

Revenue requirement Gas Utility



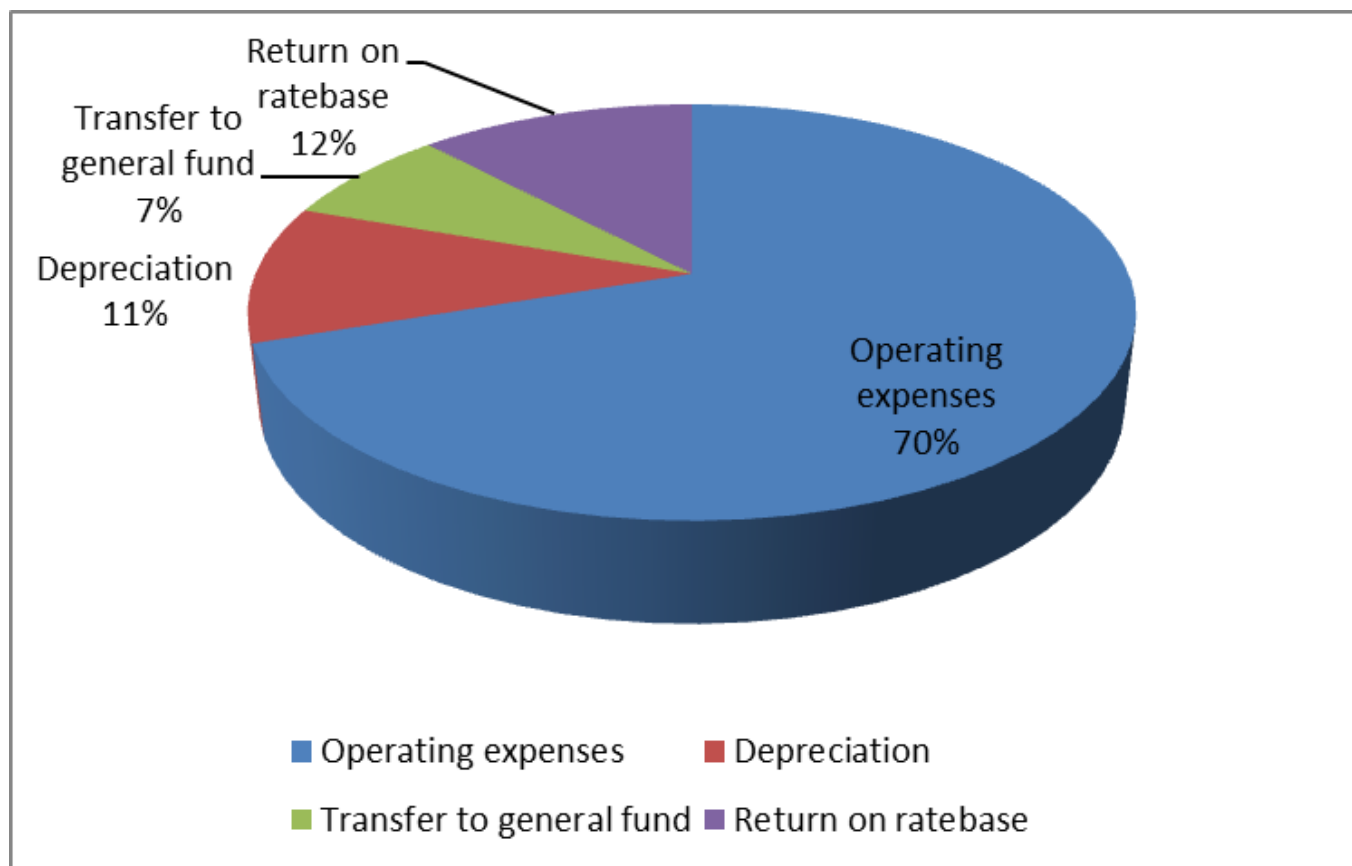
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	Forecasted Revenue Requirement	
Revenue from Rates	\$	11,353,953
Purchased Gas Adjustment (incl Embedded)		11,490,189
Manufactured Gas Adjustment		1,166,083
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		24,009,225
 Expenses		
Operation and Maintenance - Fuel		10,703,430
Other Operations and Maintenance		5,925,315
Depreciation		3,465,662
Transfer to the General Fund		2,442,652
Return on Rate Base		3,889,850
Less Other Revenues		(2,467,845)
		<hr/>
		23,959,064
 Rate Increase Required	 \$	 (51,161)
		<hr/> <hr/>

Revenue requirement Gas Utility



Candor. Insight. Results.



Revenue requirement Gas Utility



Candor. Insight. Results.

<u>Customer Class</u>	<u>FY16 Forecasted Cost of Service</u>	<u>Forecasted Revenue at Current Rates</u>	<u>Change Required</u>	<u>Percent Change from Current Rates</u>
Residential	\$ 12,827,594	\$ 12,173,316	\$ 654,278	5.37%
General Service	8,200,055	8,856,561	(656,506)	(7.41%)
General Service – Small Commercial	82,444	63,622	18,822	29.58%
Large Volume	2,846,633	2,522,364	324,269	12.86%
University of Florida	<u>2,340</u>	<u>394,364</u>	<u>(392,024)</u>	<u>(99.41%)</u>
 Total Cost of Service	 <u>\$ 23,959,066</u>	 <u>\$ 24,010,227</u>	 <u>\$ (51,161)</u>	 <u>(.21%)</u>

GRU's current rate for wheeling service to the University of Florida is based on an incremental cost approach. While overall GRU must recover its average embedded cost, incremental cost ratemaking is appropriate for customers in a competitive environment. As long as the rate is greater than the customer's incremental cost, all ratepayers will benefit from bringing the incremental cost customer onto the system. The \$2,340 shown for the cost of service for the University of Florida above represents the customer charge.

Rate Design Gas Utility



Candor. Insight. Results.

<u>Customer Class</u>	<u>Cost of Service Change</u>	<u>Proposed Change</u>	<u>Percent Change from Current Rates</u>
Residential	\$ 654,278	\$ 260,870	2.14%
General Service	(656,506)	(382,041)	(4.31%)
General Service – Small Commercial	18,822	-	-
Large Volume	324,269	69,083	2.74%
University of Florida	(392,024)	-	-
Overall Change	<u>\$ (51,161)</u>	<u>\$ (52,088)</u>	<u>(.21%)</u>

Revenue Requirement Wastewater Utility



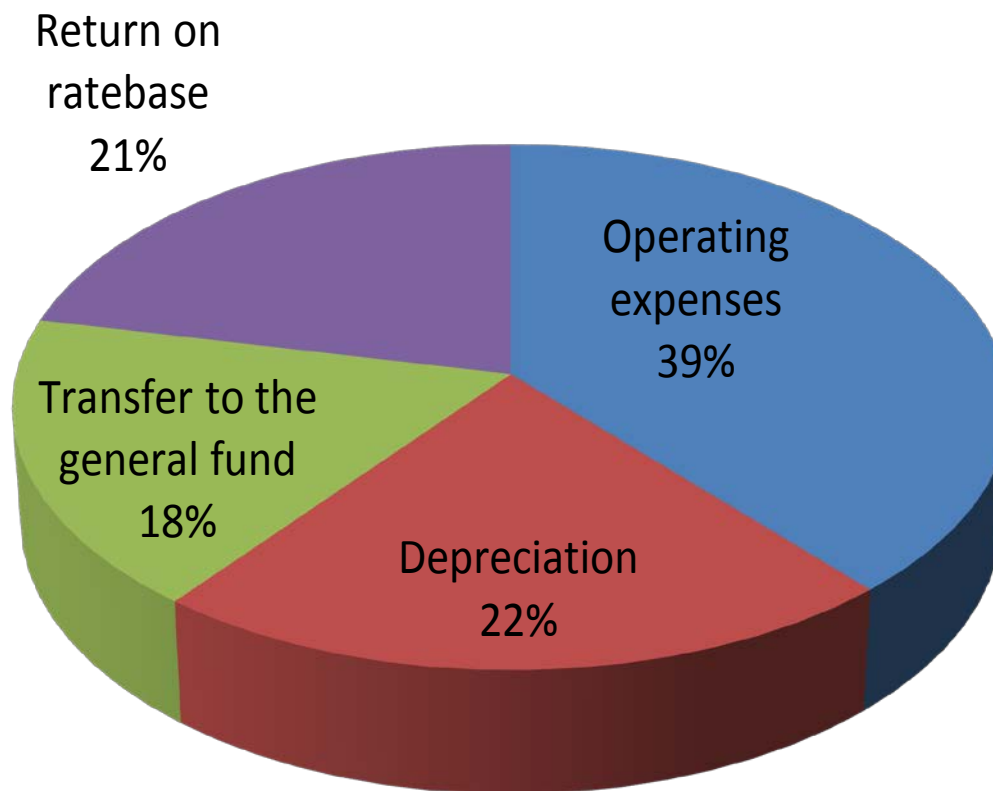
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	Forecasted Revenue Requirement	
Revenue from Rates	\$	35,138,376
Expenses		
Operation and Maintenance		16,063,299
Depreciation		9,112,973
Transfer to the General Fund		7,473,327
Return on Rate Base		8,971,497
Less Other Revenues		(5,015,987)
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		36,605,109
Rate Increase Required	\$	<hr/> <hr/> 1,466,733

Revenue requirement Wastewater Utility



Candor. Insight. Results.



Revenue with rate increase

Wastewater Utility



Candor. Insight. Results.

	Forecasted 2016 at Present Rates	Forecasted 2016 with Rate Increase
Sources of Cash		
Revenue from Rates	\$ 35,138,376	\$ 36,606,129
Other Revenues - Connection Charges	1,976,058	1,976,058
Other Revenues - Surcharges	2,730,114	2,730,114
Other Revenues - Interest Income	240,784	240,784
Other Revenues - BABs Subsidy	1,009,441	1,009,441
Other Revenues - Rate Stabilization Transfer	(1,355,725)	(1,355,725)
Other Revenues - Biosolids	312,000	312,000
Other Revenues - Shands and Innovation Square	103,314	103,314
Total Sources of Cash	<u>40,154,362</u>	<u>41,622,115</u>
Uses of Cash		
Operations and Maintenance	16,063,299	16,063,299
Debt Service	8,346,207	8,346,207
Utility Plant Improvement Fund	9,738,263	9,738,263
Transfer to Rate Stabilization Fund	-	-
Transfer to the General Fund	7,473,327	7,473,327
Total Uses of Cash	<u>41,621,095</u>	<u>41,621,095</u>
Net Cash Flow	<u>\$ (1,466,733)</u>	<u>\$ 1,020</u>
Rate increase		<u>4.17%</u>

Rate Design Wastewater Utility



Candor. Insight. Results.

Rate	Current Rate	Proposed Rate
Volume Rate per 1,000 Gallons	\$ 6.05	\$ 5.33
Customer Charge	8.40	14.65
Reclaimed Rate per 1,000 Gallons	0.70	0.65
COD per Pound	*	0.23
SS per Pound	*	0.35
Phos per Pound	*	2.31
NH3 per Pound	*	0.60

Customer bill impacts Wastewater Utility



Candor. Insight. Results.

Customer	Volume (1,000 gallons)	Monthly Bill at Current Rates	Monthly Bill at Cost-Based Rates	Change	Percent Change
Small Residential	3	26.55	30.64	4.09	15%
Average Residential	5	38.65	41.30	2.65	7%
Large Residential	15	99.15	94.60	(4.55)	-5%
Non-Residential	20	129.40	121.25	(8.15)	-6%
Non-Residential	26	165.70	153.23	(12.47)	-8%
Non-Residential	52	323.00	291.81	(31.19)	-10%
Non-Residential	78	480.30	430.39	(49.91)	-10%
Reclaimed Water	20	22.40	27.65	5.25	23%

ADJUST RATES

Currently some rate components are set above GRU's cost of providing service and others are set below. A realignment of wastewater rates to match cost of service would make rates more equitable.

TEST FOR HIGH STRENGTH PARAMETERS

Currently GRU only has one customer that is billed for exceeding domestic strength for chemical oxygen demand. Having high strength rates established for all four parameters (chemical oxygen demand, phosphorous, suspended solids, and ammonia) ensures that GRU will recover appropriate revenue from future customers producing high strength wastewater. We recommend that GRU perform regular tests on industrial customers to ensure they are not exceeding the high strength parameters.

CONSIDER REVISING WINTER MAX

Winter Max is currently based on the water usage for the months of January and February.

Other options include the following:

1. Have no winter max and bill for all water used.
2. Increase the number of months in the winter max to include December and/or March.
3. Add 10-15% to the base winter max amount.
4. Bill for a percentage of water (75% - 90%) with a cap at 10,000 gallons.

Revenue requirement Water Utility



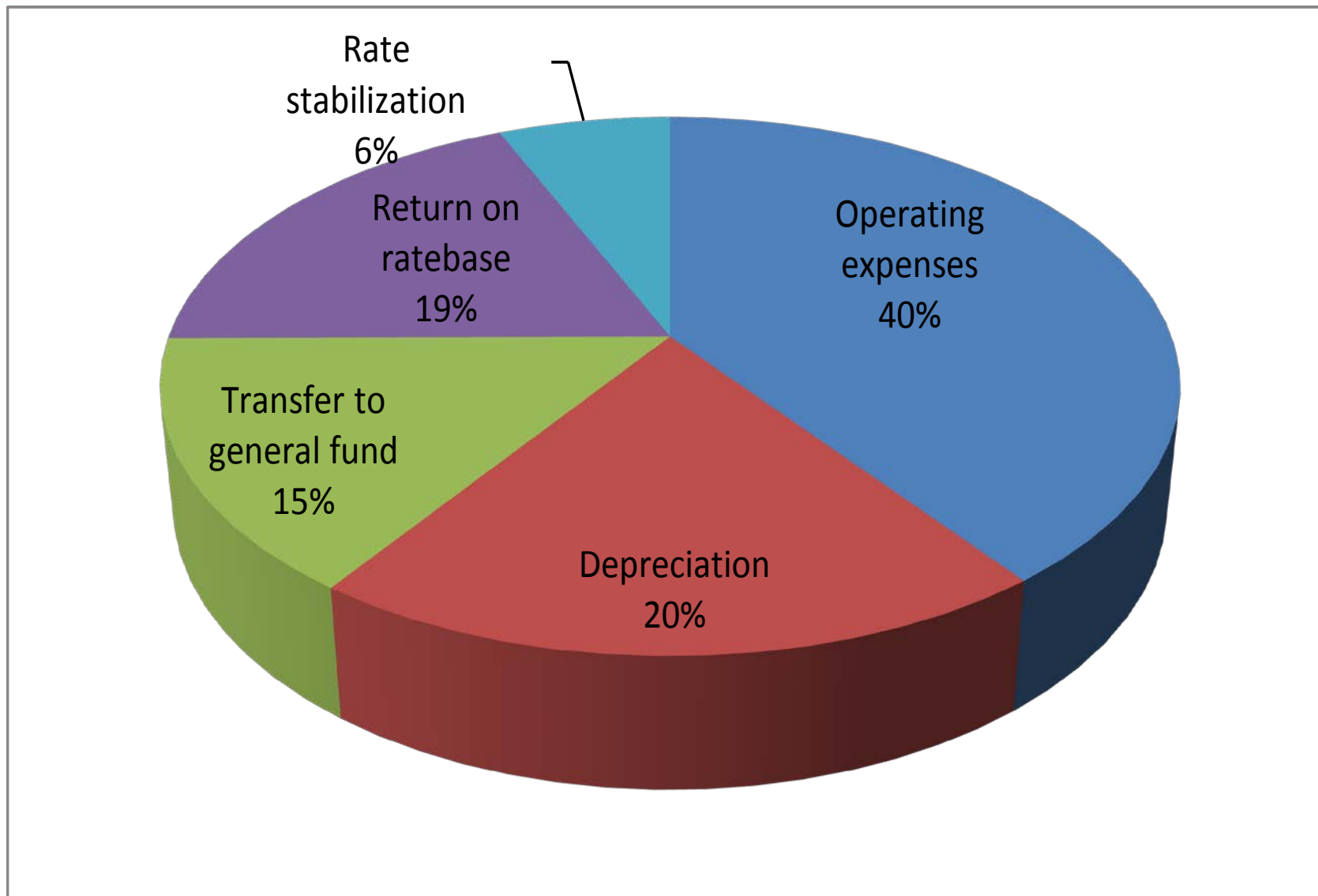
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	Forecasted Revenue Requirement	
Revenue from Rates	\$	29,966,068
Expenses		
Operation and Maintenance		14,668,927
Depreciation		7,371,900
Transfer to the General Fund		5,602,213
Transfer to Rate Stabilization		2,405,994
Return on Rate Base		6,857,499
Less Other Revenues		(5,590,849)
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		31,315,685
Rate Change Required	\$	<u><u>1,349,616</u></u>

Revenue requirement Water Utility



Candor. Insight. Results.



Cost of Service Water Utility



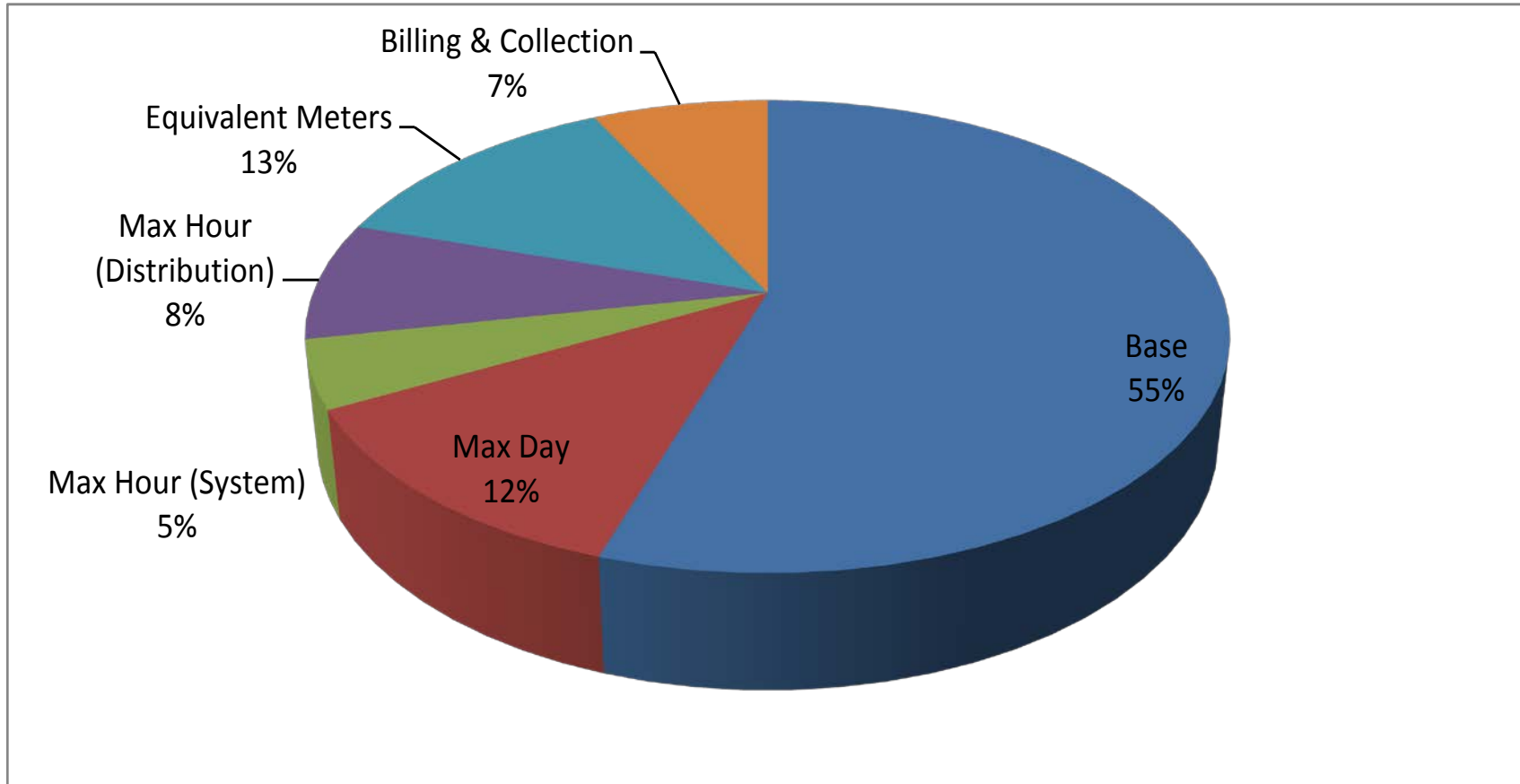
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Customer Class	Forecasted Cost of Service	Forecasted Revenue at Current Rates	Change Required	Percent Change from Current Rates
Residential	\$ 17,692,876	\$ 16,441,070	\$ 1,251,806	7.61%
Multi-Unit	3,041,084	2,598,540	442,544	17.03%
General Service	5,908,126	6,615,745	(707,618)	(10.70%)
Residential Irrigation	917,129	795,690	121,439	15.26%
General Irrigation	1,957,980	1,719,238	238,741	13.89%
University of Florida – Off Campus	25,315	25,315	0	0%
University of Florida – On Campus	1,761,994	1,761,994	0	0%
Alachua	11,182	8,477	2,705	31.91%
Total	\$ 31,315,685	\$ 29,966,068	\$ 1,349,617	4.50%

Cost of service Water Utility



Candor. Insight. Results.



<u>Customer Class</u>	<u>Cost of Service Change</u>	<u>Proposed Change</u>	<u>Percent Change from Current Rates</u>
Residential	\$ 1,251,807	\$ 1,250,126	7.6%
Multi-Unit	442,543	397,609	15.3%
General Service	(707,618)	(660,442)	(9.98%)
Residential Irrigation	121,439	102,246	12.85%
General Irrigation	238,741	258,926	15.06%
University of Florida – Off Campus	-	-	-
University of Florida – On Campus	-	-	-
Alachua	2,705	-	-
Overall Change	<u>\$ 1,349,616</u>	<u>\$ 1,348,465</u>	<u>4.50%</u>

Volume Charge			Customer Charge by Meter		
	Current	Calculated		Current	Calculated
<u>Residential</u>					
First 6,000 gallons	\$2.35	\$3.20	5/8 and 3/4 meter	9.20	6.69
Next 14,000 gallons	\$3.75	\$4.70	1" meter	9.20	9.37
Over 20,000 gallons	\$6.00	\$7.50	1.5" meter	9.20	12.05
			2" meter	9.20	19.41
			3" meter	9.20	73.64
<u>Multi-Unit Dwellings</u>					
Volume	\$3.05	\$3.45	4" meter	9.20	93.72
			6" meter	9.20	140.58
<u>Non-Residential</u>					
Volume	\$3.85	\$3.35	8" meter	9.20	194.13
			10" meter	9.20	267.77
<u>Residential Irrigation</u>					
First 15,000 gallons	\$3.75	\$4.75			
Over 15,000 gallons	\$6.00	\$7.30			
<u>Non-Residential Irrigation</u>					
Volume	\$4.55	\$5.35			
<u>University of Florida</u>					
On-campus facilities	\$2.22	\$2.22			
Off-campus facilities	\$2.64	\$2.64			
<u>City of Alachua</u>					
	\$1.62	\$1.62			

Customer bill impacts Water Utility



Candor. Insight. Results.

Customer	Meter Size	Volume (1,000 gallons)	Volume Rates			Meter Charges			Total Bill			
			Volume Bill at Current Rates	Volume Bill at Proposed Rates	Change	Current	Proposed	Change	Meter Charge at Current Rates	Meter Charge at Proposed Rates	Change	Percent Change
Small Residential	5/8	3	7.05	9.60	2.55	9.20	6.69	(2.51)	16.25	16.29	0.04	0%
Average Residential	5/8	5	11.75	16.00	4.25	9.20	6.69	(2.51)	20.95	22.69	1.74	8%
Large Residential	2	15	47.85	61.50	13.65	9.20	19.41	10.21	57.05	80.91	23.86	42%
Small Multi- Unit	5/8	3	9.15	10.35	1.20	9.20	6.69	(2.51)	18.35	17.04	(1.31)	-7%
Average Multi Unit	5/8	5	15.25	17.25	2.00	9.20	6.69	(2.51)	24.45	23.94	(0.51)	-2%
Large Multi Unit	6	15	45.75	51.75	6.00	9.20	140.58	131.38	54.95	192.33	137.38	250%
Non-Residential	1	13	51.98	45.23	(6.75)	9.20	9.37	0.17	61.18	54.60	(6.58)	-11%
Non-Residential	8	81	311.85	271.35	(40.50)	9.20	194.13	184.93	321.05	465.48	144.43	45%
Average Residential Irrigation	5/8	6	22.50	28.50	6.00	9.20	6.69	(2.51)	31.70	35.19	3.49	11%
Large Residential Irrigation	2	18	74.25	93.15	18.90	9.20	19.41	10.21	83.45	112.56	29.11	35%
Average General Irrigation	5/8	6	27.30	32.10	4.80	9.20	6.69	(2.51)	36.50	38.79	2.29	6%
Large General Irrigation	3	18	81.90	96.30	14.40	9.20	73.64	64.44	91.10	169.94	78.84	87%

ADJUST RATES

Currently some rate classes are paying less than their share of Gainesville's costs and others are paying more. A realignment of water rates to match cost of service would make rates more equitable.

IMPLEMENT METER SPECIFIC CUSTOMER CHARGES

Gainesville's existing rate structure has one customer charge that applies to all customers. Uniform customer charges are appropriate when customers in different classes are similar, such as single family and multi-unit residential. However, when customers have different meter sizes, customers with smaller meters are paying a disproportionate share of system demand charges and larger meter customers are being subsidized.

> Questions and discussion

GRU Recommendations

- Provide policy guidance on residential electric rate tiers
- Change customer charge to reflect water meter size
- Refer wastewater winter max billing to RUC
- Remove Cost of Service study from RUC referral list