

**READING MUNICIPAL
LIGHT DEPARTMENT**

**BOARD
OF
COMMISSIONERS**

REGULAR SESSION

APRIL 20, 2017

**STRATEGY AND PLAN TO IMPROVE DEMAND
REDUCTION AT PEAK TIMES
ATTACHMENT 1**

Electric Rate Design Scenarios

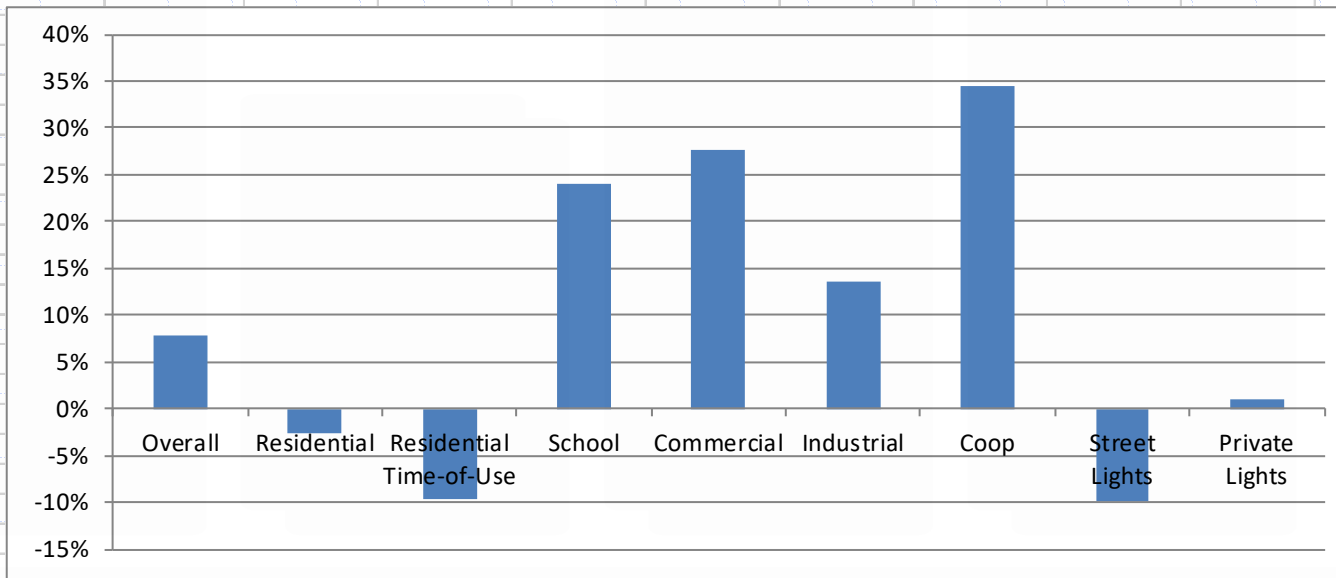
A Presentation to the
Reading Municipal Light Department
April 12, 2017

FY18 Cost of Service Assumptions

- ◆ Used FY16 cost of service model as the base
- ◆ Sales kept flat at of 672 million kWh
- ◆ O&M from RMLD FY18 budget
- ◆ Plant increased to \$79 million
- ◆ Customer and distribution charges increased by 4%
- ◆ Municipal street lights billed at \$0.13861

FY18 Cost of Service Results

DESCRIPTION	FY18	Residential	Residential	School	Commercial	Industrial	Coop	Lighting	
	Test Year							Residential	Time-of-Use
	Total	A	A-2	SCH	C	I	COOP	Street	Lights
TOTAL ANNUAL REVENUES	97,811,030	39,143,692	662,010	2,097,137	29,323,754	25,670,440	465,143	344,056	104,798
TOTAL ANNUAL EXPENSES	<u>91,551,366</u>	<u>40,233,432</u>	<u>729,846</u>	<u>1,792,054</u>	<u>24,326,487</u>	<u>23,479,965</u>	<u>374,057</u>	<u>513,102</u>	<u>102,424</u>
RETURN (NET INCOME)	6,259,664	-1,089,740	-67,836	305,083	4,997,267	2,190,476	91,087	-169,046	2,374
TOTAL NET PLANT, JUN 30	79,119,000	40,622,268	704,232	1,271,407	18,123,155	16,177,139	264,851	1,695,890	260,058
RATE OF RETURN	7.9	-2.7	-9.6	24.0	27.6	13.5	34.4	-10.0	0.9



FY18 Cost of Service Results

- ◆ Overall rate of return 7.9%
- ◆ Class rates of return vary from minus 10% to plus 28%
- ◆ Rates of return are comparable to the FY13 cost of service study
- ◆ Relative rates of return are within the range seen from other Massachusetts municipal utilities.

Issue of Subsidies in RMLD's Rates

Subsidies are inevitable in retail electric rates

- Rates can seldom reflect the actual cost of service to every customer
 - Energy costs vary hourly
 - Energy rates reflect at most two groups of hours, on-peak and off-peak
 - Capacity and transmission costs are set based on demand during the peak hour of every year (capacity) or month (transmission)
 - Most customers do not even pay a demand charge
 - Those that do typically pay a rate based on the customer's peak, not their demand during the regional peak hour
 - Distribution costs vary depending on where a customer is located on the distribution system
 - Rates are based on the average cost of the entire network

Issue of Subsidies in RMLD's Rates

Political considerations are reflected in rate levels

- Residential customers are favored by both municipal and private utilities
 - Residents of municipal systems usually elect the Municipal Light Board members
 - The Attorney General often represents the residential customers of private utilities in rate cases, putting downward pressure on residential rates
- Large customers are more sensitive to competitive price pressure and are more able to move their operations to shop for lower electricity prices
 - Municipal utilities also tend to view large customers as employers for residents and therefore require less net income from them

Two Types of Subsidies to Address in Rate Design

- **Cross-Class Subsidies**
 - Residential rates do not even recover expenses
 - Commercial and Industrial rates produce all of the net income and subsidize the residential customers
 - Renewable Generation rates do not recover much of the cost of providing distribution service to customers who take service under those rates
- **Intra-Class Subsidies**
 - Demand charges do not reflect the actual cost of distribution, capacity and transmission expenses, all of which are demand-related
 - High-load factor customers subsidize low-load factor customers
 - **Has the added disadvantage of not providing adequate incentive to customers to control demand during peak periods**

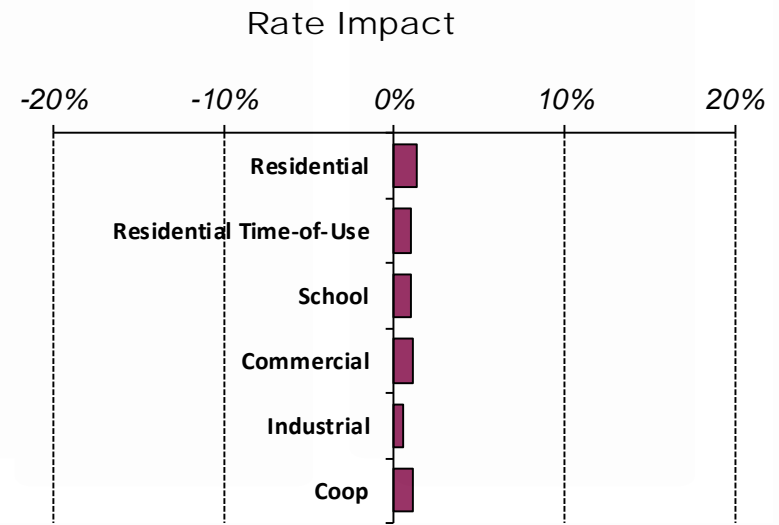
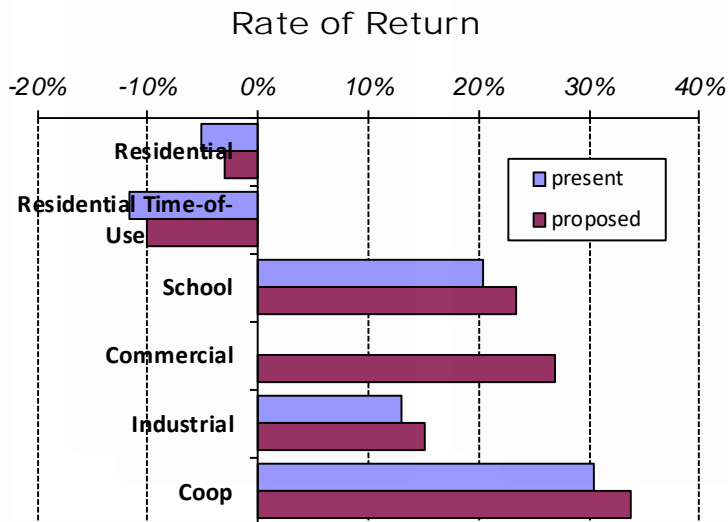
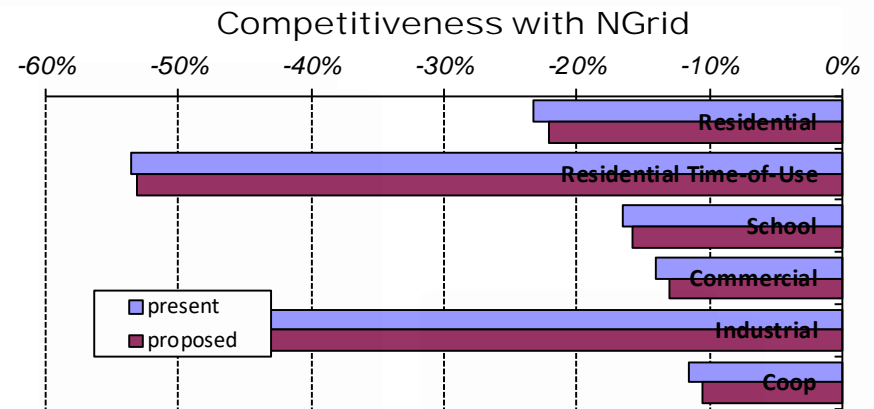
Alternative Rate Design Scenarios To Address Cross-Class Subsidies

All scenarios were designed to produce an overall 8% rate of return

1. Design rates that will provide an equal percent increase to all classes of customer
2. Design all rates to produce the same rate of return, approximately 8%
3. Design residential rates that produce a 0% rate of return, with all other rate classes producing rates of return equal to each other

Scenario 1: Equal Percentage Increase

	Rate of Return (%)	Revenue Change (\$000)	Revenue Change (%)	RMLD vs. NGrid (%)
Residential	-3.0%	\$533	1.4%	-22.1%
Residential Time-of-Use	-10.0%	6	1.0%	-53.1%
School	23.4%	20	1.0%	-15.8%
Commercial	27.0%	320	1.1%	-13.1%
Industrial	15.1%	131	0.5%	-53.9%
Coop	33.8%	5	1.2%	-10.6%
TOTALS	7.9%	\$1,016	1.1%	-32.5%

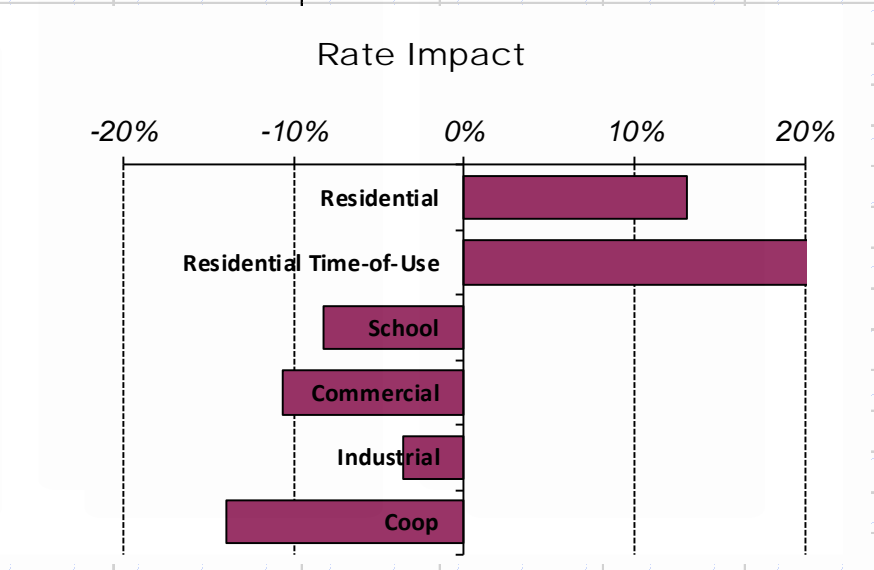
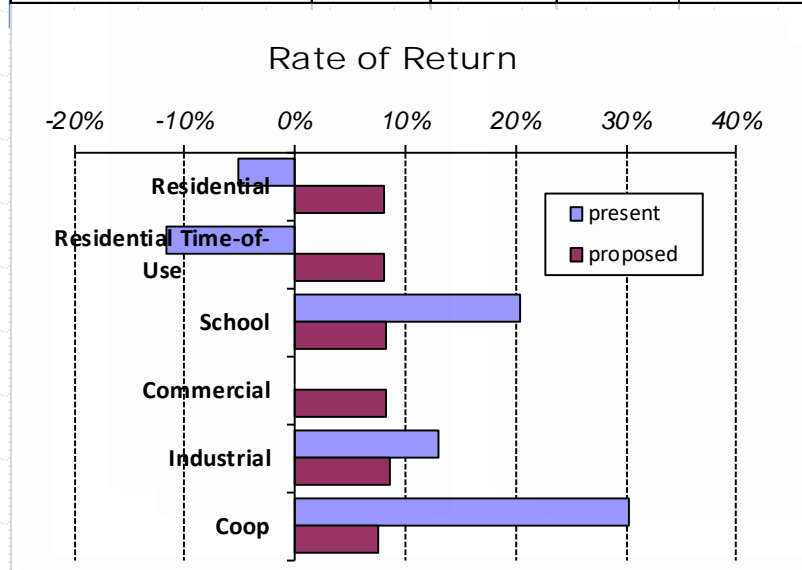
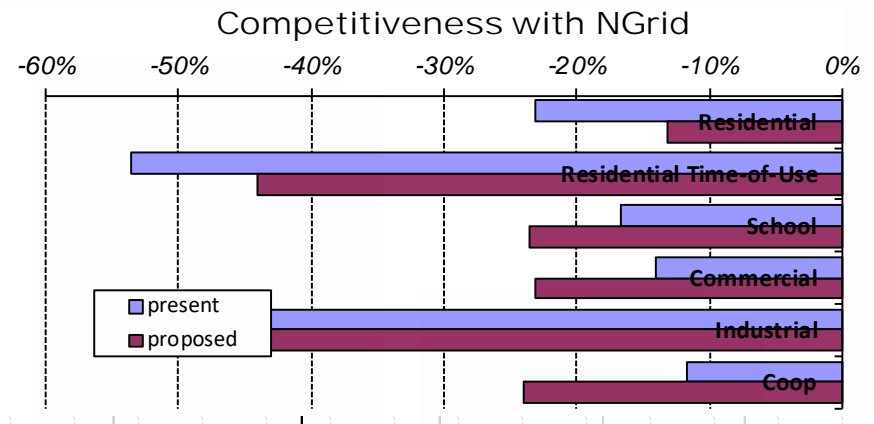


Scenario 1: Equal Percentage Increase

- Overall revenue increase is \$1 million
- All classes base rates increased by 4%
 - Net bill increase averages 1%
- Rates of return remain uneven
 - Residential rates lose \$1.3 million in net income
 - Commercial and Industrial customers pay over \$7 million

Scenario 2: Equal Rates of Return

	Rate of Return	Revenue Change		RMLD vs. NGrid
	(%)	(\$000)	(%)	(%)
Residential	8.1%	\$5,001	13.1%	-13.1%
Residential Time-of-Use	8.0%	132	20.3%	-44.1%
School	8.2%	(170)	-8.3%	-23.5%
Commercial	8.2%	(3,033)	-10.6%	-23.2%
Industrial	8.5%	(920)	-3.6%	-55.8%
Coop	7.6%	(63)	-13.9%	-24.0%
TOTALS	7.8%	\$947	1.0%	-32.6%

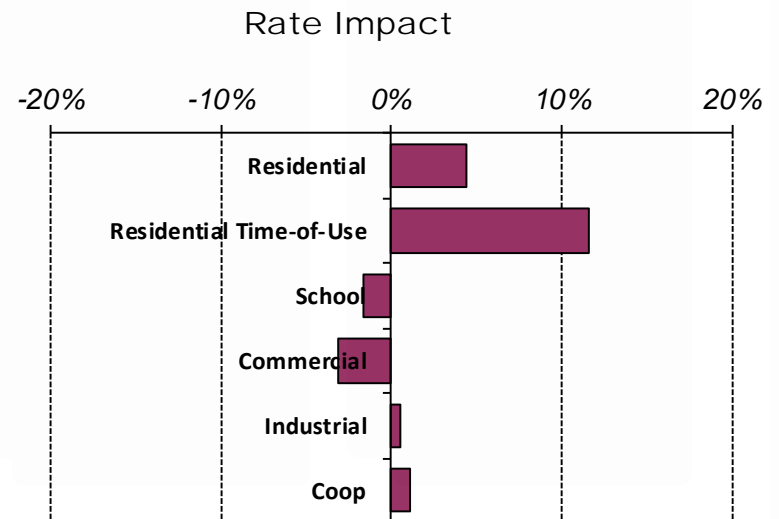
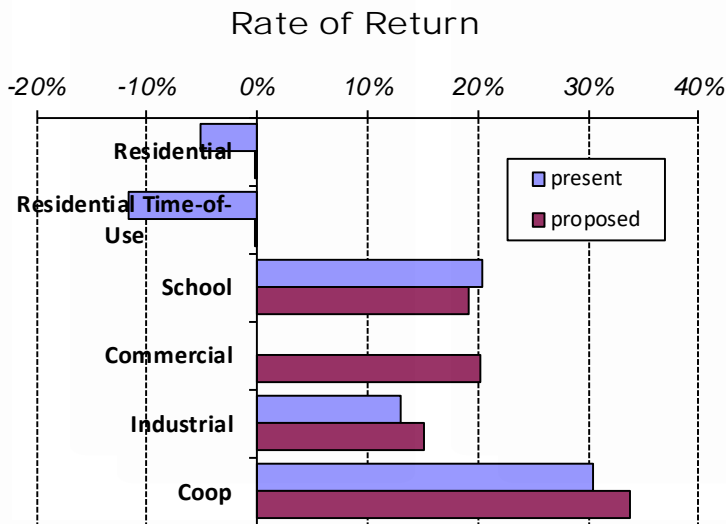
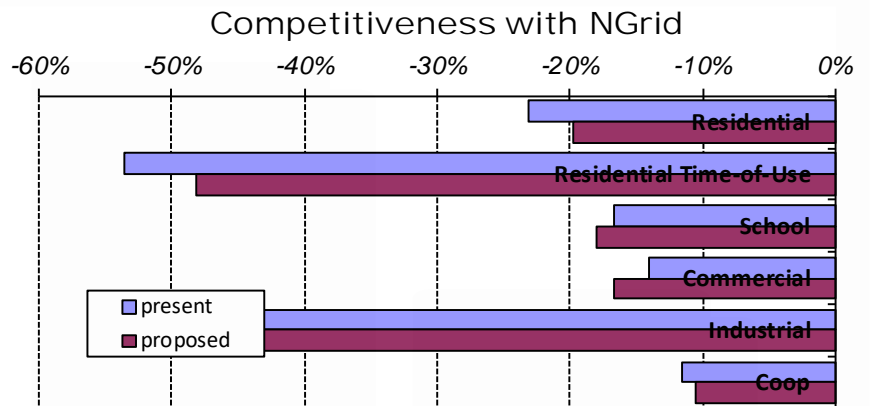


Scenario 2: Equal Rates of Return

- Overall revenue increase is \$1 million
- Each class produces an 8% return on equity
- Average rate increase is 1%
 - Residential increase is 13% or \$5 million
 - Commercial reduction is 11% or \$3 million
 - Industrial reduction is 4% or \$1 million

Scenario 3: Residential Classes 0% Rate of Return All Others Equal Rates of Return

	Rate of Return	Revenue Change		RMLD vs. NGrid
	(%)	(\$000)	(%)	(%)
Residential	-0.1%	\$1,691	4.4%	-19.8%
Residential Time-of-Use	-0.1%	75	11.6%	-48.2%
School	19.1%	(33)	-1.6%	-18.0%
Commercial	20.3%	(880)	-3.1%	-16.7%
Industrial	15.1%	131	0.5%	-53.9%
Coop	33.8%	5	1.2%	-10.6%
TOTALS	7.9%	\$990	1.0%	-32.6%



Scenario 3:

Residential Classes 0% Rate of Return

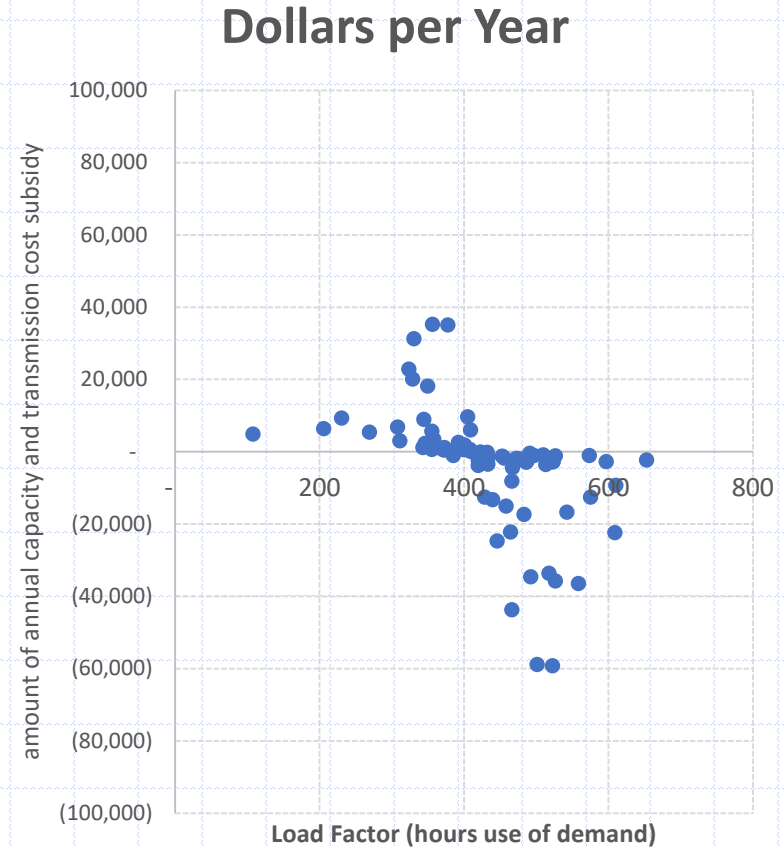
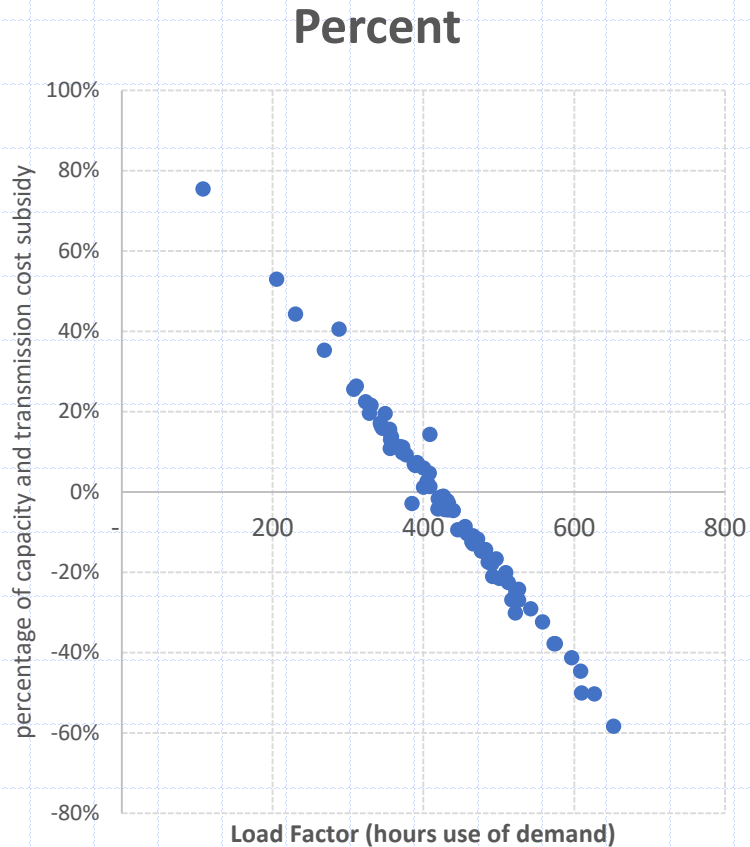
All Others Equal Rates of Return

- Overall revenue increase is \$1 million
- Average rate increase is 1%
 - Residential increase is 4% or \$1.7 million
 - Commercial reduction is 3% or \$0.9 million
 - Industrial increase is 0.5% or \$130 thousand

Alternative Rate Design Scenarios To Address Intra-Class Subsidies

- Present rate charges a demand charge only for distribution service to Commercial, Industrial and School customers
 - Rate varies between \$7.48 and \$8.94 per kW
- In FY18 Forward Capacity and Transmission costs will total almost \$16 per kW
- All capacity and transmission costs are recovered through a flat cents per kWh charge that is the same for all customers
- Customers who use a lot of kWh relative to their peak demand (high load factor) are paying more than their share of capacity and transmission costs

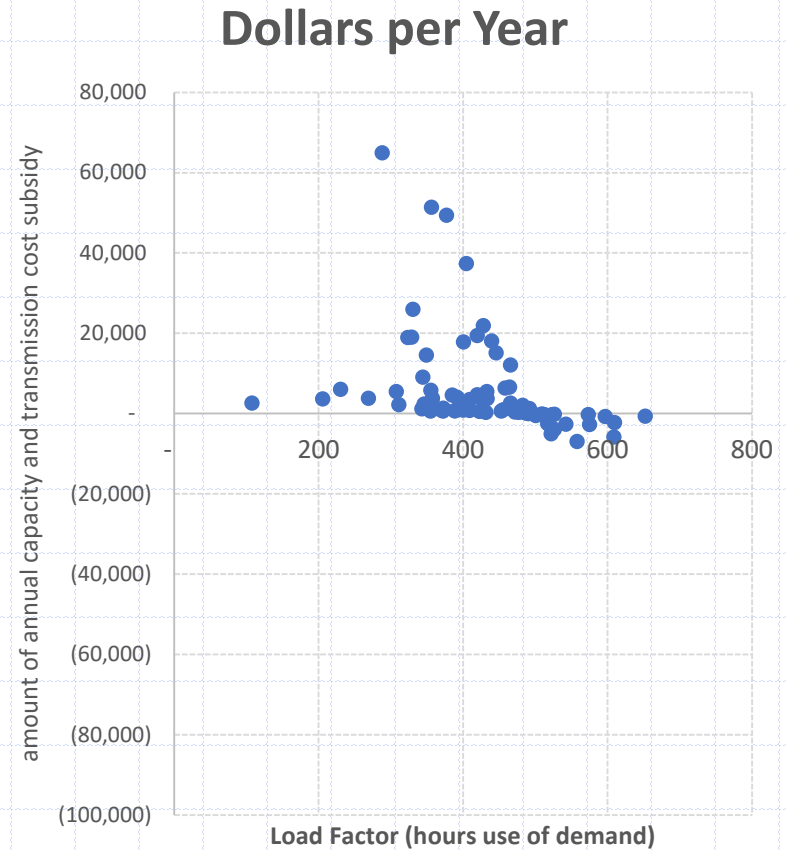
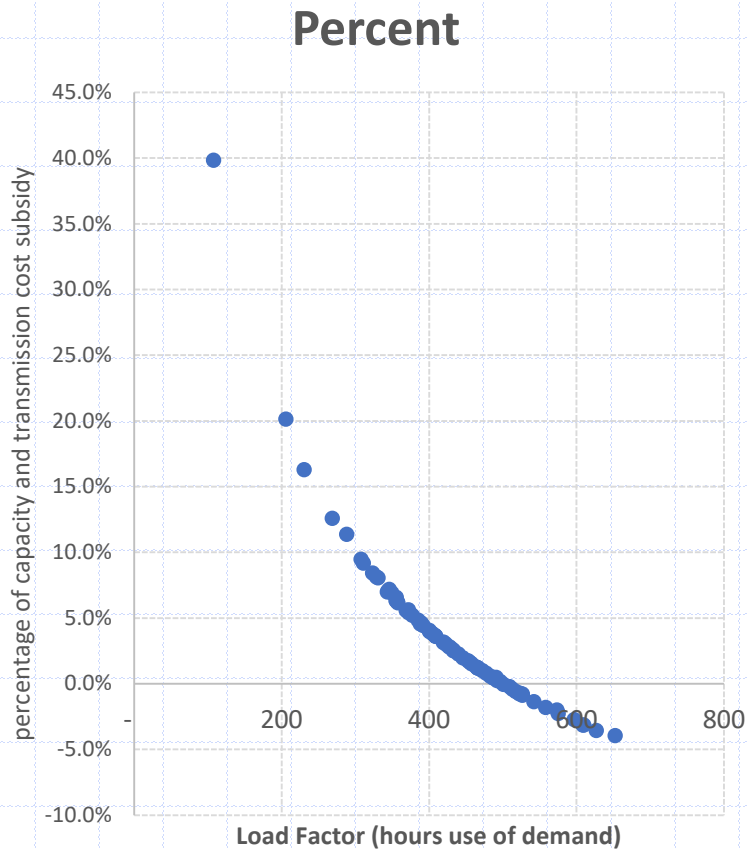
Industrial Rate - Subsidization of Capacity and Transmission Cost



Proposed Approach to Reducing or Eliminating this Subsidy

- Create a separate Purchase Power Capacity and Transmission Charge (PPCTC) for demand-billed customers
 - A demand component that reflects the combined cost of Forward Capacity and Regional Network transmission charges
 - An energy component that recovers the remaining revenues that the PPCTC charges to all other customers would have recovered
- No shift of revenues from one class to another, only from high load factor customers to low load factor customers.

Impact of Shifting Capacity and Transmission Costs to Demand Charge



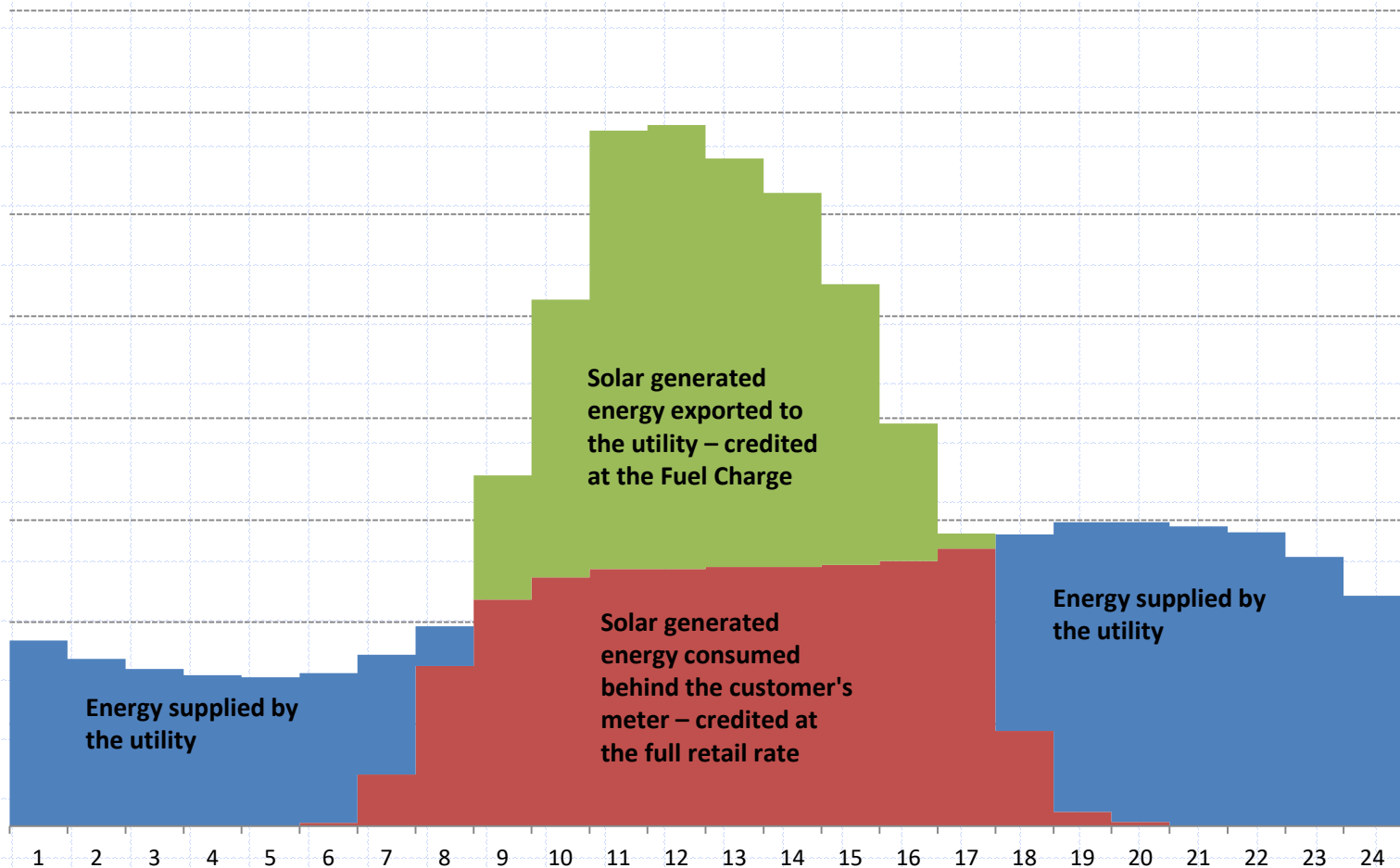
Impact of Shifting Capacity and Transmission Costs to Demand Charge

- Two thirds of Industrial Customers would see an increase in their cost of electricity
- Only five customers would see an increase greater than 10%
- None of the decreases would be greater than 5%
 - Customers seeing decreases are high load factor customers using a lot of kWh
 - Customers seeing increases tend to be smaller, low load factor customers using fewer kWh

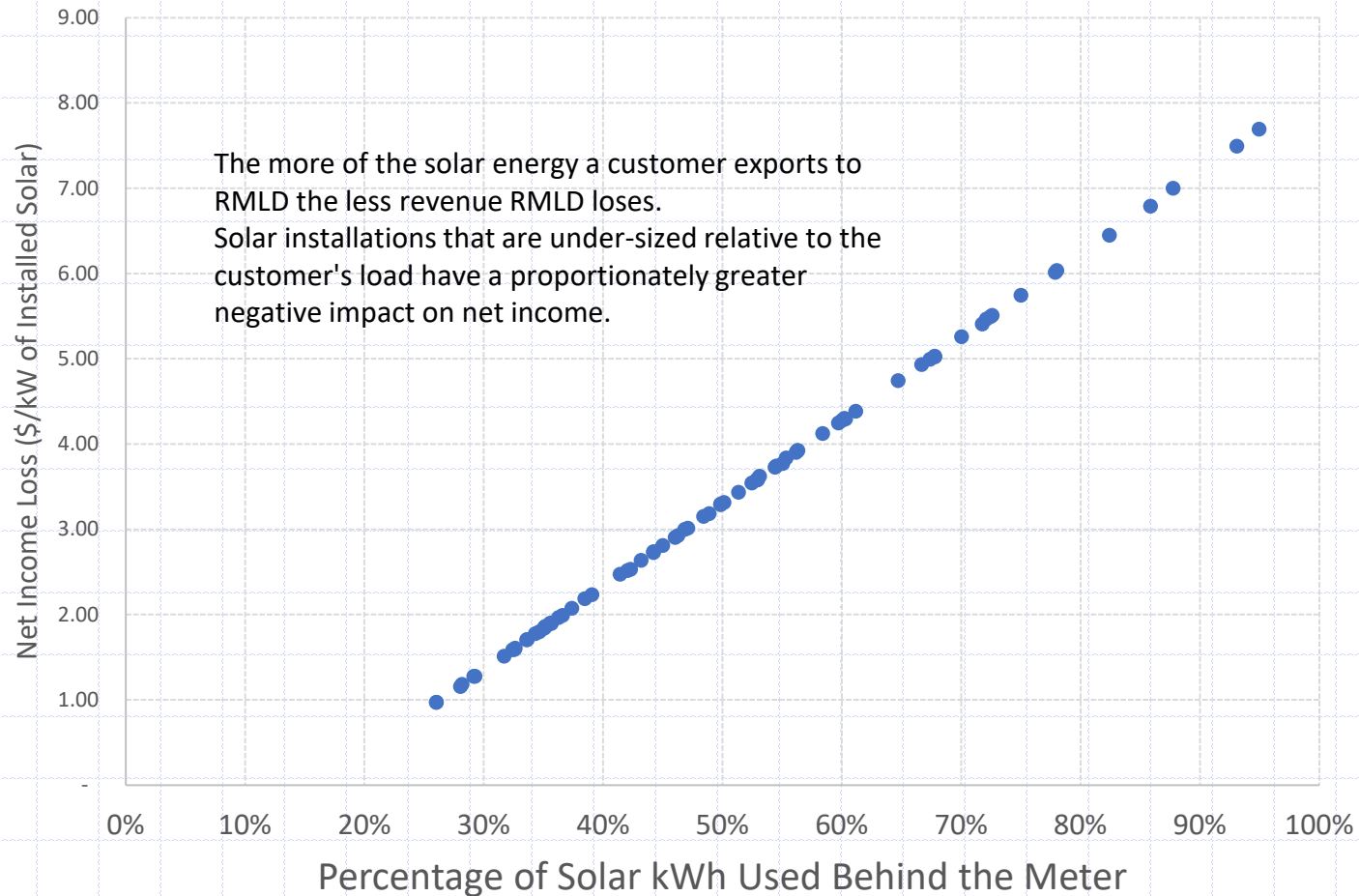
Subsidization Under Present Renewable Generation Rate

- Present rate allows customer to avoid paying a distribution charge for all kWh that are produced by their solar generator and consumed on the customer's premises
 - The percentage of distribution charges avoided varies with the size of the solar installation but averages over 30% of total distribution revenue lost per customer
- RMLD loses an average of \$3.16 per installed kW of solar capacity each month in distribution revenue
 - Total monthly subsidy is estimated at \$1,800 across approximately 80 customers, an average subsidy of \$22 per customer.
 - This is mitigated by the fact that payment for energy exported by the solar customer is at the Fuel Charge, which is less than the avoided energy, capacity and transmission value of the solar generation

How a Solar Customer Looks to RMLD Metering



Lost Revenue vs Solar Utilization



Options for Reducing the Renewable Generation Subsidy

- Add a Distribution Recovery Charge of \$x.xx per kW of installed solar capacity each month to recover the lost distribution revenue
 - This is not ideal since, as the previous graph shows, the actual lost revenue per kW varies widely from one customer to another.
 - Simple to administer with existing metering and billing system
 - This approach has been adopted by many public power systems
- Install demand meters on all customers with renewable generation and bill their distribution service on a demand rather than energy basis
 - Solar generation does not significantly reduce the maximum demand that a customer places on the distribution system
 - Requires new and more expensive metering and billing solutions
- Separate the metering and billing of distribution service and renewable generation supply
 - Bill the customer for 100% of the electricity consumed on the customer's premises at the normal retail rate
 - Credit the customer for 100% of the energy generated by the facility at a Renewable Generation Buyback tariff rate
 - Most complete and accurate way of eliminating the subsidy
 - Requires new and more complicated metering and billing solutions



Questions?

**POWER SUPPLY REPORT
FEBRUARY 2017
ATTACHMENT 2**



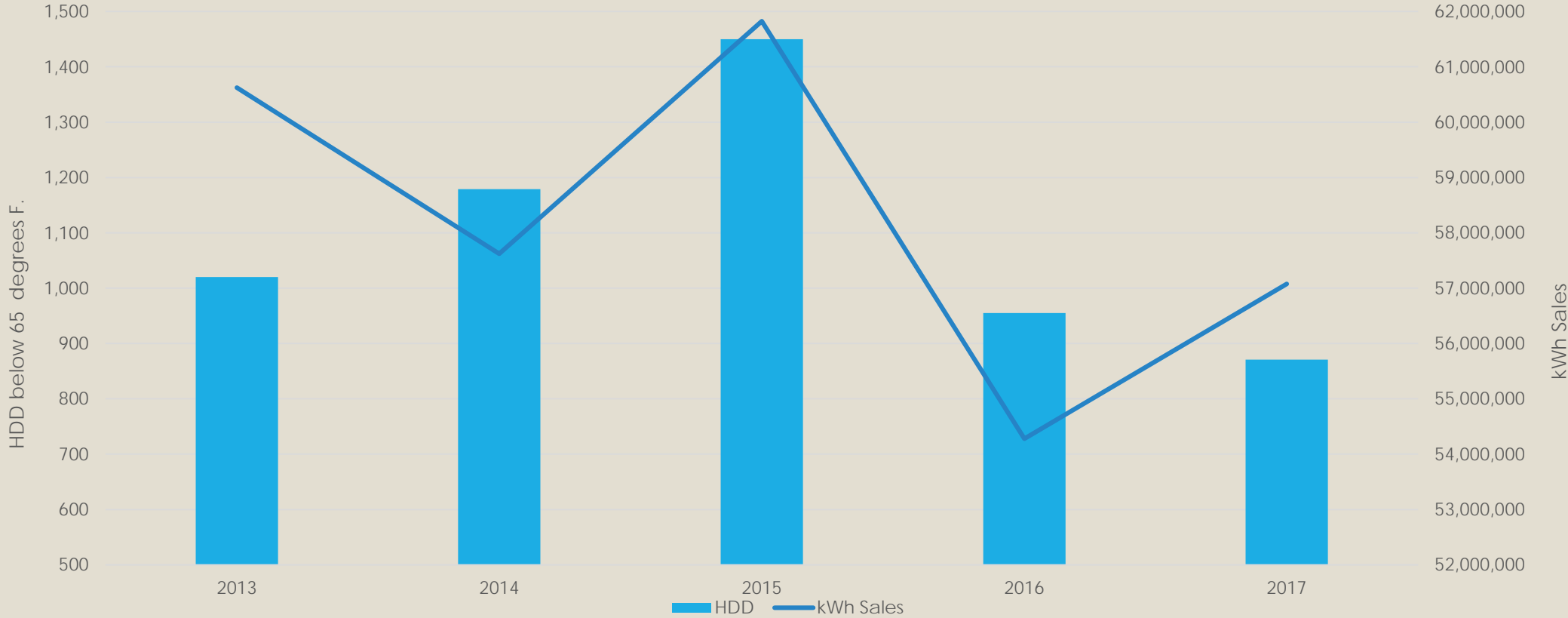
INTEGRATED RESOURCES

April 20, 2017
RMLD Board of Commissioners Meeting
Reporting for February

Jane Parenteau
Director of Integrated Resources

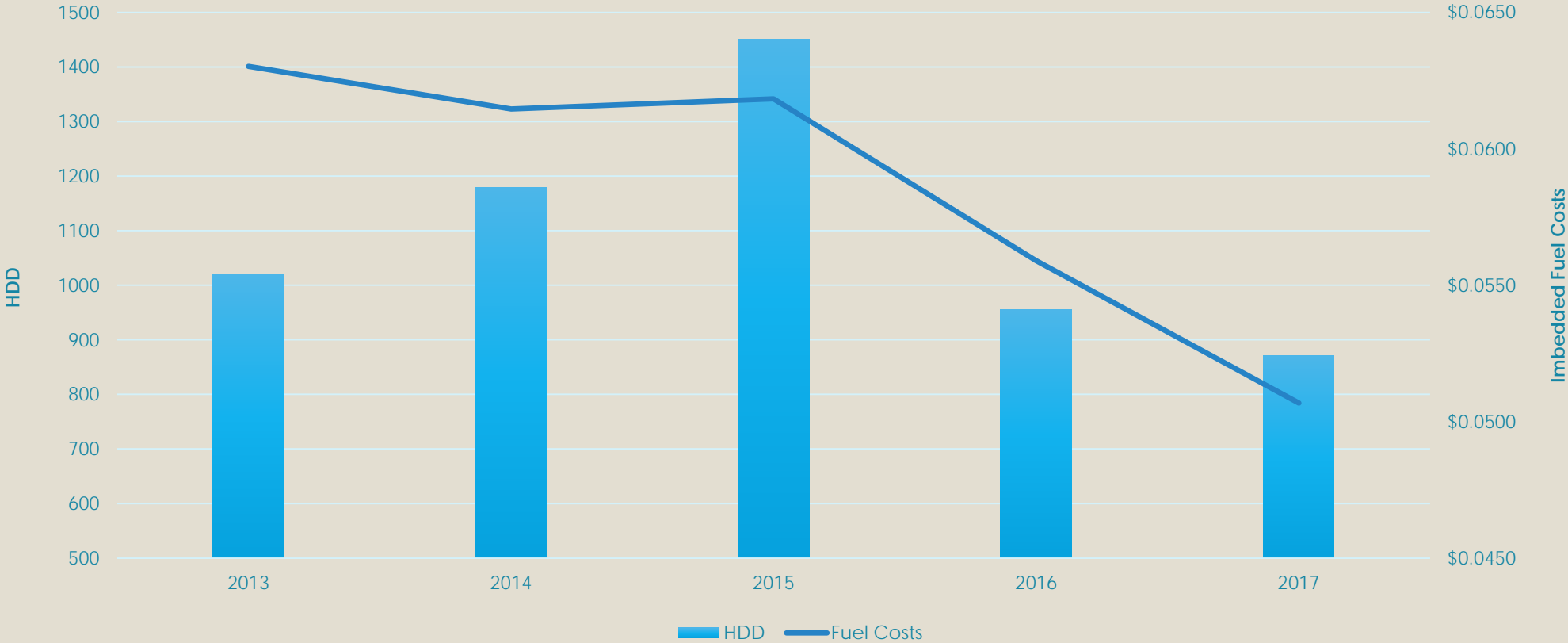
Heating Degree Days vs. kWh Sales

February 2013-2017



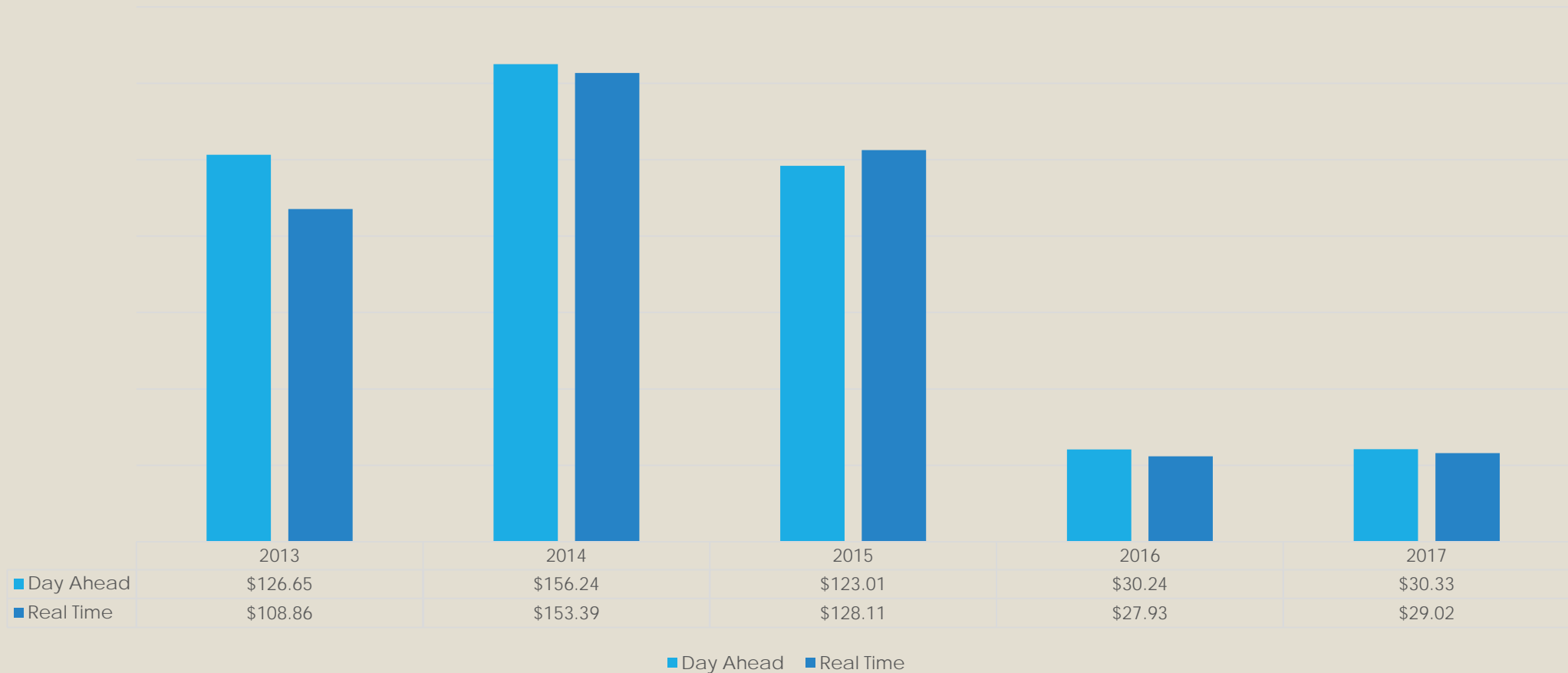
Imbedded Fuel Costs vs. Heating Degree Days

February 2013-2017





Spot Market Prices

February Averages
2013-2017



To: Coleen O'Brien

From:  Maureen McHugh, Jane Parenteau 

Date: April 6, 2017

Subject: Purchase Power Summary – February, 2017

Energy Services Division (ESD) has completed the Purchase Power Summary for the month of February, 2017.

ENERGY

The RMLD's total metered load for the month was 51,014,776 kWh, which is a 6.53% decrease from the February, 2016 figures.

Table 1 is a breakdown by source of the energy purchases.

Table 1

Resource	Amount of Energy (kWh)	Cost of Energy (\$/Mwh)	% of Total Energy	Total \$ Costs	\$ as a %
Millstone #3	3,349,435	\$6.72	6.76%	\$22,514	0.90%
Seabrook	5,337,160	\$6.32	10.77%	\$33,731	1.34%
Stonybrook Intermediate	0	\$0.00	0.00%	\$0	0.00%
Shell Energy	7,472,000	\$59.36	15.08%	\$443,530	17.66%
NYP&A	2,140,208	\$4.92	4.32%	\$10,530	0.42%
EDF	3,049,600	\$61.90	6.15%	\$188,775	7.52%
ISO Interchange	8,649,127	\$41.06	17.45%	\$355,116	14.14%
NEMA Congestion	0	\$0.00	0.00%	\$51,909	2.07%
Coop Resales	9,628	\$120.88	0.02%	\$1,164	0.05%
BP Energy	8,558,400	\$46.78	17.27%	\$400,362	15.94%
Hydro Projects*	1,943,548	\$57.19	3.92%	\$111,145	4.43%
Braintree Watson Unit	62,240	\$747.51	0.13%	\$46,525	1.85%
Saddleback/Jericho Wind	2,462,991	\$100.71	4.97%	\$248,058	9.88%
One Burlington Solar	129,337	\$70.00	0.26%	\$9,054	0.36%
Exelon	6,361,600	\$91.55	12.84%	\$582,387	23.19%
Stonybrook Peaking	26,932	\$242.93	0.05%	\$6,543	0.26%
Monthly Total	49,552,206	\$50.68	100.00%	\$2,511,341	100.00%

*Pepperell, Woronoco, Indian River, Turner Falls, Collins, Pioneer, Hosiery Mills, Summit Hydro

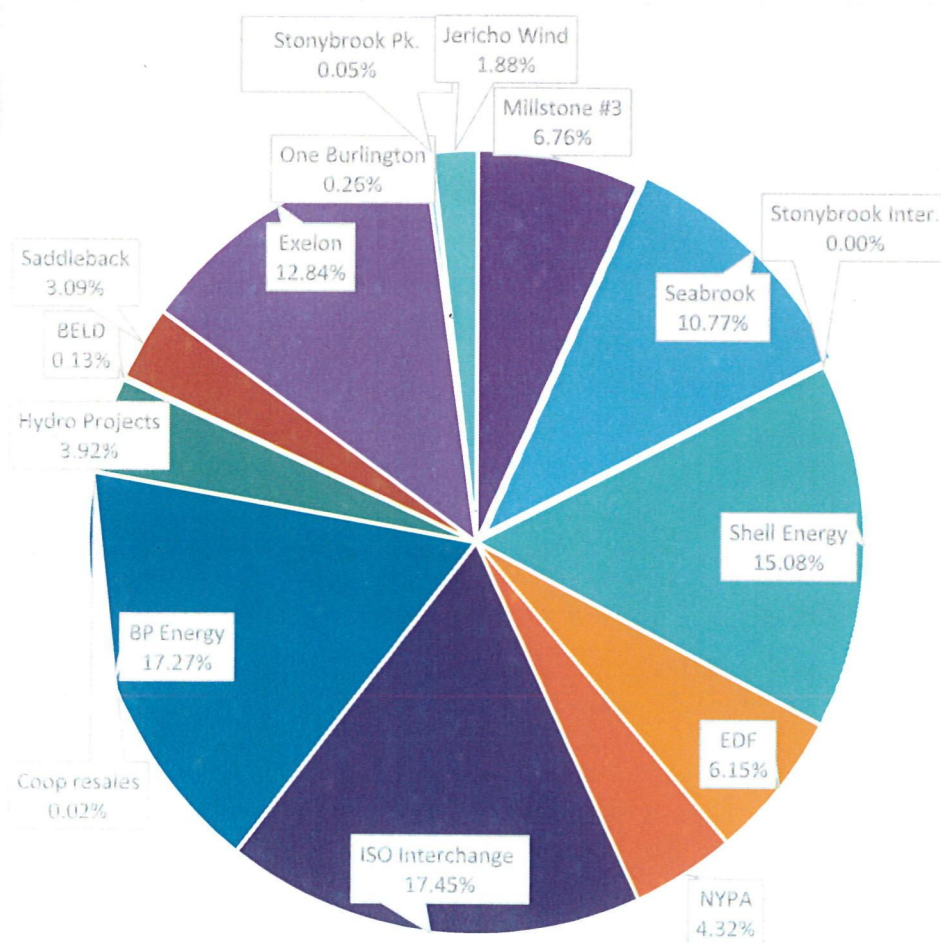
Table 2 breaks down the ISO interchange between the DA LMP Settlement and the RT Net Energy for the month of February, 2017.

Table 2

Resource	Amount of Energy (kWh)	Cost of Energy (\$/Mwh)	% of Total Energy
ISO DA LMP *	15,448,228	\$33.45	30.83%
Settlement			
RT Net Energy **	(6,799,102)	\$23.30	-13.57%
Settlement			
ISO Interchange (subtotal)	8,649,127	\$41.10	17.26%

* Independent System Operator Day-Ahead Locational Marginal Price

FEBRUARY 2017 ENERGY BY RESOURCE



CAPACITY

The RMLD hit a demand of 100,242 kW, which occurred on February 13, at 7 pm. The RMLD's monthly UCAP requirement for February, 2017 was 232,352 kW.

Table 3 shows the sources of capacity that the RMLD utilized to meet its requirements.

Table 3

Source	Amount (kW)	Cost (\$/kW-month)	Total Cost \$	% of Total Cost
Millstone #3	4,950	28.07	\$138,930	9.44%
Seabrook	7,909	22.68	\$179,398	12.20%
Stonybrook Peaking	24,981	1.83	\$45,618	3.10%
Stonybrook CC	42,925	3.39	\$145,651	9.90%
NYPA	0	0.00	\$16,834	1.14%
Hydro Quebec	0	0	-\$27,475	-1.87%
Nextera	60,000	6.15	\$369,000	25.09%
Braintree Watson Unit	0	0.00	\$86,849	5.90%
ISO-NE Supply Auction	91,587	5.64	\$516,152	35.09%
Total	232,352	\$6.33	\$1,470,957	100.00%

Table 4 shows the dollar amounts for energy and capacity per source.

Table 4

Resource	Energy	Capacity	Total cost	% of Total Cost	Amt of Energy (kWh)	Cost of Power (\$/kWh)
Millstone #3	\$22,514	\$138,930	\$161,443	4.05%	3,349,435	0.0482
Seabrook	\$33,731	\$179,398	\$213,129	5.35%	5,337,160	0.0399
Stonybrook Intermediate	\$0	\$145,651	\$145,651	3.66%	-	0.0000
Hydro Quebec	\$0	-\$27,475	-\$27,475	-0.69%	-	0.0000
Shell Energy	\$443,530	\$0	\$443,530	11.14%	7,472,000	0.0594
NextEra/EDF	\$188,775	\$369,000	\$557,775	14.01%	3,049,600	0.1829
* NYPA	\$10,530	\$16,834	\$27,364	0.69%	2,140,208	0.0128
ISO Interchange	\$355,116	\$516,152	\$871,268	21.88%	8,649,127	0.1007
Nema Congestion	\$51,909	\$0	\$51,909	1.30%	-	0.0000
BP Energy	\$400,362	\$0	\$400,362	10.05%	8,558,400	0.0468
* Hydro Projects	\$111,145	\$0	\$111,145	2.79%	2,503,508	0.0444
Braintree Watson Unit	\$46,525	\$86,849	\$133,374	3.35%	62,240	2.1429
* Saddleback/Jericho	\$248,058	\$0	\$248,058	6.23%	2,462,991	0.1007
* One Burlington Solar	\$9,054	\$0	\$9,054	0.23%	129,337	0.0700
Coop Resales	\$1,164	\$0	\$1,164	0.03%	9,628	0.1209
Exelon Energy	\$582,387	\$0	\$582,387	14.62%	6,361,600	0.0915
Stonybrook Peaking	\$6,543	\$45,618	\$52,160	1.31%	26,932	1.9367
Monthly Total	\$2,511,341	\$1,470,957	\$3,982,298	100.00%	50,112,166	0.0795
* Renewable Resources					14.44%	

RENEWABLE ENERGY CERTIFICATES (RECs)

Table 5 shows the amount of banked and projected RECs for the Swift River Hydro Projects through February 2017, as well as their estimated market value.

Table 5
RECs Summary
Period - January 2016 - February 2017

	Banked RECs	Projected RECs	Total RECs	Est. Dollars
Woronoco	0	10,715	10,715	\$198,228
Pepperell	0	7,455	7,455	\$137,918
Indian River	0	2,103	2,103	\$38,906
Turners Falls	0	1,135	1,135	\$20,998
Saddleback	0	13,678	13,678	\$253,043
Jericho	0	6,709	6,709	\$124,117
Sub total	0	41,795	41,795	773,208
RECs Sold	\$0		0	\$0
Grand Total	0	41,795	41,795	\$773,208

TRANSMISSION

The RMLD's total transmission costs for the month of February, 2017 were \$1,023,048. This is an increase of .35% from the January transmission cost of \$1,019,500. In February, 2016 the transmission costs were \$996,019.

Table 6

	Current Month	Last Month	Last Year
Peak Demand (kW)	100,242	105,335	104,312
Energy (kWh)	50,112,166	58,270,115	54,713,763
Energy (\$)	\$2,511,341	\$2,911,543	\$3,056,024
Capacity (\$)	\$1,470,957	\$1,477,200	\$1,491,572
Transmission(\$)	\$1,023,048	\$1,019,500	\$996,019
Total	\$5,005,347	\$5,408,243	\$5,543,616

ENGINEERING & OPERATIONS REPORT
FEBRUARY 2017
ATTACHMENT 3

READING MUNICIPAL LIGHT DEPARTMENT

FOR PERIOD ENDING FEBRUARY 2017

PROJ	DESCRIPTION	TOWN	ACTUAL COST	YTD ADDITIONS	ANNUAL BUDGET	REMAINING BALANCE
CONSTRUCTION:						
106	Underground Facilities Upgrades (URD's, Manholes, etc)	ALL		264,915	149,965	(114,950)
107	13.8kV Upgrade (Step-down areas, etc.)	ALL	-	4,909	105,748	100,839
	SUB-TOTAL		-	269,824	255,713	(14,111)
STATION UPGRADES:						
108	Station 4 (GAW) Relay Replacement Project	R	10,500	113,209	48,904	(64,305)
109	Station 4 35kV Potential Transformer Replacement	R		57	-	(57)
110	4W9 Getaway Replacement-Station 4	R	104,513	104,513	234,747	130,234
111	Substation Equipment Upgrade (all)	ALL		-	74,590	74,590
113	Station 4 (GAW) Battery Bank Upgrade	R		24,000	17,037	(6,963)
120	Station 4 - Relay/SCADA Integration for Bus A&B	R		24,261	70,308	46,047
130	Station 3 - Remote Terminal Unit (RTU) Replacement	NR		-	39,330	39,330
133	Station 3 - Relay Upgrades and SCADA Integration	NR	1,642	250,637	252,225	1,588
139	Station 5 - LTC Control Replacement	W	137	6,324	41,543	35,219
140	Substation Grounding Equipment Upgrade	ALL		-	20,671	20,671
	SUB-TOTAL		116,792	523,001	799,355	276,354
NEW CUSTOMER SERVICES: 141-146						
	New Service Installations (Commercial / Industrial)	ALL	10,383	80,126	139,570	59,444
	SUB-TOTAL		10,383	80,126	139,570	59,444
ROUTINE CONSTRUCTION:						
		ALL	109,590	1,171,604	1,012,962	(158,642)
SPECIAL PROJECTS / CAPITAL PURCHASES:						
100	Distributed Gas Generation (Pilot FY16-17)	ALL	5,774	92,081	2,720,409	2,628,328
102	Padmount Switchgear Upgrade at Industrial Parks	W		2,286	194,518	192,232
103	Grid Modernization and Optmization	ALL	18,107	222,139	284,000	61,861
105	New Wilmington Sub-Station	W		-	250,000	250,000
112	AMI Mesh Network Expansion	ALL		125,394	220,021	94,627
115	Fault Indicators	ALL		1,340	25,000	23,660
116	Transformers and Capacitors	ALL		9,102	668,000	658,898
117	Meter Purchases	ALL		28,236	80,000	51,764
125	GIS	ALL	45,182	179,777	360,000	180,223
126	Communication Equipment (Fiber Optic)	ALL		7,064	69,173	62,109
131	LED Street Light Implementation	ALL	54,855	485,126	804,070	318,944
134	Substation Test Equipment	ALL		14,270	30,000	15,730
135	Analog Devices Cap Bank Upgrade	W	548	548	54,188	53,640
136	Voltage Data Recorders	ALL		-	25,000	25,000
	SUB-TOTAL		124,466	1,167,363	5,784,379	4,617,016
OTHER CAPITAL PROJECTS:						
96	Control Center Modifications	ALL		-	100,000	100,000
97	HVAC Roof Units - Garage	R		44,484	-	(44,484)
98	Carpet Upgrade	R	2,520	10,950	71,653	60,703
99	Electric Vehicle Supply Equipment	ALL		1,303	10,000	8,697
104	RMLD Lighting (LED) Upgrade			-	25,000	25,000
118	Rolling Stock Replacement	ALL		53,083	310,000	256,917
119	Security Upgrades All Sites	ALL		34,684	5,000	(29,684)
121	HVAC System Upgrade - 230 Ash Street	R		519,550	500,000	(19,550)
127	Hardware Upgrades	ALL	3,257	66,278	112,065	45,787
128	Software and Licensing	ALL	23,439	52,626	230,519	177,894
129	Master Facilities Site Plan	R		-	50,000	50,000
	SUB-TOTAL		29,216	782,957	1,414,237	631,280
TOTAL CAPITAL BUDGET			\$ 390,448	\$ 3,994,875	\$ 9,406,216	\$ 5,411,341



Engineering & Operations Report

RMLD Board of Commissioners Meeting

April 20, 2017

February 2017 Reporting Period

Hamid Jaffari, Director of Engineering & Operations

Capital Improvement Projects

Construction Projects:		% Complete Status	FEB	YTD
100	Distributed Gas Generator Pilot	15%	\$5,774	\$92,081
108	Relay Replacement – Station 4	100%	\$10,500	\$113,209
110	4W9 Getaway Replacement – Station 4 <ul style="list-style-type: none"> Materials received. 	n/a	\$104,513	\$104,513
133	Station 3: Relay Upgrades and SCADA Integration	20%	\$1,642	\$250,637
139	Station 5: LTC Control Replacement	20%	\$137	\$6,324
	Service Installations – Residential and Commercial: This item includes new or upgraded overhead and underground services.	On-going	\$10,383	\$80,126
103	Grid Modernization and Optimization	On-Going	\$18,107	\$222,139
125	GIS	55%	\$45,182	\$179,777
131	LED Street Light Conversion	62%	\$54,855	\$485,126

Routine Construction

	FEB	YTD
Pole Setting/Transfers	\$47,139	\$250,414
Overhead/Underground	\$10,413	\$275,452
Projects Assigned as Required <ul style="list-style-type: none"> Industrial Way, Wilmington AT&T Appl, Wilmington Lighttower, 600 Research Drive, Wilmington 	\$16,276	\$149,547
Pole Damage/Knockdowns - Some Reimbursable <ul style="list-style-type: none"> Work was done to repair or replace seven (7) poles. 	\$8,051	\$84,337
Station Group	\$97	\$168,116
Hazmat/Oil Spills <ul style="list-style-type: none"> Concord Street, North Reading 	\$500	\$5,796
Porcelain Cutout Replacement Program	-	-
Lighting (Street Light Connections)	\$4,065	\$19,508
Storm Trouble	\$13,874	\$31,855
Underground Subdivisions (new construction)	-	\$45,828
Animal Guard Installation	\$259	\$1,054
Miscellaneous Capital Costs	\$8,916	\$139,697
TOTAL:	<u>\$109,591</u>	<u>\$1,171,604</u>

Routine Maintenance

► Transformer Replacement (through February 2017)

Pad mount 25.65% Overhead 16.69%

► Pole Inspection (as of 4/10/17)

224 poles have been replaced 126 of 224 transfers have been completed

► Quarterly Inspection of Feeders (through March 2017)

Inspected circuits (Jan-Mar): 3W5, 3W6, 3W7, 3W8, 3W13, 3W14, 3W15, 3W18, 4W4, 4W5, 4W6, 4W7, 4W9, 4W23, 4W24, 5W4, 5W5, 5W8, 5W9, 4P9, 4P2

► Manhole Inspection (through February 2017)

961 of 1,237 manholes have been inspected.

► Porcelain Cutout Replacements (through February 2017)

91% complete 253 remaining to be replaced

► Tree Trimming

February: 75 spans trimmed YTD: 831 spans trimmed

► Substation Maintenance

Infrared Scanning – February complete - no hot spots found

Double Poles

➤ Ownership: 16,000 (approximately)

50% RMLD

50% Verizon

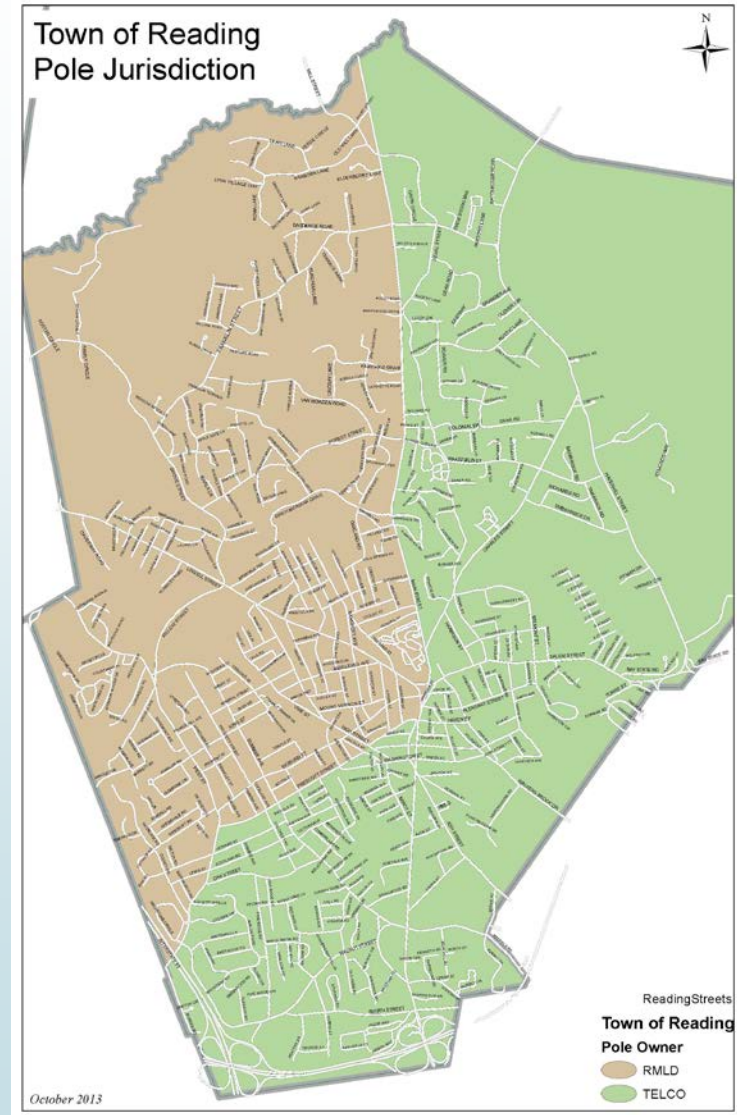
➤ Custodial:

Reading – split (see map) →

North Reading – RMLD

Lynnfield – Verizon

Wilmington - Verizon



NJUNS

"Next to Go" as of April 7, 2017

LYNNFIELD

NTG Member and JobType	Count of Ticket Number
LFLDFD	3
Lynnfield Fire Department TRANSFER	3
RMLD	3
Reading Municipal Light Department TRANSFER	3
VZNESEA	13
Verizon TRANSFER	7
PULL POLE	6
(blank)	
Grand Total	19

READING

NTG Member and JobType	Count of Ticket Number
CMCTNR	9
Comcast TRANSFER	9
LTFMA	1
Lighttower Fiber Networks TRANSFER	1
NP3PMA	9
Non-participating 3rd Party Attacher - Massachusetts TRANSFER	9
RDNGFD	8
Reading Fire Department TRANSFER	8
RMLD	50
Reading Municipal Light Department TRANSFER	23
PULL POLE	27
VZNESEA	115
Verizon TRANSFER	111
PULL POLE	4
(blank)	
Grand Total	192

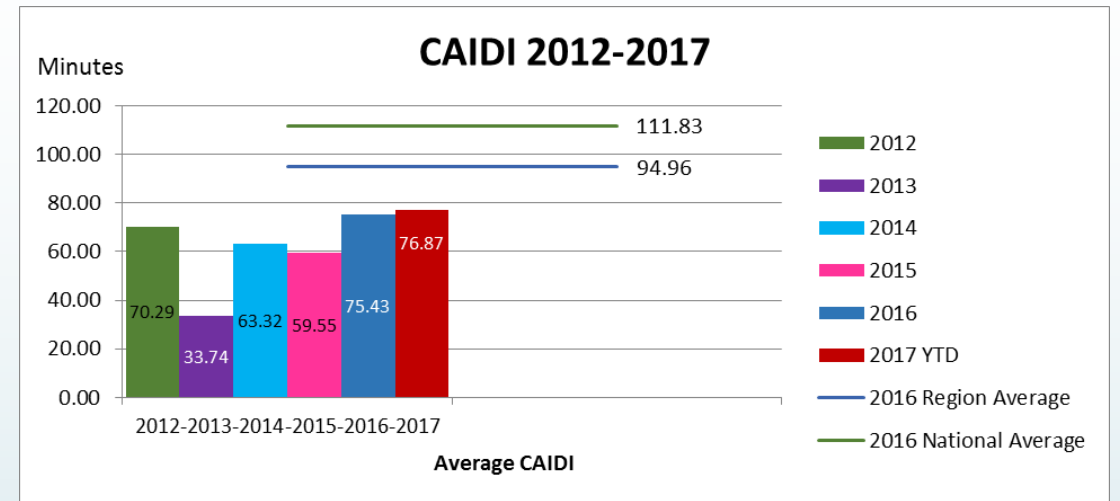
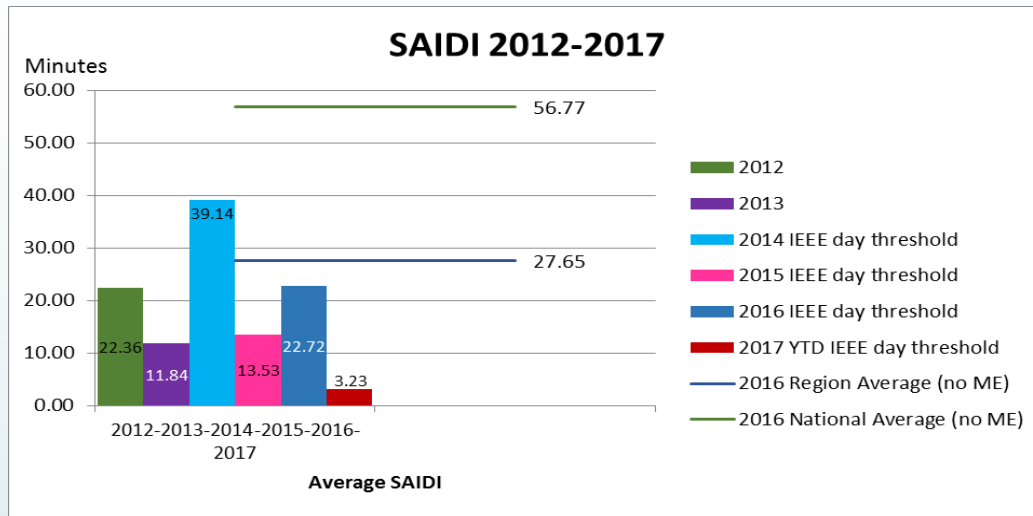
NORTH READING

NTG Member and JobType	Count of Ticket Number
CMCTNR	3
Comcast TRANSFER	3
NGMA	1
National Grid TRANSFER	1
NP3PMA	1
Non-participating 3rd Party Attacher - Massachusetts TRANSFER	1
NRDGFDD	44
North Reading Fire Department TRANSFER	44
RMLD	119
Reading Municipal Light Department TRANSFER	13
PULL POLE	106
VZNEDR	23
Verizon TRANSFER	15
PULL POLE	8
(blank)	
Grand Total	191

WILMINGTON

NTG Member and JobType	Count of Ticket Number
CMCTNR	16
Comcast TRANSFER	16
NP3PMA	7
Non-participating 3rd Party Attacher - Massachusetts TRANSFER	7
NPFAMA	3
Non-participating Fire Alarms - Massachusetts TRANSFER	3
RMLD	31
Reading Municipal Light Department TRANSFER	26
PULL POLE	4
INSTL GUY	1
VZBMA	1
Verizon Business TRANSFER	1
VZNEDR	72
Verizon TRANSFER	55
ATTACH	1
PULL POLE	16
WLMFIB	3
Town of Wilmington TRANSFER	3
WMGNFD	84
Wilmington Fire Department TRANSFER	84
(blank)	
Grand Total	217

RMLD Reliability Indices

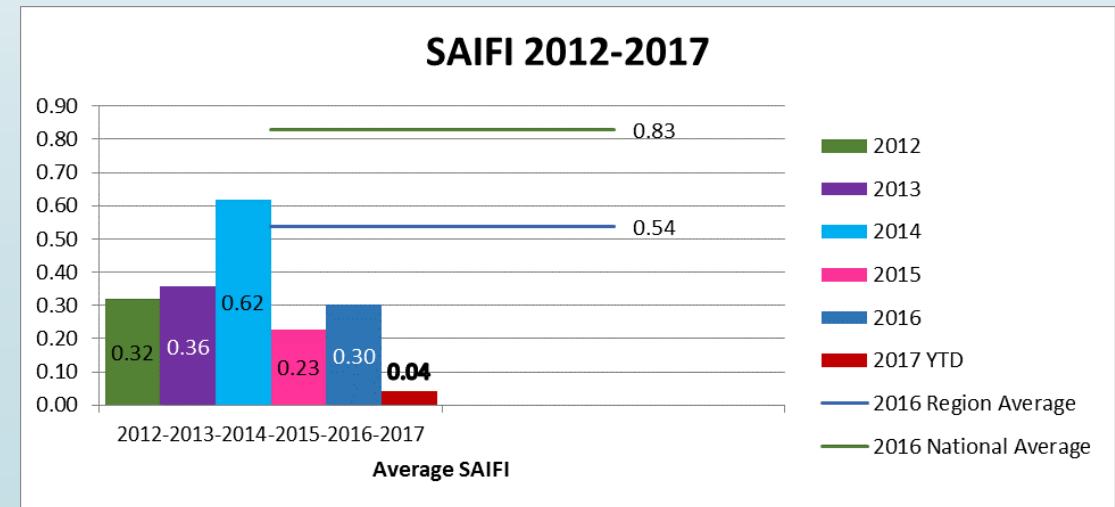


$$SAIDI \text{ (Minutes)} = \frac{\text{Total Duration of Customer Interruptions}}{\text{Total Number of Customers Served}}$$

$$CAIDI \text{ (Minutes)} = \frac{\text{Total Duration of Customer Interruptions}}{\text{Total Number of Customers Interruptions}}$$

Note: The major event (ME) threshold allows a utility to remove outages that exceed the IEEE 2.5 beta threshold for events. These events could be severe weather, which can lead to unusually long outages in comparison to your distribution system's typical outage.

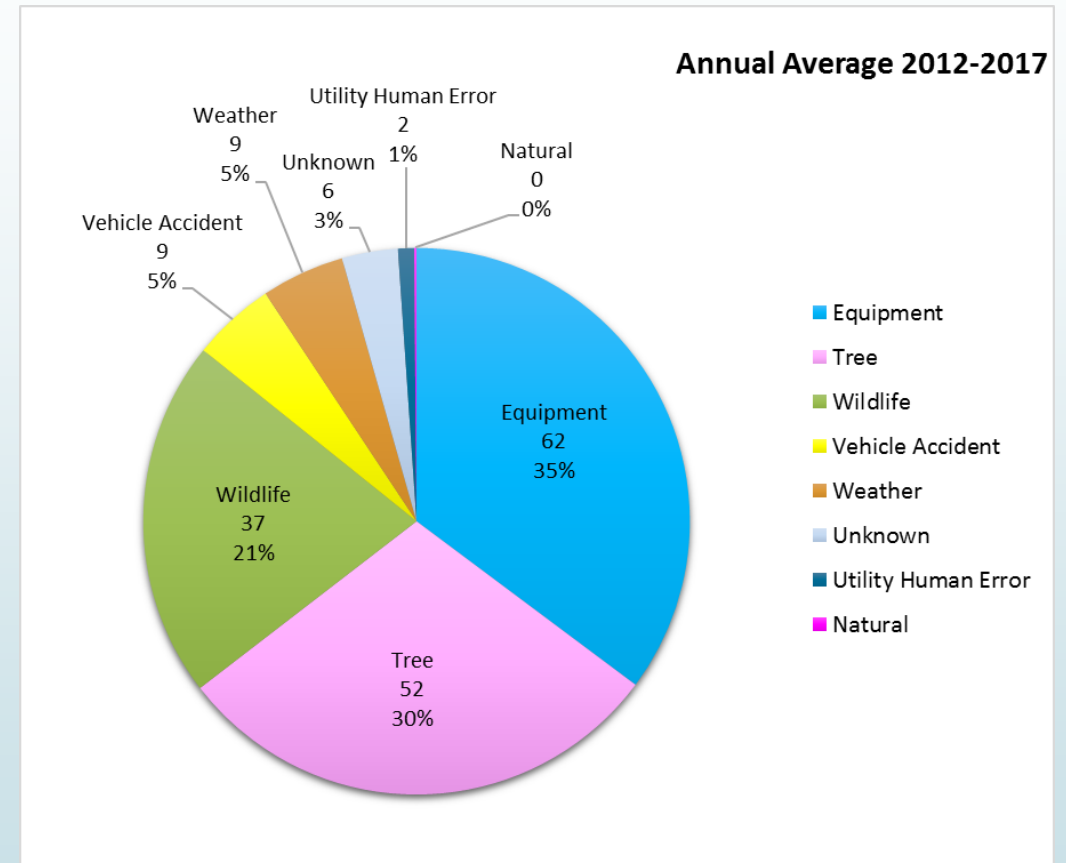
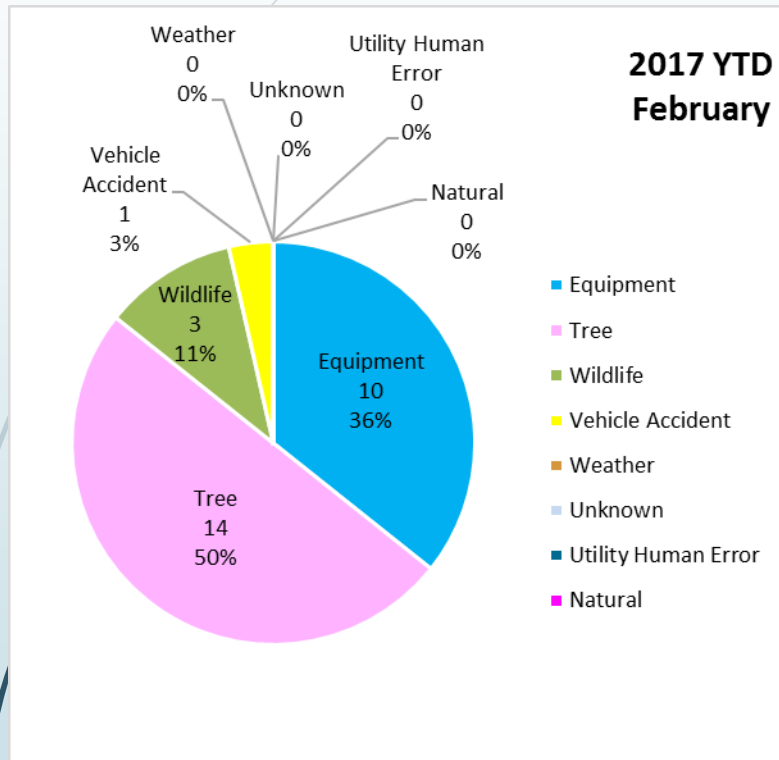
$$SAIFI = \frac{\text{Total Number of Customer Interruptions}}{\text{Total Number of Customers Served}}$$



Note: Regional and national averages have been updated for 2016.

Outages Causes

Outages Causes YTD (from eReliability website)



Questions ?



**RMLD PROCUREMENT REQUEST
REQUIRING BOARD APPROVAL
ATTACHMENT 4**



Reading Municipal Light Department
RELIABLE POWER FOR GENERATIONS

230 Ash Street, P.O. Box 150
Reading, MA 01867-0250

April 14, 2017

Town of Reading Municipal Light Board

Subject: IFB 2017-33 Hourly Rates for Overhead Line Construction and Maintenance Work as needed, Storm Management Line Construction and Restoration

Pursuant to M.G.L c. 30 § 39M, on March 22, 2017, an invitation for bid was placed as a legal notice in the Middlesex East Section of the Daily Times Chronicle, on COMMBUYS, and in the Central Register requesting sealed bids for Rates for Overhead Line Construction and Maintenance Work as needed, Storm Management Line Construction and Restoration.

An invitation for bid was sent to the following thirty companies:

ABM Electrical Power Services, LLC	Harlan Electrical Construction	Northeast Line Construction Corp.
Albanese Brothers, Inc.	Hawkeye - Elecnor Group	One Source Power
Dagle Electrical Construction Corp.	Hi Volt Line Construction & Maintenance	ONVIA
ElecComm Corp.	IB Abel Inc.	Power Line Contractors
Evans Line Construction Co.	K.B. Aruda Construction, Inc.	Prime Vendor, Inc.
Evermore Light and Power	Mass Bay Electrical Corp.	Project Dog
Fischbach & Moore	Matrix NAC, LLC	Shay Enterprise
GEOD Consulting	Maverick Construction	Spencer Contracting
Grattan Line Construction Corp.	McDonough Electric Construction	Thirault LLC
Hamilton Electric Co., Inc.	MEC Power Group	Utility Service & Assistance, Inc.

Sealed bids were received from two companies: Powerline Contractors, Inc., and Matrix NAC, LLC.

The sealed bids were publicly opened and read aloud at 11:00 a.m. on April 6, 2017, in the Town of Reading Municipal Light Department's General Manager's Conference Room, 230 Ash Street, Reading, Massachusetts.

RMLD



Reading Municipal Light Department

RELIABLE POWER FOR GENERATIONS

230 Ash Street, P.O. Box 150
Reading, MA 01867-0250

The bids were reviewed, analyzed and evaluated by staff and recommended to the General Manager.

Move that bid 2017-33 for: Hourly Rates for Overhead Line Construction and Maintenance Work As Needed, Storm Management Line Construction and Restoration be awarded to: Power Line Contractors, Inc., as the lowest responsible and eligible bidder on the recommendation of the General Manager.

This project will be paid from various operating and capital accounts as work dictates.

Stephen W. DeFerrari

Hamid Jaffari

Coleen O'Brien

**Hourly Rates for Overhead Line Construction and Maintenance Work as needed, Storm Management Line Construction and Restoration
IFB 2017-33**

Bidder:	Power Line Contractors, Inc.			Matrix NAC, LLC		
	YEAR 1 <i>on or about May 15, 2017 - May 14, 2018</i>	YEAR 2 <i>on or about May 15, 2018 - May 14, 2019</i>	YEAR 3 <i>on or about May 15, 2019 - May 14, 2020</i>	YEAR 1 <i>on or about May 15, 2017 - May 14, 2018</i>	YEAR 2 <i>on or about May 15, 2018 - May 14, 2019</i>	YEAR 3 <i>on or about May 15, 2019 - May 14, 2020</i>
Crew Rate - Regular Hourly						
Leader Lineworker	130.00	132.00	134.00	103.88	106.48	109.34
First Class Lineworker/Journeyman	120.00	122.00	124.00	98.65	101.15	103.87
Material Handler (Bucket Truck)/Digger Derrick	30.00	32.00	34.00	103.00	106.61	110.34
Crew Rate Per Hour:	\$280.00	\$286.00	\$292.00	\$305.53	\$314.24	\$323.55
Crew Rate - Emergency Hourly (Storms)						
Leader Lineworker	231.00	233.00	235.00	121.86	124.91	128.27
First Class Lineworker/Journeyman	211.00	213.00	215.00	115.72	118.66	121.84
Material Handler (Bucket Truck)/Digger Derrick	55.00	57.00	59.00	103.00	106.61	110.34
Crew Rate Per Hour:	\$497.00	\$503.00	\$509.00	\$340.58	\$350.18	\$360.45
Annual Cost - Regular Time (estimate)						
# of Hours Per Year (estimate)	800	800	800	800	800	800
Total Estimate Per Year (hours x rate):	\$224,000	\$228,800	\$233,600	\$244,424	\$251,392	\$258,840
Annual Cost - Emergency (estimate)						
# of Hours Per Year (estimate)	40	40	40	40	40	40
Total Estimate Per Year (hours x rate):	\$19,880	\$20,120	\$20,360	\$13,623	\$14,007	\$14,418
Total (Regular and Emergency) Combined						
Annual Total:	\$243,880	\$248,920	\$253,960	\$258,047	\$265,399	\$273,258
Three-Year Total:	\$746,760			\$796,704		

**BOARD MATERIAL AVAILABLE
BUT NOT DISCUSSED**

From: [Tracy Schultz](#)
To: [RMLD Board Members Group](#)
Cc: [Jeanne Foti](#)
Subject: AP Warrants and Payroll
Date: Tuesday, April 11, 2017 12:42:00 PM

Good afternoon,

There were no Account Payable Warrant questions for the following dates:
March 17, March 24, March 31, and April 7.

There were no Payroll questions for the following dates:
March 20 and April 3.

This message will be included in the Board Packet for the RMLD Board Meeting on
Thursday, April 20, 2017.

Tracy Schultz
Executive Assistant
Reading Municipal Light Department
230 Ash Street. Reading. MA. 01867
Tel: 781.942.6489

TOWN OF READING MUNICIPAL LIGHT DEPARTMENT
 RATE COMPARISONS READING & SURROUNDING TOWNS

April-17

	RESIDENTIAL 750 kWh's	RESIDENTIAL-TOU 1500 kWh's 75/25 Split	RES. HOT WATER 1000 kWh's	COMMERCIAL 7,300 kWh's 25.000 kW Demand	SMALL COMMERCIAL 1,080 kWh's 10.000 kW Demand	SCHOOL RATE 35000 kWh's 130.5 kW Demand	INDUSTRIAL - TOU 109,500 kWh's 250.000 kW Demand 80/20 Split
READING MUNICIPAL LIGHT DEPT.							
TOTAL BILL	\$109.93	\$188.38	\$133.61	\$986.35	\$196.12	\$4,579.40	\$731,263.56
PER KWH CHARGE	\$0.14657	\$0.12559	\$0.13361	\$0.13512	\$0.18159	\$0.13084	\$0.10629
NATIONAL GRID							
TOTAL BILL	\$152.35	\$359.59	\$188.82	\$2,053.27	\$312.29	\$5,877.72	\$1,646,998.81
PER KWH CHARGE	\$0.20313	\$0.23972	\$0.18882	\$0.28127	\$0.28916	\$0.16793	\$0.23940
% DIFFERENCE	38.59%	90.88%	41.32%	108.17%	59.24%	28.35%	125.23%
EVERSOURCE(NSTAR)							
TOTAL BILL	\$143.50	\$253.51	\$189.19	\$1,233.41	\$203.03	\$6,692.17	\$1,095,603.32
PER KWH CHARGE	\$0.19133	\$0.16901	\$0.18919	\$0.16896	\$0.18799	\$0.19120	\$0.15925
% DIFFERENCE	30.54%	34.57%	41.60%	25.05%	3.53%	46.14%	49.82%
PEABODY MUNICIPAL LIGHT PLANT							
TOTAL BILL	\$88.38	\$172.43	\$117.07	\$952.31	\$151.07	\$4,709.23	\$638,286.46
PER KWH CHARGE	\$0.11784	\$0.11495	\$0.11707	\$0.13045	\$0.13988	\$0.13455	\$0.09278
% DIFFERENCE	-19.60%	-8.47%	-12.38%	-3.45%	-22.97%	2.84%	-12.71%
MIDDLETON MUNICIPAL LIGHT DEPT.							
TOTAL BILL	\$98.74	\$201.66	\$132.75	\$959.51	\$168.44	\$4,762.93	\$807,171.40
PER KWH CHARGE	\$0.13165	\$0.13444	\$0.13275	\$0.13144	\$0.15596	\$0.13608	\$0.11733
% DIFFERENCE	-10.18%	7.05%	-0.65%	-2.72%	-14.12%	4.01%	10.38%
WAKEFIELD MUNICIPAL LIGHT DEPT.							
TOTAL BILL	\$117.36	\$217.17	\$146.88	\$1,111.54	\$178.18	\$5,210.58	\$869,964.30
PER KWH CHARGE	\$0.15648	\$0.14478	\$0.14688	\$0.15227	\$0.16499	\$0.14887	\$0.12646
% DIFFERENCE	6.76%	15.28%	9.93%	12.69%	-9.14%	13.78%	18.97%