RMLD
Reading Municipal Light Department
RELIABLE POWER FOR GENERATIONS

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

Tel: (781) 944-1340
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AGENDA

REGULAR SESSION

READING MUNICIPAL LIGHT DEPARTMENT
CITIZENS' ADVISORY BOARD (CAB) MEETING

TUESDAY, OCTOBER 9, 2018

6:30 pm

North Reading Town Hall
235 North Street, Room 5
North Reading, MA 01864-1298

1. Call Meeting to Order – D. Kelley, Chair

2. CY19 Budget Presentation
   - Capital Budget – H. Jaffari, Director of Engineering & Operations
   - Operating Budget – W. Markiewicz, Director of Business, Finance & Technology

   Suggested Motion: Move that the Citizens' Advisory Board recommend to the RMLD Board of Commissioners the Calendar Year 2019 Operating Budget with a Net Income of $3,529,582 as presented.

   Suggested Motion: Move that the Citizens' Advisory Board recommend to the RMLD Board of Commissioners the Calendar Year 2019 Capital Budget in the amount $7,804,373 as presented. Any significant changes are to be submitted to the CAB for review and recommendation.

3. Next Meeting – D. Kelley, Chair

4. Adjournment – D. Kelley, Chair

This Agenda has been prepared in advance and does not necessarily include all matters which may be taken up at this meeting.

READING MUNICIPAL LIGHT DEPARTMENT

CY19 BUDGET

September 28, 2018

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CY19 OPERATING BUDGET

Mission Statement

RMLD is committed to providing excellent customer service, including competitively priced electricity through due diligence of power supply, risk management, system reliability, safety, and overall business efficiency.

Vision Statement

RMLD has transitioned from a reactive to a proactive approach in all aspects of the utility business to ensure efficiency, safety, and competitive rates. The Be Efficient – Get Greener – Go Paperless, Peak Performance, and Shred the Peak, campaigns have been integrated into a core business and include sustained procedural changes in the areas of long-term planning, technology road mapping, talent managing, customer communication, system maintenance and power supply portfolio balancing.

SYSTEM PROFILE

(based on FY18)

SERVICE TERRITORY	51 square miles serving Reading, North Reading, Wilmington, and part of Lynnfield
TOTAL OPERATING REVENUES	$97,206,743
POWER PURCHASED	674,894,793 kWh
NUMBER OF CUSTOMERS/ ACTIVE METERS	29,775
ANNUAL PEAK DEMAND	145,294 kW on July 19, 2017, at 5:00 pm
ANNUAL SALES	665,031,434 kWh
PLANT VALUE	$150,085,144 (Gross) $78,275,207 (Net)
SUPPLY VOLTAGE	115 kV
SUPPLY CAPACITY	Station 4: (3) 60 MVA Transformers (2) 35 MVA Transformers – feeds Station 5 250 MVA Connected, 190 MVA Firm Station 3: (2) 60 MVA Transformers 120 MVA Connected, 60 MVA Firm
DISTRIBUTION SYSTEM VOLTAGE	13,800 volt wye 4,160 volt wye
OVERHEAD PRIMARY LINES	All 336 miles
UNDERGROUND PRIMARY LINES	All 144 miles
DISTRIBUTION TRANSFORMERS	4,026 transformers – 310 MVA Capacity
STATION TRANSFORMER CAPACITY	370 MVA Capacity

UTILITY POLES	17,914 poles *Ownership*: 50% Verizon, 50% RMLD *Custodial By Town:* North Reading – RMLD Lynnfield – Verizon Reading • east of Main Street – Verizon • west of Main Street, east of West Street, south of Prescott Street – Verizon • west of West Street – RMLD • west of Main Street, north of Prescott Street – RMLD Wilmington • all poles with 35 kV sub-transmission circuits, and Concord Street – RMLD • all other locations in Wilmington – Verizon
APPLICATION SOFTWARE	
	Great Plains/Cogsdale Windows Server 2016, 2012, 2008, Microsoft SQL Office 365 E3 ESRI GIS VMware Windows 7, 8, 8.1, 10 SharePoint WindMil LightTable PoleForeman SpryMobile Survalent Futura
CONTACT INFORMATION	
Address:	230 Ash Street Reading, MA 01867
Telephone:	781-942-6598
Fax:	781-942-2409
Website:	www.rmld.com
Office Hours	8:00 am - 4:30 pm Monday through Friday
KEY PERSONNEL	
General Manager	Coleen O'Brien email: cobrien@rmld.com
Director of Business, Finance & Technology	Wendy Markiewicz email: wmarkiewicz@rmld.com
Director of Engineering and Operations	Hamid Jaffari email: hjaffari@rmld.com
GOVERNING BODY	
	David Hennessy Thomas O'Rourke Philip B. Pacino John Stempeck David Talbot
Number of Employees	74
Year Founded	1894

9/28/2018

PLANNED PROGRAMS

READING MUNICIPAL LIGHT DEPARTMENT
Capital Improvements CY19 thru CY24
$ Shown in thousands

LINE #	Page #	Proj #	FERC #	PROJECT NAME	FY19 Budget	FY19 Jul 2018-Dec 2018 Estimate	CY19 PLAN EST.	CY20	CY21	CY22	CY23	CY24	BRIEF DESCRIPTION
1	n/a	129	361	Master Facilities Site Plan (ON-HOLD)									Town economic development plan impact. Master-hold. Evaluate maintenance only.
2	11	104	361	RMLD Lighting (LED) Upgrade Program	100		200						Upgrade Ash Street and other RMLD facilities including substations with new interior/exterior LED fixtures. A Designer will perform and energy audit and provide guidance with a Bid Spec. Installation of fixtures by an electrical contractor.
3	13	140	390	Parking Lot Upgrade - 230 Ash Street	130		230						Reconfigure parking lot at 230 Ash Street to include accommodations for future connection for EV charging stations.
4	15	095	361	Building Upgrades			125	230	75	125	50	50	Lobby insulation; Station 4 AC; OSHA Compliance Study
5	17	098	391	Office Upgrades -230 Ash Street	30	32	120	30	30	30	30	30	Relocate Purchasing Division. Design and construct new purchasing offices. Reconfigure Facilities Division: design and construct new Facilities conference room.
6	19	119	384	Security Upgrades All Sites	30	30	30	30	30	30	30	30	Upgrades to existing Access Control equipment and alarm monitoring. Increase number of surveillance cameras at Substations. Repair perimeter fencing at all RMLD Properties. These security upgrades will be implemented over the next several years to always be incorporating the latest technologies and methodologies.
7	21	118	392	Rolling Stock Replacement (vehicles, trailers, fork trucks)	275		325	300	300	300	300	300	Scheduled vehicle replacement based on Fleet Assessment. FY19 (carry-over): forklift, light duty pick-up, underground utility vehicle. All vehicles will be delivered in CY19.
8	25	099	392	Electric Vehicle Supply Equipment (EVSE)	10		60	60	60	60	60	100	Two electric charging station per town in the service area. Research grant options. CY24 install 3 charging station if popularity increases revenue.
9				**DEMAND MANAGEMENT**									
10	27	101	363	Battery Storage Unit at Station 3	100		20						5MW battery storage at Station 3. Substation integration into battery unit.
11	29	127	382	Hardware Upgrades	125	49	78	119	119	119	119	119	General hardware purchases, wireless internal network configuration.
12	31	128	383	Software and Licensing	425	174	405	239	239	239	239	239	General software purchases/custom programming. Substation Asset Management software, work order management system, etc.
13	n/a	109	366	35kV UG Cable Upgrade at Station 4, Station 5 and RR ROW	252					252	322		**Postponed** pending new Wilmington substation.
14	34	102	367	Pad-mount Switchgear Upgrade at Industrial Parks	436	262	436	449	449	449	180		Starting in FY18, replace all 15 kV pad-mounted switchgear at industrial parks (i.e., River Park Drive, Jonspin Road, Haven Street, etc.) There are 29 switches system-wide.
15	36	103		**GRID MODERNIZATION & OPTIMIZATION**									**Fifteen-year plan to implement Technology Road Map for grid efficiency, reduction of losses, etc.**
			365	*Scada- Mate Switches*	*301*	*118*	*267*	*275*	*283*	*292*	*300*	*309*	4 switches/year plus IntelliTeam licenses
			365	*IntelliRupter®*	*135*	*74*	*125*	*128*	*132*	*136*	*140*	*144*	2 switches/year plus IntelliTeam licenses
			383	*SCADA Upgrade*	*21*								Software upgrade
			383	*CapBank Automation*	*66*	*33*	*66*	*30*	*30*	*30*	*30*	*30*	Adding feeder cap banks and making them SCADA controlled
			383	*Software Integration*	*14*	*7*	*14*	*15*	*20*	*20*	*20*	*20*	Integration of AMI/Scada-Mate switches/OMS
			383	*Outage Management System (OMS)*		*26*							Outage Management System and supplemental modules to automate outage response and customer/public communication during outage events.
			383	*OMS Module: IVR*	*138*	*38*	*52*						IVR in progress in FY19 - scheduled for completion in CY19.
			383	*OMS Module: Crew Management*			*60*						
			383	*OMS Module: Power Factor Correction*				*50*					
16	43	105		**NEW WILMINGTON SUBSTATION**									
			360	Purchase Land in Wilmington	151	511							Land purchase, land appraisals, environmental permitting.
			362/ 367	Wilmington Substation Construction & Commissioning			69	4,473	4,738				Conceptual design of substation and getaway, permitting. Estimated Total Cost: $9.8m ($81k spent through FY18)
17	n/a	n/a	364/ 365	Ballardvale Street, Wilmington - Pole Line Upgrade	225								**No Longer Necessary** due to anticipated location of Wilmington Substation. Previously budgeted FY19-20.
18	52	124	364/ 365	MA-125 Pole Line Installation for New Wilmington Substation		5	5	613					This project covers an estimated 3,000 foot pole line that will span MA-125 from Ballardvale Street to Andover Street, which will be used for riser pole getaways from the proposed Wilmington substation, and will interconnect the new substation to RMLD's existing overhead distribution system.
19	n/a	TBD	365	Distribution Improvements Associated with New Wilmington Substation					300	300			The proposed Wilmington substation's main objective will be to feed the existing Station 5 circuits. The new station will be designed for growth of load on Station 5 circuits, and will provide capacity relief to Stations 3 and 4. This line item will account for distribution improvements to provide load relief to Stations 3 and 4.

READING MUNICIPAL LIGHT DEPARTMENT
Capital Improvements CY19 thru CY24
$ Shown in thousands

LINE #	Page #	Proj #	FERC #	PROJECT NAME	FY19 Budget	FY19 Jul 2018-Dec 2018 Estimate	CY19 PLAN EST.	CY20	CY21	CY22	CY23	CY24	BRIEF DESCRIPTION
20	45	TBD	364/365	Force Account (MassDOT): Main & Hopkins, R	**225**		225						Mass DOT project to widen Main Street and install traffic lights.
21	54	120	367	Underground Line Extension, Marion Street, W			102						Extend underground line (2,050 feet) on Marion Street in Wilmington to meet with three-phase URD.
22	56	121	365	5W5 Andover Access Road Upgrade, W			89						Upgrade 1,000 feet of open wire primary to 556 AL spacer to improve reliability of 5W5 cable between Andover Street and Salem Street along I-93.
23	58	130	397	211-503 and 211-504 Fiber Line Extension to Substation 4			534						Fiber to support NPCC Directory 1, relay protection upgrades.
24				**GETAWAY REPLACEMENTS**									
25	46	122	364/367	4W5/4W12 Getaway Improvements	152	142	117						Station 4: Improvements to result in added capacity to 4W5/4W12 and all south-side circuits at Station 4.
26	48	132	364/367	4W6 Getaway Replacement	157		157						Station 4: Upgrade approximately 1,700 circuit feet of UG cable on West Street, R to 750 mcm cu for increased reliability and capacity per Booth Reliability Study recommendations.
27	50	135	364/367	4W16 Getaway Replacement	206		206						Station 4: Upgrade approximately 2,250 circuit feet of underground cable on Causeway Road/Lowell Street to 750 mcm cu for increased reliability and capacity.
28	n/a	TBD	364/367	4W28 Getaway Replacement						316			Station 4: Replace 3,400 feet of underground getaway to 750 mcm cu for increased reliability.
29	n/a	TBD	364/367	5W4/5W5 Getaway Replacement						119			Station 5: Upgrade feeders from substation to risers to increase feeders' ampacity. This project will be revisited after the new Wilmington Substation is built.
30	n/a	TBD	364/367	4W7 Getaway Replacement							177		Station 4: Replace 1,900 feet of underground getaway to 750 mcm cu for increased reliability.
31	n/a	TBD	364/367	4W10 Getaway Replacement							177		Station 4: Replace 1,900 feet of underground getaway to 750 mcm cu for increased reliability.
32	n/a	TBD	364/367	4W4 Getaway Replacement								316	Station 4: Replace 3,400 feet of underground getaway to 750 mcm cu for increased reliability.
33	60	112	370	AMI Mesh Network Expansion & Meter Replacement	121	52	300	300	300	300	300	300	Install relays, meters, and/or retrofit kits to expand the AMI mesh network. Replace or retrofit 1,600 residential and small commercial meters, and 1,900 commercial meters. This will allow for end-of-the-line voltage readings.
34	62	126	397	Communication Equipment (Fiber Optic)	49	25	49	50	50	50	50	50	Materials to accommodate expanded use of fiber optic network for distribution automation and Eaton AMI system.
35	64	111	362	Substation Equipment Upgrade	50	50	66	30	30	30	30	30	Upgrade various equipment at substations. CY19 - 115kV grounding equipment Station 3 and 4.
36	66	115	395	Power/Lab and Tool Equipment	76	28	84		68	20	20	20	Purchase phasing meter/hi-pots, meter accuracy tester for commercial meters, 4-point battery hydraulic press, ratchet cutters, phasing tool.
37	68	117	370	Meters	60		80	60	60	60	60	60	Purchase meters for stock - new construction, upgrades and failures.
38	70	116	368	Transformers and Capacitors	583	132	617	617	617	617	617	617	Purchase units for stock, new construction and proposed reliability projects.
39	72	175	364	Pole Replacement Program, R and NR	263	132	263	271	279	288	296	305	Replace poles identified through the Pole Inspection Program (700 poles/year inspected). This will include transfers and replacement of secondary services as necessary. Fifty poles scheduled for replacement each year.
40	74	458	365	Secondary and Main Replacement Program - All Towns	344	114	344	252	238	344	316	274	Repair as necessary secondary/main services and connectors prioritized by age as determined by system-wide inspection. CY19: Gerry Road and Drury Lane Area, LC, and Thomas Road Area, LC (in conjunction with Stepdown area upgrades)
41	77	107	365	13.8kV Upgrade (Step-down Area, etc.) - All Towns	331	109	331	452	216	613	367	423	Convert step-down areas to 13.8kV. Remove antiquated equipment and step-downs to lower losses and improve system efficiency. CY19: Gerry Road and Drury Lane Area, LC, and Thomas Road Area, LC (in conjunction with Secondary and Main Replacement Program)
42	80	106	367/368	UG Facilities Upgrades (URDs, Manholes, etc.) - All Towns	332	180	332	475	529	501	623	500	Replace primary and neutral cables and pad-mount transformers as needed in various aging URDs. Improved reliability. For the next five years, three subdivisions are planned to be upgraded per year. CY19: Arlene/Ella/Franklin area in Wilmington; Carter/Willard area in Lynnfield; and Sandspur Lane in North Reading.
43	84	various	369	Service Connections (Residential and Commercial) - All Towns	142	71	142	147	151	156	160	165	Install new and upgraded residential and commercial services as requested.
44	86	various	various	Routine Construction - All Towns	1,078	539	1,078	1,110	1,143	1,177	1,213	1,249	Miscellaneous capital expenses including: overhead and underground system upgrades, pole hits, station upgrades, porcelain cutout replacements, street light connections (new equipment), pole setting/transfers, new construction (underground divisions)
45	n/a	TBD	362/367	Analog Devices Substation						1,000	1,000		Partnership with Analog to build a dedicated substation with feeds to back up feeders out of Substation 4.
46	n/a	TBD	364/365	4W24 Partial Circuit Reconductoring								656	Station 4: Upgrade main feeder of circuit 4W24 to 556 to address voltage and conductor capacity issues.

READING MUNICIPAL LIGHT DEPARTMENT
Capital Improvements CY19 thru CY24
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LINE #	Page #	Proj #	FERC #	PROJECT NAME	FY19 Budget	FY19 Jul 2018-Dec 2018 Estimate	CY19 PLAN EST.	CY20	CY21	CY22	CY23	CY24	BRIEF DESCRIPTION
47	n/a	137	364/365	Woburn Street, Wilmington (between West and Concord Streets) - Pole Line Upgrade	213	343							Replace/upgrade twenty-four (24) main line poles and four (4) stub poles on Woburn Street (from Concord to West Street) to proper strength and height, create proper NESC clearance between utilities. Benefit to long-term reliability.
48	n/a	108	355	115 kV Transmission Pole Upgrade (1 LINE PER YEAR FY18 & 19)	223	223							115kV transmission poles feeding Station 4 built in 1970 and have reached the end of their useful life. 211-503 upgraded in FY18 and 211-504 to be upgraded in FY19.
				TOTAL	**7,570**	**3,500**	**7,804**	**10,806**	**10,486**	**7,973**	**7,226**	**6,337**	

COMPLETED OR SCHEDULED TO BE COMPLETED BY 12/31/18.

	FY19 Budget	FY19 Jul 2018-Dec 2018 Estimate	CY19 PLAN EST.	CY20	CY21	CY22	CY23	CY24
TABLE 1: PLANT VALUES & DEPRECIATION EXPENSE:								
Plant in Service (Beginning)	151,808	150,085	152,585	159,389	169,195	178,681	185,655	191,881
Additions	**7,570**	**3,500**	**7,804**	**10,806**	**10,486**	**7,973**	**7,226**	**6,337**
Adjustments (Property Retirement)	-1,000	-1,000	-1,000	-1,000	-1,000	-1,000	-1,000	-1,000
Plant in Service (Ending)	158,379	152,585	159,389	169,195	178,681	185,655	191,881	197,217
Less Land and Land Rights	-1,266	-1,777	-1,777	-1,777	-1,777	-1,777	-1,777	-1,777
Depreciable Plant in Service	157,113	150,808	157,612	167,418	176,904	183,877	190,103	195,440
Accumulated Reserve For Depreciation	-77,510	-74,042	-78,566	-83,295	-88,317	-93,624	-99,140	-104,844
Net Plant in Service	80,869	78,543	80,823	85,900	90,364	92,030	92,740	92,374
TABLE 2: DEPRECIATION FUND BALANCES:								
Beginning Balance	2,450	4,013	6,573	4,594	2,272	2,665	2,054	1,901
Depreciation Rate (3%)	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Depreciation Expense	4,516	2,232	4,524	4,728	5,023	5,307	5,516	5,703
Bond Proceeds and Other Fund Sources	228	28	301	1,256	3,356	56	56	59
Operating Fund Transfer	3,900	3,800	1,000	2,500	2,500	2,000	1,500	1,500
	11,094	10,073	12,398	13,078	13,151	10,028	9,127	9,163
Capital Improvements	-7,570	-3,500	-7,804	-10,806	-10,486	-7,973	-7,226	-6,337
Ending Balance	3,523	6,573	4,594	2,272	2,665	2,054	1,901	2,826
TABLE 3: BOND PROCEEDS & OTHER FUND SOURCES:								
Bond Proceeds for New Wilmington Substation				1,200	3,300			
Force Account (MassDOT): Main & Hopkins, R	225	-	**225**					
Electric Vehicle Supply Equipment (EVSE)	3	3	6	6	6	6	6	9
BESS Battery Storage Unit			20					
Interest Income	-	25	50	50	50	50	50	50
	228	28	301	1,256	3,356	56	56	59

FACILITIES PROJECTS

CAPITAL PROJECT SUMMARY

Project Name: RMLD Lighting (LED) Upgrade Program **Project #:** 104

Project Schedule: CY19 **Project Manager:** Paul McGonagle, Facilities Manager

Reason for Expenditure:
Upgrade the existing lighting at 230 Ash Street, 218 Ash Street, and the substations with new LED fixtures. Energy use will be reduced when switching to LED. This will include interior and exterior light fixtures at the Ash Street campus, including all office spaces, the garage and bay area, and all lighting at the substations.

Brief Description/Scope:

An electrical designer has performed an energy audit specific to the lighting. In CY19 an electrical designer will develop specifications, and an electrical contractor will perform the installation of LED light fixtures at the Ash Street office building, garage, and campus site lighting. Also included as part of this project, all lighting at the substations will be upgraded to LED.

Barriers:
None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year:
The scope includes the installation of new fixtures by an electrical contractor.

Status Update:
Not applicable.

CAPITAL PROJECT COST SHEET

PROJECT NAME: RMLD Lighting (LED) Upgrade Program **SCHEDULE:** CY19

	RMLD LABOR					MATERIALS/CONTRACTORS				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	Overtime		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
Line Department: 2-man crew - unit rate in weeks			**$6,455**	**$6,267**	**$920**					
			$0	$0	$0	Engineering				$ 8,000
			$0	$0	$0	Contract Labor: Electrician				$ 52,000
			$0	$0	$0	Materials				$ 140,000
			$0	$0	$0					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
Line Operations Supervision: unit rate in hours			**$106**	**$103**	**$21**					
			$0	$0	$0					$ -
Engineering: unit rate in hours			**$80**	**$78**	**$21**					**$ -**
			$0	$0	$0					$ -
										$ -
Senior Tech: unit rate in hours			**$82**	**$80**	**$21**					**$ -**
			$0	$0	$0					$ -
			$0	$0	$0					
Technical Services Manager: unit rate in hours			**$101**	**$98**	**$21**					**$ -**
			$0	$0	$0					$ -
						Police Details	week	$2,427		$ -
TOTAL:			**$0**	**$0**	**$0**					**$ 200,000**

PROJECT TOTAL: $200,000

CAPITAL PROJECT SUMMARY

Project Name: Parking Lot Upgrade - Ash Street **Project #:** 140

Project Schedule: CY19 **Project Manager:** Paul McGonagle, Facilities Manager

Reason for Expenditure:
In FY18, an engineering firm was hired to engineer and design the reconfiguration of the existing customer parking lot at 230 Ash Street. The design includes relocated parking spaces, new drainage fixtures, landscaping, and additional connections for future EV stations.

Brief Description/Scope:
An engineering firm will develop construction drawings and bid documents for the construction of the parking lot, and installation of conduit and wiring to accommodate future installation of additional charging stations, landscaping, line striping, and signage. A contractor will then be hired to perform the parking lot construction.

Barriers:
Unforeseen schedule changes. Interruption of the right-of-way adjacent to the parking lot.

Change in Scope of Work From Prior Fiscal Year: Increase (Decrease)
Not applicable.

Status Update From Prior Fiscal Year:
Not applicable.

CAPITAL PROJECT COST SHEET

PROJECT NAME: Parking Lot Upgrades **SCHEDULE:** CY19

	RMLD LABOR					MATERIALS/CONTRACTORS				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	Overtime		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
Line Department: 2-man crew - unit rate in weeks			**$6,455**	**$6,267**	**$920**					
			$0	$0	$0	Engineering Firm to develop Construction Documents	job	$9,000	1.0	$ 9,000
			$0	$0	$0	Contractor to demo and reconfigure the Customer Parking Lot. Install new drainage system, asphalt,curbing, striping, and landscaping.	job	$214,000	1.0	$ 214,000
			$0	$0	$0			$1		$ -
			$0	$0	$0			$1		$ -
			$0	$0	$0			$1		$ -
			$0	$0	$0			$1		$ -
Line Operations Supervision: unit rate in hours			**$106**	**$103**						
Supervision of Line crews			$0	$0				$1		$ -
Engineering: unit rate in hours			**$80**	**$78**						
			$0	$0				$1		$ -
			$0	$0				$1		$ -
			$0	$0				$1		$ -
Senior Tech: unit rate in hours			**$82**	**$80**	**$21**					
			$0	$0	$0			$1		$ -
			$0	$0	$0			$1		$ -
			$0	$0	$0		1	$1		$ -
Technical Services Manager: unit rate in hours			**$101**	**$98**						
			$0	**$0**				$1		$ -
			$0	$0				$1		$ -
						Police Details	week	$2,427	3.0	$ 7,282
TOTAL:			**$0**	**$0**	**$0**					**$ 230,282**

PROJECT TOTAL: $230,282

CAPITAL PROJECT SUMMARY

Project Name: Building Upgrades **Project #:** 095

Project Schedule: Annual **Project Manager:** Paul McGonagle, Facilities Manager

Reason for Expenditure:
Annual allotment for repairs and upgrades to RMLD buildings.

Brief Description/Scope:

In CY19 we are allocating funds to address and remediate any issues identified as part of the recent consultant audit related to OSHA compliance.

Additionally, we plan to insulate and seal the exterior wall and vestibule ceiling above the main entrance of the building.

Barriers:
None anticipated at this time.

Change in Scope of Work from Prior Fiscal Year:
Not applicable.

Status Update:
Not applicable.

CAPITAL PROJECT COST SHEET

PROJECT NAME: Building Upgrades **SCHEDULE:** CY19

	RMLD LABOR					MATERIALS/CONTRACTORS				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	Overtime		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
Line Department: 2-man crew - unit rate in weeks			**$6,455**	**$6,267**	**$920**					
			$0	$0	$0	Contractor to install insulation in lobby to comply with energy code and new HVAC analysis	job	$35,000	1.0	$ 35,000
			$0	$0	$0	OSHA Compliance Remediation				$ 90,000
			$0	$0	$0					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
Line Operations Supervision: unit rate in hours			**$106**	**$103**						
Supervision of Line crews			$0	$0						$ -
Engineering: unit rate in hours			**$80**	**$78**						
			$0	$0						$ -
			$0	$0						$ -
			$0	$0						$ -
Senior Tech: unit rate in hours			**$82**	**$80**	**$21**					
			$0	$0	$0					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
Technical Services Manager: unit rate in hours			**$101**	**$98**						
			$0	**$0**						$ -
			$0	$0						$ -
						Police Details	week	$2,427		$ -
TOTAL:			**$0**	**$0**	**$0**					**$ 125,000**

PROJECT TOTAL:	**$125,000**

CAPITAL PROJECT SUMMARY

Project Name: Office Upgrades – 230 Ash Street **Project #:** 098

Project Schedule: Annual **Project Manager:** Paul McGonagle, Facilities Manager

Reason for Expenditure:
Annual allotment for general office upgrades at 230 Ash Street.

Brief Description/Scope:
In CY19 we will relocate the Purchasing Department to the Facilities area. Design and construct new Purchasing offices. Reconfigure the Facilities department. Design and construct a Facilities conference room.

Upgrades will include modification to the walls, ceilings, flooring, electrical, sprinkler and HVAC. Office cubicle furniture will be purchased to accommodate new employees.

Additionally, we will remodel the Customer Service area.

Barriers:
Unforeseen schedule changes.

Change in Scope of Work From Prior Fiscal Year:
Not applicable.

Status Update:
Not applicable.

CAPITAL PROJECT COST SHEET

PROJECT NAME: Office Upgrades - 230 Ash Street **SCHEDULE:** CY19

	RMLD LABOR					MATERIALS/CONTRACTORS				
	# of Units		Labor Total (unit rate x labor units)		Vehicle					
ITEM/TASK	Straight Time	OT	Straight Time	Overtime	(labor units x vehicle rate)	DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
Line Department: 2-man crew - unit rate in weeks			**$6,455**	**$6,267**	**$920**					
			$0	$0	$0	Customer Service Area Remodel	job	$20,000	1.0	$ 20,000
			$0	$0	$0	Purchasing/Facilities Remodel	job	$100,000	1.0	$ 100,000
			$0	$0	$0					$ -
			$0	$0	$0					$ -
			$0	$0	$0			$1		$ -
			$0	$0	$0			$1		$ -
Line Operations Supervision: unit rate in hours			**$106**	**$103**						
Supervision of Line crews			$0	$0				$1		$ -
Engineering: unit rate in hours			**$80**	**$78**						
			$0	$0				$1		$ -
			$0	$0				$1		$ -
			$0	$0				$1		$ -
Senior Tech: unit rate in hours			**$82**	**$80**	**$21**					
			$0	$0	$0			$1		$ -
			$0	$0	$0			$1		$ -
			$0	$0	$0		1	$1		$ -
Technical Services Manager: unit rate in hours			**$101**	**$98**						
			$0	**$0**				$1		$ -
			$0	$0				$1		$ -
						Police Details	week	$2,427		$ -
TOTAL:			**$0**	**$0**	**$0**					**$ 120,000**

PROJECT TOTAL:	**$120,000**

CAPITAL PROJECT SUMMARY

Project Name: Security System Upgrades – All Sites **Project #:** 119

Project Schedule: Annual **Project Manager:** Paul McGonagle, Facilities Manager

Reason for Expenditure:

The original access control system was installed in 1994 and was replaced in 2016 with a new open-source software system to provide more flexibility to adapt to the changing needs of the RMLD. Funds should be available to continually update equipment and perform maintenance and repair work on both the access control and the surveillance systems at the Ash Street campus and substations.

Brief Description/Scope:

Access control and surveillance systems upgrades over the next year:

- Install additional cameras at substations.
- Repair damage fencing and gates at station 4.
- Install additional DVR's to accommodate new cameras.
- Repair/replace exterior doors at the 230 Ash Street Campus.

Access control and surveillance systems upgrades over the next five (5) years:

- Add security fencing to server room
- Repair and replace card readers as needed annually
- Upgrade a portion of high-definition cameras annually as needed
- Upgrade cabling
- Repair/replace site lighting
- Re-key buildings and sensitive areas annually as needed

Barriers:

None anticipated at this time.

Change in Scope of Work from Prior Fiscal Year:

Not applicable.

Status Update:

Not applicable.

CAPITAL PROJECT COST SHEET

PROJECT NAME: Security Upgrades - All Sites **SCHEDULE:** CY19

	RMLD LABOR					MATERIALS/CONTRACTORS				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	Overtime		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
Line Department: 2-man crew - unit rate in weeks			**$6,455**	**$6,267**	**$920**					
			$0	$0	$0	Install additional Cameras and DVR's at Substations. Repair Fencing at Station 4. Repair/Relace ext. doors at 230 Ash street Campus.				$ 30,000
			$0	$0	$0					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
Line Operations Supervision: unit rate in hours			**$106**	**$103**	**$21**					
			$0	$0	$0					$ -
Engineering: unit rate in hours			**$80**	**$78**	**$21**					**$ -**
			$0	$0	$0					$ -
										$ -
Senior Tech: unit rate in hours			**$82**	**$80**	**$21**					**$ -**
			$0	$0	$0					$ -
			$0	$0	$0					
Technical Services Manager: unit rate in hours			**$101**	**$98**	**$21**					**$ -**
			$0	$0	$0					$ -
						Police Details	week	$2,427		$ -
TOTAL:			**$0**	**$0**	**$0**					**$ 30,000**

PROJECT TOTAL:	**$30,000**

CAPITAL PROJECT SUMMARY

Project Name: Rolling Stock Replacement **Project #:** 118

Project Schedule: Annual **Project Manager:** Paul McGonagle, Facilities Manager

Reason for Expenditure:
Replace vehicles based on an eight to ten-year cycle to reduce maintenance costs and improve reliability. Vehicles removed from the fleet will be traded-in to the dealer providing the new vehicle.

Brief Description/Scope:

Specifications, bids, and purchase orders will be completed for CY19 delivery of the following:

- one (1) new forklift with trade-in of one (1) 1999 Yale forklift
- one (1) new pick-up truck with trade-in of one (1) 2009 Ford F150
- one (1) new underground utility vehicle with trade-in of one (1) Ford E350

Barriers:
None anticipated at this time.

Change in Scope of Work from Prior Fiscal Year: Increase (Decrease)
Not applicable.

Status Update:
Long lead-time for bid and purchase of rolling stock does not allow for the receipt of any of the items budgeted for FY19 by the end of December 2018. Therefore, all planned purchases for FY19, will be received in CY19.

CAPITAL PROJECT COST SHEET

PROJECT NAME: Rolling Stock Replacement (vehicles, trailers, fork trucks)

SCHEDULE: CY19

	RMLD LABOR					MATERIALS/CONTRACTORS				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	Overtime		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
Line Department: 2-man crew - unit rate in weeks			**$6,455**	**$6,267**	**$920**					
			$0	$0	$0	Forklift	each	$75,000	1.0	$ 75,000
			$0	$0	$0	Light duty pick-up truck	each	$50,000	1.0	$ 50,000
			$0	$0	$0	Underground Utility Vehicle	each	$200,000	1.0	$ 200,000
			$0	$0	$0					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
Line Operations Supervision: unit rate in hours			**$106**	**$103**	**$21**					
			$0	$0	$0					$ -
Engineering: unit rate in hours			**$80**	**$78**	**$21**					**$ -**
			$0	$0	$0					$ -
										$ -
Senior Tech: unit rate in hours			**$82**	**$80**	**$21**					**$ -**
			$0	$0	$0					$ -
			$0	$0	$0					
Technical Services Manager: unit rate in hours			**$101**	**$98**	**$21**					**$ -**
			$0	$0	$0					$ -
						Police Details	week	$2,427		$ -
TOTAL:			**$0**	**$0**	**$0**					**$ 325,000**

PROJECT TOTAL:	**$325,000**

Light Duty Vehicles

Vehicle ID #	Year	Last Mileage Date	Current Mileage	Average Annual Maintenance Costs 2008-present	Department	Vehicle Type	FY 18	CY 19
7	2007	2/13/18	126,613	$1,927.12	Customer Service	Ford Escape	**Trade/54**	
47	2009	2/13/18	138,168	$2,031.24	Engineering	Ford F-150 PU		**Trade/56**
28	2007	2/13/18	44,394	$1,302.27	Line	Ford E-350		**Trade/58**
New (54) Electric	2018	X	X	X	Customer Service	All Electric Vehicle	$30,000.00	
New (56)	2018	X	X	X	Engineering	Pick up Truck		$50,000.00
New (58)	2018	X	X	X	Line	Underground Utility Vehicle		$200,000.00

Heavy Duty Line Trucks

Vehicle ID #	Year	Last Mileage Date	Current Mileage	Average Annual Maintenance Costs 2008-present	Department	Vehicle Type	FY 18	CY 19
9	2010	2/13/18	124,457	$10,363.61	Line	Inter - 40' Bucket	**Trade/55**	
New (55)	2018	X	X	X	Line	Inter - 40'Bucket	$200,000.00	

Fork Lift

Vehicle ID #	Year	Last Hour Date	Current Hours	Average Annual Maintenance Costs 2009-present	Department	Vehicle Type	FY 18	CY 19
FT-1	1999	3/10/17	772.5	0	Stock / Line / Station	Yale Fork Truck		**Trade/FT5**
New (FT-5)	2018	X	X	X	Stock / Line / Station	Fork Truck	X	$75,000.00
						FY Totals:	$230,000.00	$325,000.00
							FY 18	CY 19

INTEGRATED RESOURCES DIVISION PROJECTS

CAPITAL PROJECT SUMMARY

Project Name: Electric Vehicle Supply Equipment (EVSE) **Project #:** 099

Project Schedule: CY19 **Project Manager:** Jane Parenteau, Director of Integrated Resources

Reason for Expenditure:
RMLD will plan to install EVSEs in each of the four towns in the service territory. This will increase RMLD's kWh sales.

Brief Description/Scope:
Each EVSE is a dual charger. RMLD will work with each town to determine interest in locating units within the town and the appropriate location. RMLD will plan to install two EVSE chargers per year.

Barriers:
None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year:

RMLD has increased the number of charging stations to be installed to two per year.

Status Update:
In FY18 RMLD installed the first EVSE at the RMLD offices located at 230 Ash Street, Reading.

CAPITAL PROJECT COST SHEET

PROJECT NAME: Electrical Vehicle Supply Equipment (EVSE) **SCHEDULE:** CY19

	RMLD LABOR					MATERIALS/CONTRACTORS				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	Overtime		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
Line Department: 2-man crew - unit rate in weeks			**$6,455**	**$6,267**	**$920**					
			$0	$0	$0	One EVSE for installation in RMLD service territory.	each	$30,000	2.0	$ 60,000
			$0	$0	$0					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
Line Operations Supervision: unit rate in hours			**$106**	**$103**	**$21**					
			$0	$0	$0					$ -
Engineering: unit rate in hours			**$80**	**$78**	**$21**					**$ -**
			$0	$0	$0					$ -
										$ -
Senior Tech: unit rate in hours			**$82**	**$80**	**$21**					**$ -**
			$0	$0	$0					$ -
			$0	$0	$0					
Technical Services Manager: unit rate in hours			**$101**	**$98**	**$21**					**$ -**
			$0	$0	$0					$ -
						Police Details	week	$2,427		$ -
TOTAL:			**$0**	**$0**	**$0**					**$ 60,000**

PROJECT TOTAL:	**$60,000**

CAPITAL PROJECT SUMMARY

Project Name: Battery Storage Unit - Station 3, NR **Project #:** 101

Project Schedule: FY19-CY19 **Project Manager:** Tom Ollila, Integrated Resources Engineer

Reason for Expenditure:

RMLD has been awarded a three-year, $1m grant from Mass Department of Energy Resources (DOER) to install a 5 MW (10 MWh) grid scale energy storage system at the North Reading substation to provide peak shaving services. The goal for commercial operation date is no later than June 30, 2019. Project contracts, license agreements, system impact study, etc., are now underway or in negotiations. A revised amount of $20,000 has been allocated to the Capital Budget for RMLD capital expenses related to interconnection costs associated with this project.

Brief Description/Scope:
RMLD is still in the conceptual design stages of the project. However, at this point, it is understood that RMLD will need to install infrastructure that will allow the battery unit to connect to the RMLD distribution system. It appears the interconnection will be directly connected into RMLD's substation. However, in addition to this interconnection, this project may also include additional infrastructure for the battery station service, which may be fed overhead by a pole line nearby Station 3. The $20,000 accounts for worst-case scenario for these potential capitals costs as RMLD works with Nextera to finalize the design. These costs may ultimately be reimbursed by Nextera.

Barriers:
Finalizing energy storage agreement.

Change in Scope of Work From Prior Fiscal Year: Increase (Decrease)
Not applicable.

Status Update From Prior Fiscal Year:
Not applicable.

INFORMATION TECHNOLOGIES PROJECTS

CAPITAL PROJECT SUMMARY

Project Name: Hardware Upgrades **Project #:** 127

Project Schedule: Annual **Project Manager:** Mark Uvanni, IT Manager

Reason for Expenditure:
This is an amount annually reserved for failed and/or obsolete computer and related equipment. This budget item is also used for unforeseen purchases, which may be necessary.

Brief Description/Scope:
In addition to the standard hardware purchases described above, we anticipate network updates to the wireless mesh.

Barriers:
None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year:
Not applicable.

Status Update:
Not applicable.

CAPITAL PROJECT COST SHEET

PROJECT NAME: Hardware Upgrades **SCHEDULE:** CY19

	RMLD LABOR					MATERIALS/CONTRACTORS				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	Overtime		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
Line Department: 2-man crew - unit rate in weeks			**$6,455**	**$6,267**	**$920**					
			$0	$0	$0	General hardware purchases				$ 70,000
			$0	$0	$0	Network updates to wireless mesh				$ 8,000
			$0	$0	$0					
			$0	$0	$0					
			$0	$0	$0					
			$0	$0	$0					$ -
Line Operations Supervision: unit rate in hours			**$106**	**$103**	**$21**					
			$0	$0	$0					$ -
Engineering: unit rate in hours			**$80**	**$78**	**$21**					**$ -**
			$0	$0	$0					$ -
										$ -
Senior Tech: unit rate in hours			**$82**	**$80**	**$21**					**$ -**
			$0	$0	$0					$ -
			$0	$0	$0					
Technical Services Manager: unit rate in hours			**$101**	**$98**	**$21**					**$ -**
			$0	$0	$0					$ -
						Police Details	week	$2,427		$ -
TOTAL:			**$0**	**$0**	**$0**					**$ 78,000**

PROJECT TOTAL:	**$78,000**

CAPITAL PROJECT SUMMARY

Project Name: Software and Licensing **Project #:** 128

Project Schedule: Annual **Project Manager:** Mark Uvanni, IT Manager

Reason for Expenditure:

Each year RMLD must renew existing software licenses and purchase new software, either to update existing users or for new users. Additionally, new software may be added at the request of various operating units. This item includes these ad hoc purchases as well as more specific items (outlined below) which are anticipated at this time.

Brief Description/Scope:
In addition to the standard software and licensing purchases described above, we anticipate the following:

- Custom programing/development for GIS/GPS, OMS, fixed network, AMI, IVR and continued CIS integration.

- Substation asset management software to track and trend RMLD's substation assets testing and maintenance. This software could also provide mobile deployment of tablets to upload test results.

- Work Order Management System. This will be fully integrated with our existing ERP software and to ESRI GIS. This will be a two-year project, with $75,000 budgeted each year (CY19 and CY20).

Barriers:
None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year:
n/a

Status Update:
n/a

CAPITAL PROJECT COST SHEET

PROJECT NAME: Software and Licensing **SCHEDULE:** CY19

	RMLD LABOR					MATERIALS/CONTRACTORS				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	Overtime		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
Line Department: 2-man crew - unit rate in weeks			**$6,455**	**$6,267**	**$920**					
			$0	$0	$0	General software purchases				$ 50,000
			$0	$0	$0	Custom programming/development				$ 200,000
			$0	$0	$0	Substation Asset Management Software				$ 80,000
			$0	$0	$0	Work Order Management System ($150k total; $75K CY19 and $75K CY20)				$ 75,000
			$0	$0	$0					
			$0	$0	$0					$ -
Line Operations Supervision: unit rate in hours			**$106**	**$103**	**$21**					
Supervision of Line crews			$0	$0	$0					$ -
Engineering: unit rate in hours			**$80**	**$78**	**$21**					**$ -**
Pole Foreman, 605As, construction drawings, switching orders, etc.			$0	$0	$0					$ -
										$ -
Senior Tech: unit rate in hours			**$82**	**$80**	**$21**					**$ -**
			$0	$0	$0					$ -
			$0	$0	$0					
Technical Services Manager: unit rate in hours			**$101**	**$98**	**$21**					**$ -**
			$0	$0	$0					$ -
						Police Details	week	$2,427		$ -
TOTAL:			**$0**	**$0**	**$0**					**$ 405,000**

PROJECT TOTAL:	**$405,000**

SYSTEM PROJECTS

CAPITAL PROJECT SUMMARY

Project Name: Pad-mount Switchgear Upgrade at Industrial Parks **Project #:** 102

Project Schedule: FY18-CY23 **Project Manager:** Peter Price, Senior Distribution Engineer

Reason for Expenditure:
Increase distribution system protection in the underground industrial parks in Wilmington and North Reading as well as the three-phase underground distribution areas in Reading, i.e., River Park Drive, Jonspin Road, Haven Street, Woburn Street, Industrial Way, etc.

Brief Description/Scope:
Purchase new units to replace live front pad-mounted switchgear. New units will be dead front with provisions for remote/supervisor control. There are currently 29 units systemwide. In CY19 we are planning to purchase and replace (5) units.

Barriers:
None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year: Increase (Decrease)
Not applicable.

Status Update From Prior Fiscal Year:
In FY18 the Department replaced a total of four (4) switches:

- Switch-1 on Jonspin Road, Wilmington
- Switch-2 on River Park Drive, North Reading
- Switch-2 and Switch-3 on Concord Street, North Reading

CAPITAL PROJECT COST SHEET

PROJECT NAME: Pad-mount Switchgear Upgrades at Industrial Parks **SCHEDULE:** CY19

	RMLD LABOR					MATERIALS/CONTRACTORS				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	Overtime		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
Line Department: 2-man crew - unit rate in weeks			**$6,455**	**$6,267**	**$920**					
Replace pad-mount switchgear		2	$0	$12,534	$1,840	Trayer pad-mounted switches (2-220A, 2-600A positions)	each	$62,500	5	$ 312,500
Make up t-bodies and LB elbows	2		$12,910	$0	$1,840	T-bodies, LB elbows, miscellaneous connectors for 12 primary cables	each	$300	12	$ 3,600
Splice out line and load side primary cables		2	$0	$12,534	$1,840	Splices for line and load side primaries	each	$250	12	$ 3,000
			$0	$0	$0	Primary cable for piece outs	foot	$20	1000	$ 20,000
			$0	$0	$0	Excavation contractor to adjust pad for new switchgear	each	$8,000	5	$ 40,000
			$0	$0	$0					$ -
Line Operations Supervision: unit rate in hours			**$106**	**$103**						
Supervision of Line crews	40	24	$4,231	$2,465						$ -
Engineering: unit rate in hours			**$80**	**$78**						**$ -**
Prepare switching order, coordinate outages, pad modifications, order materials, etc.	40	48	$3,205	$3,733						$ -
										$ -
Senior Tech: unit rate in hours			**$82**	**$80**	**$21**					**$ -**
			$0	$0	$0					$ -
			$0	$0	$0					
Technical Services Manager: unit rate in hours			**$101**	**$98**						**$ -**
			$0	$0						$ -
						Police Details	week	$2,427		$ -
TOTAL:			**$20,346**	**$31,265**	**$5,520**					**$ 379,100**

PROJECT TOTAL:	**$436,232**

CAPITAL PROJECT SUMMARY

Project Name: Grid Modernization & Optimization **Project #:** 103

Project Schedule: On-going **Project Manager:** Hamid Jaffari, Director of Engineering & Operations
Peter Price, Senior Distribution Engineer
Brian Smith, Senior Distribution Engineer

Reason for Expenditure:
In compliance with DPU/OSHA Order DPU 12-76B, increase system reliability, modernize/optimize system operation and functionality, decrease system losses and expenses for labor and truck rolls related to outage management.

Brief Description/Scope:
Continue implementation of grid modernization/optimization road map including installation and integration of smart switches, IntelliRupters, and capacitor banks and controls. Installation and integration of outage management system (OMS) with an IVR system to optimize outage restoration process. Cyber security, simulator, fiber rationale connection, fault detection, economic dispatch, and overall system integration, including GIS and AMI.

Barriers:
Technology/software integration; merging old technology with new emerging technology.

Change in Scope of Work From Prior Fiscal Year:

Not applicable.

Status Update:
A total of twelve SCADA-Mate switches and two IntelliRupters have been installed. The outage management system (OMS), customer portal and outage dashboard, and WebSurv have been installed and are operational internally. Testing and system adjustments are ongoing.

CAPITAL PROJECT COST SHEET

PROJECT NAME: Grid Modernization & Optimization
Scada-Mate Switches

SCHEDULE: CY19

	RMLD LABOR					MATERIALS/CONTRACTORS				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	Overtime		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
Line Department: 2-man crew - unit rate in weeks			**$6,455**	**$6,267**	**$920**					
Install Scada-Mate Switches and controls	1		$6,455	$0	$920	Scada-Mate CX Switch	each	$26,990	4	$ 107,960
Replace pole, install by-pass disconnects, transfer pri, sec, etc.	7		$45,187	$0	$6,440	55' pole, x-arms, brackets, guys, anchors, miscellaneous hardware, etc.	each switch	$2,000	4	$ 8,000
			$0	$0	$0	6801 License/IntelliTeam License	each switch	$2,500	4	$ 10,000
			$0	$0	$0	S&C repeaters/radios	each	$3,000	12	$ 36,000
Install three (3) repeaters/radios per switch.	0.4		$2,582	$0	$368					
			$0	$0	$0					$ -
Line Operations Supervision: unit rate in hours			**$106**	**$103**						
Supervision of Line crews	160		$16,925	$0						$ -
Engineering: unit rate in hours			**$80**	**$78**						**$ -**
Pole Foreman, construction drawings, etc.	40		$3,204.80	$0						$ -
Prepare switching orders, order materials, establish communication	40		$3,204.80	$0						$ -
Senior Tech: unit rate in hours			**$82**	**$80**	**$21**					**$ -**
Controls, programming, commissioning, etc.	64		$5,259	$0	$1,344					$ -
			$0	$0	$0					
Technical Services Manager: unit rate in hours			**$101**	**$98**						**$ -**
Controls, programming, commissioning, etc.	32		$3,237	$0						$ -
						Police Details	week	$2,427	4.0	$ 9,710
TOTAL:			**$86,054**	**$0**	**$9,072**					**$ 171,670**

PROJECT TOTAL:	**$266,796**

CAPITAL PROJECT COST SHEET

PROJECT NAME: Grid Modernization and Optimization IntelliRupters

SCHEDULE: CY19

	RMLD LABOR					MATERIALS/CONTRACTORS				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	Overtime		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
Line Department: 2-man crew - unit rate in weeks			**$6,455**	**$6,267**	**$920**					
Install IntelliRupter Switch	1		$6,455	$0	$920	IntelliRupter switch	each	$34,560	2	$ 69,120
Replace pole, install by-pass disconnects, transfer pri, sec, etc	3		$19,366	$0	$2,760	55' pole, cross-arms, brackets, guys, anchors, miscellaneous hardware, etc.	each	$2,000	2	$ 4,000
			$0	$0	$0	IntelliRupter license/IntelliTeam license	each	$2,500	2	$ 5,000
			$0	$0	$0					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
Line Operations Supervision: unit rate in hours			**$106**	**$103**						
			$0	$0						$ -
Engineering: unit rate in hours			**$80**	**$78**						**$ -**
Pole Foreman, construction drawings, etc.	24		$1,923	$0						$ -
Prepare switching orders, order materials, establish communication	24		$1,923	$0						$ -
Senior Tech: unit rate in hours			**$82**	**$80**	**$21**					**$ -**
Controls, programming, commissioning, etc.	64		$5,259	$0	$1,344					$ -
			$0	$0	$0					
Technical Services Manager: unit rate in hours			**$101**	**$98**						**$ -**
Controls, programming, commissioning, etc.	16		$1,618	$0						$ -
						Police Details	week	$2,427	2.0	$ 4,855
TOTAL:			**$36,544**	**$0**	**$5,024**					**$ 82,975**

PROJECT TOTAL:	**$124,543**

CAPITAL PROJECT COST SHEET

PROJECT NAME: Grid Modernization & Optimization
CapBank Automation

SCHEDULE: CY19

	RMLD LABOR					MATERIALS/CONTRACTORS				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	Overtime		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
Line Department: 2-man crew - unit rate in weeks			**$6,455**	**$6,267**	**$920**					
			$0	$0	$0	CBC 800 CAP controller	each	$2,200	6.0	$ 13,200
			$0	$0	$0	RFN 1200 radio	each	$800	6.0	$ 4,800
			$0	$0	$0	Miscellaneous	per controller	$400	6.0	$ 2,400
			$0	$0	$0					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
Line Operations Supervision: unit rate in hours			**$106**	**$103**						
			$0	$0						$ -
Engineering: unit rate in hours			**$80**	**$78**						**$ -**
Connecting to Eaton System and SCADA switching	144		$11,537	$0						$ -
										$ -
Senior Tech: unit rate in hours			**$82**	**$80**	**$21**					**$ -**
Controls, programming, commissioning, installation, etc.	192		$15,777	$0	$4,032					$ -
			$0	$0	$0					
Technical Services Manager: unit rate in hours			**$101**	**$98**						**$ -**
Controls, programming, commissioning, installation, etc.	144		$14,566	$0						$ -
						Police Details	week	$2,427		$ -
TOTAL:			**$41,880**	**$0**	**$4,032**					**$ 20,400**

PROJECT TOTAL:	**$66,312**

CAPITAL PROJECT COST SHEET

PROJECT NAME: Grid Modernization & Optimization Software Integration

SCHEDULE: CY19

	RMLD LABOR					MATERIALS/CONTRACTORS				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	Overtime		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
Line Department: 2-man crew - unit rate in weeks			**$6,455**	**$6,267**	**$920**					
			$0	$0	$0	Services from vendor for integration of AMI and various devices		$10,000	1	$ 10,000
			$0	$0	$0					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
Line Operations Supervision: unit rate in hours			**$106**	**$103**						
			$0	$0						$ -
Engineering: unit rate in hours			**$80**	**$78**						**$ -**
Work with vendor for software integration	24		$1,923	$0						$ -
										$ -
Senior Tech: unit rate in hours			**$82**	**$80**	**$21**					**$ -**
Work with vendor for software integration	24		$1,972	$0	$504					$ -
			$0	$0	$0					
Technical Services Manager: unit rate in hours			**$101**	**$98**						**$ -**
			$0	$0						$ -
						Police Details	week	$2,427		$ -
TOTAL:			**$3,895**	**$0**	**$504**					**$ 10,000**

PROJECT TOTAL: $14,399

CAPITAL PROJECT COST SHEET

PROJECT NAME: Grid Modernization & Optimization
IVR Integration

SCHEDULE: FY/CY19

	RMLD LABOR					MATERIALS/CONTRACTORS				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	Overtime		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
Line Department: 2-man crew - unit rate in weeks			**$6,455**	**$6,267**	**$920**					
			$0	$0	$0	IVR System	each	$38,000	1	$ 38,000
			$0	$0	$0	IVR System integration with Survalent (license and commissioning)	each	$39,000	1	$ 39,000
			$0	$0	$0					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
Line Operations Supervision: unit rate in hours			**$106**	**$103**						
			$0	$0						$ -
Engineering: unit rate in hours			**$80**	**$78**						**$ -**
Work with new vendor and Survalent for project integration	160		$12,819	$0						$ -
										$ -
Senior Tech: unit rate in hours			**$82**	**$80**	**$21**					**$ -**
			$0	$0						$ -
			$0	$0						
Technical Services Manager: unit rate in hours			**$101**	**$98**	**$0**					**$ -**
			$0	$0						$ -
						Police Details	week	$2,427		$ -
TOTAL:			**$12,819**	**$0**	**$0**					**$ 77,000**

PROJECT TOTAL:	**$89,819**

FY19 ESTIMATED SPENDING	**$38,000**
CY19 ESTIMATED SPENDING	**$51,819**

CAPITAL PROJECT COST SHEET

PROJECT NAME: Grid Modernization & Optimization
OMS - Crew Management

SCHEDULE: CY19

	RMLD LABOR					MATERIALS/CONTRACTORS				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	Overtime		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
Line Department: 2-man crew - unit rate in weeks			**$6,455**	**$6,267**	**$920**					
			$0	$0	$0	OMS - Crew Management	module	$47,000	1	$ 47,000
			$0	$0	$0					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
Line Operations Supervision: unit rate in hours			**$106**	**$103**						
			$0	$0						$ -
Engineering: unit rate in hours			**$80**	**$78**						**$ -**
Work with new vendor and Survalent for project integration	160		$12,819	$0						$ -
										$ -
Senior Tech: unit rate in hours			**$82**	**$80**	**$21**					**$ -**
			$0	$0						$ -
			$0	$0						
Technical Services Manager: unit rate in hours			**$101**	**$98**	**$0**					**$ -**
			$0	$0						$ -
						Police Details	week	$2,427		$ -
TOTAL:			**$12,819**	**$0**	**$0**					**$ 47,000**

PROJECT TOTAL:	**$59,819**

CAPITAL PROJECT SUMMARY

Project Name: New Wilmington Substation **Project #:** 105

Project Schedule: FY17-CY21 **Project Manager:** Manole Agouridis, Distribution Engineer

Reason for Expenditure:
Substation 5 has reached the end of its useful life. The transformer and switchgear need major upgrades / repairs to keep substation operational. The new Wilmington substation will be a replacement for Substation 5, while also providing added benefits to RMLD.

Brief Description/Scope:
Install a new 115kV / 13.8 kV substation in Wilmington in the Ballardvale area. The new substation will include two (2) 60 MVA transformers and 15kV switchgear with eight (8) (or more as needed) feeder breaker positions. It shall also provide backup and load relief for both Substation 3 and Substation 4.

Barriers:
Availability of land.

Change in Scope of Work From Prior Fiscal Year: Increase (Decrease)
Not applicable.

Status Update From Prior Fiscal Year:
RMLD continues to explore options for location of the new substation.

CAPITAL PROJECT COST SHEET

PROJECT NAME: New Wilmington Substation **SCHEDULE:** CY19

	RMLD LABOR					MATERIALS/CONTRACTORS				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	Overtime		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
Line Department: 2-man crew - unit rate in weeks			**$6,455**	**$6,267**	**$920**					
			$0	$0	$0					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
Line Operations Supervision: unit rate in hours			**$106**	**$103**						
Supervision of Line crews			$0	$0						$ -
Engineering: unit rate in hours			**$80**	**$78**						
Project management and associated engineernig tasks.	168		$13,460	$0		Indirect costs to include: ISO Interconnection System Impact Study and Conceptual Design	each	$50,000	1.0	$ 50,000
			$0	$0						$ -
			$0	$0						$ -
Senior Tech: unit rate in hours			**$82**	**$80**	**$21**					
			$0	$0	$0					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
Technical Services Manager: unit rate in hours			**$101**	**$98**						
Project Management	52		$5,260	**$0**						$ -
			$0	$0						$ -
						Police Details	week	$2,427		$ -
TOTAL:			**$18,720**	**$0**	**$0**					**$ 50,000**

PROJECT TOTAL:	**$68,720**

CAPITAL PROJECT SUMMARY

Project Name: Force Account - Massachusetts Department of Transportation: Main and Hopkins, R **Project #:** TBD

Project Schedule: CY19 **Project Manager:** Peter Price, Senior Distribution Engineer

Reason for Expenditure:
The Massachusetts Department of Transportation has notified RMLD of a project that may be planned for CY19. We are reserving an amount in the Capital Budget for this project.

Brief Description/Scope:
MassDOT has plans to improve the traffic flow at the intersection of Main Street and Hopkins Street in Reading. This plan includes the widening of Main Street and the installation of traffic signals. This project will require the RMLD to relocate up to 12 poles and petition and install up to 3 guy poles along Main Street and Hopkins Street. This project may require the installation of laminated poles.

Barriers:
Verizon set area. Some poles will need to be petitioned. MassDOT will need to secure easements as needed for poles, anchors and guys at several locations. Project also involves the relocation of the UG service to the restaurant at 107 Main Street.

Change in Scope of Work from Prior Fiscal Year: Increase (Decrease)

Not applicable.

Status Update From Prior Fiscal Year:
Not applicable.

CAPITAL PROJECT SUMMARY

Project Name 4W5/4W12 Getaway Improvements **Project #:** 122

Project Schedule: FY19 -CY19 **Project Manager:** Manole Agouridis, Distribution Engineer

Reason for Expenditure:
The RMLD considered combining two (2) different projects into one larger project. The first of the two projects was to investigate and ultimately move forward with improvements to accommodate added load at Analog. The second project was an underground getaway maintenance project that would ultimately result in the replacement of underground getaway cables per RMLD's underground maintenance program. The objective of this project is to have the 4W5 and 4W12 circuits be separated from the existing south side duct bank and run them from Station 4 to West Street overhead via the existing pole line currently being utilized by the 4W12. This will improve the ratings of the 4W5 and 4W12 circuits drastically, while also improving the rating of the remaining six (6) circuits in the south side duct bank due to reduced heating.

Brief Description/Scope:
Install a cable tray system and associated hardware at Station 4. Install two (2) riser poles within the property at Station 4, this will include the associated feeds from Station 4. Upgrade the pole line from Station 4 to West Street, including upgrade of up to ten (10) poles, installing four (4) new poles, and running a new circuit an estimated 1,250 feet in length. Perform all overhead line work to tie the new riser poles to the existing overhead distribution on West Street. Also remove some Town of Reading public shade trees to accommodate a section of the new overhead line.

Barriers:
The RMLD is currently requesting approval from the Town of Reading to remove four (4) public shade trees. The result of this may have an effect on the scope and feasibility of the project.

Change in Scope of Work From Prior Fiscal Year: Increase (Decrease)
This project replaces the 4W5 Getaway Replacement project, which was budgeted for FY19 at a cost of $151,894. The expanded scope of this project adds $107,903 to the project.

Status Update From Prior Fiscal Year:

Not applicable.

CAPITAL PROJECT COST SHEET

PROJECT NAME: 4W5/4W12 Getaway Improvements **SCHEDULE:** FY/CY19

	RMLD LABOR					MATERIALS/CONTRACTORS				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	Overtime		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
Line Department: 2-man crew - unit rate in weeks			**$6,455**	**$6,267**	**$920**					
New Cable Installation - loading up reels, pulling in cable	1		$6,455	$0	$920	15kV cable, 750 MCM 1/C , strand shield, EPR	foot	$14.43	1200.0	$ 17,316
Terminating and Splicing and wrapping cable, labeling, etc	1		$6,455	$0	$920	Underground contractor assist	week	$7,054	2.0	$ 14,107
Removal and scrap of old cable	1		$6,455	$0	$920	Terminations	each	$71	12.0	$ 848
Set (14) 55' class 1 poles	2		$12,910	$0	$1,840	55' class one poles	each	$800	14.0	$ 11,200
Frame (14) poles for four (4) circuits	2		$12,910	$0	$1,840	*15 kV Hendrix brackets, miscellaneous hardware, primary connectors (spacers, insulators, etc.)*	per pole	$400	14.0	$ 5,600
Set up for spacer install	2		$12,910	$0	$1,840	*0.052 messenger wire*	foot	*$1.23*	1500.0	$ 1,845
Pull in and install 556	2		$12,910	$0	$1,840	*15kV, 556 AL spacer cable*	foot	*$2.02*	4500.0	$ 9,090
			$0	$0	$0	Excavation Contractor				$ 45,000
Line Operations Supervision: unit rate in hours			**$106**	**$103**						
Supervision of Line crews	80		$8,462	$0						$ -
Engineering: unit rate in hours			**$80**	**$78**						**$ -**
Prepare construction documents, PoleForeman, and 605As	64		$5,128	$0						$ -
Switching review and oversight	32		$2,564	$0						
Work at Station, cable tray, and procurement	40		$3,205	$0		Outside Engineering Services				$ 15,000
Senior Tech: unit rate in hours			**$82**	**$80**	**$21**					**$ -**
Switching cable out and back	16		$1,315	$0	$336					$ -
Cable tray work	40		$3,287	$0	$840	Underground contractor assist	week	$7,054	1.0	$ 7,054
			$0	$0	$0	Cable tray materials	each	$20,000	1.0	$ 20,000
Technical Services Manager: unit rate in hours			**$101**	**$98**						**$ -**
Oversight of work in substation, switching review	40		$4,046	$0						$ -
						Police Details	week	$2,427	1.0	$ 2,427
TOTAL:			**$99,014**	**$0**	**$11,296**					**$ 149,487**

PROJECT TOTAL:	**$259,797**

FY19 ESTIMATED SPENDING	**$142,419**
CY19 ESTIMATED SPENDING	**$117,378**

CAPITAL PROJECT SUMMARY

Project Name: 4W6 Getaway Replacement, W **Project #:** 132

Project Schedule: CY19 **Project Manager:** Manole Agouridis, Distribution Engineer

Reason for Expenditure:

To upgrade 1,635 circuit feet of underground cable from Station 4 to West Street. The cable is being replaced to add capacity and replace the existing getaway, which is nearing the end of its useful life.

Brief Description/Scope:
The 4W6 getaway has five (5) sections of underground cable. It is assumed this project will only focus on replacing the existing 500 CU cable with 750 CU cable.

Barriers:
Potential unforeseen issues with existing duct bank, conduit, and/or manholes that need to be addressed.

Change in Scope of Work From Prior Fiscal Year: Increase (Decrease)
Not applicable.

Status Update From Prior Fiscal Year:
Not applicable.

CAPITAL PROJECT COST SHEET

PROJECT NAME: 4W6 Getaway Replacement, W **SCHEDULE:** CY19

	RMLD LABOR					MATERIALS/CONTRACTORS				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	Overtime		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
Line Department: 2-man crew - unit rate in weeks			**$6,455**	**$6,267**	**$920**					
Prepping for new cable installation loading trailers, pumping down manholes, etc.	2		$12,910	$0	$1,840	15kV cable, 750 MCM 1/C , strand shield, EPR	foot	$14.43	4905.0	$ 70,779
New cable installation - pulling in cable	2		$12,910	$0	$1,840					$ -
Terminating and splicing , and wrapping cable, labeling, etc.	2		$12,910	$0	$1,840	Underground contractor assist	week	$7,054	1.2	$ 8,464
			$0	$0	$0	Cold shring splice or terminatin, and ancillary	point	$1,060	6.0	$ 6,360
Existing cable removal, and scrapping cable	2		$12,910	$0	$1,840					$ -
			$0	$0	$0					$ -
Line Operations Supervision: unit rate in hours			**$106**	**$103**						
Supervision of Line crews	53		$5,606	$0						$ -
Engineering: unit rate in hours			**$80**	**$78**						**$ -**
Project management, write, review and administer switching. Create work order	40		$3,205	$0						$ -
										$ -
Senior Tech: unit rate in hours			**$82**	**$80**	**$21**					**$ -**
Switching cable out and back	8		$657	$0	$168					$ -
Testing and commissioning of new cable.	8		$657	$0	$168					
			$0	$0	$0					
Technical Services Manager: unit rate in hours			**$101**	**$98**						**$ -**
Oversight of work in substation, switching review	8		$809	$0						$ -
						Police Details	week	$2,427	0.5	$ 1,214
TOTAL:			**$62,577**	**$0**	**$7,696**					**$ 86,817**

PROJECT TOTAL: $157,090

CAPITAL PROJECT SUMMARY

Project Name: 4W16 Getaway Replacement, W **Project #:** 135

Project Schedule: CY19 **Project Manager:** Manole Agouridis, Distribution Engineer

Reason for Expenditure:
Upgrade 2,250 circuit feet of underground cable from Station 4 to Causeway Road/Lowell Street. The cable is being replaced to add capacity and replace the existing overloaded getaway, which is nearing the end of its useful life.

Brief Description/Scope:
The 4W16 getaway has six (6) sections of underground cable. It is assumed this project will only focus on replacing the existing 500 CU cable with 750 CU cable.

Barriers:
Potential unforeseen issues with existing duct bank, conduit, and/or manholes that need to be addressed.

Change in Scope of Work From Prior Fiscal Year: Increase (Decrease)

Not applicable.

Status Update From Prior Fiscal Year:

Not applicable.

CAPITAL PROJECT COST SHEET

PROJECT NAME: 4W16 Getaway Replacement, W **SCHEDULE:** CY19

	RMLD LABOR					MATERIALS/CONTRACTORS				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	Overtime		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
Line Department: 2-man crew - unit rate in weeks			**$6,455**	**$6,267**	**$920**					
Prepping for new cable installation loading trailers, pumping down manholes, etc.	2.5		$16,138	$0	$2,300	15kV cable, 750 MCM 1/C , strand shield, EPR	foot	$14.43	6750.0	$ 97,403
New cable installation - pulling in cable	2.5		$16,138	$0	$2,300					$ -
Terminating and splicing , and wrapping cable, labeling, etc.	2.5		$16,138	$0	$2,300	Underground contractor assist	week	$7,054	1.4	$ 9,875
			$0	$0	$0	Cold shrink splice or termination, and ancillary	point	$1,092	7.0	$ 7,644
Existing cable removal, and scrapping cable	2.5		$16,138	$0	$2,300					
			$0	$0	$0					$ -
Line Operations Supervision: unit rate in hours			**$106**	**$103**						
Supervision of Line crews	64		$6,770	$0						$ -
Engineering: unit rate in hours			**$80**	**$78**						**$ -**
Project management, write, review and administer switching. Create work order	40		$3,205	$0						$ -
										$ -
Senior Tech: unit rate in hours			**$82**	**$80**	**$21**					**$ -**
Switching cable out and back	8		$657	$0	$168					$ -
Testing and commissioning of new cable.	8		$657	$0	$168					
			$0	$0	$0					
Technical Services Manager: unit rate in hours			**$101**	**$98**						**$ -**
Oversight of work in substation, switching review	8		$809	$0	$0					$ -
						Police Details	week	$2,427	2.0	$ 4,855
TOTAL:			**$76,651**	**$0**	**$9,536**					**$ 119,777**

PROJECT TOTAL: $205,964

CAPITAL PROJECT SUMMARY

Project Name: MA-125 New Pole Line Installation for New Wilmington Substation **Project #:** 124

Project Schedule: FY19-CY20 **Project Manager:** Manole Agouridis, Distribution Engineer

Reason for Expenditure:
To construct a pole line to interconnect the proposed Wilmington substation to RMLD's existing distribution system. The new pole line shall go from the proposed Wilmington substation, west to Ballardvale Street, and east to Andover Street. This shall include design, labor, and materials for all overhead line construction for this purpose.

Brief Description/Scope:
The aforementioned reason for expenditure covers an estimated 3,000 foot pole line that shall span MA-125 from Ballardvale Street to Andover Street. An estimated 30 poles shall be required. This pole line shall be used for riser pole getaways from the proposed Wilmington substation, and shall interconnect the new substation to RMLD's existing overhead distribution system. Budgeted costs in FY19 and CY19 are associated with design, permitting, and approvals. This project **shall exclude** design, labor, and materials for underground getaways, ducts banks, cables, isolation disconnects and associated work at riser poles which shall be included in "New Wilmington Substation" budget line item.

Barriers:
This project shall coincide with the proposed Wilmington substation. If the location of the substation is moved, this capital project shall be revisited/reprioritized accordingly.

Change in Scope of Work From Prior Fiscal Year: Increase (Decrease)
Not applicable.

Status Update From Prior Fiscal Year:
Not applicable.

CAPITAL PROJECT COST SHEET

PROJECT NAME: MA-125 Pole Line Installation for New Wilmington Substation

SCHEDULE: FY19-CY20

	RMLD LABOR					MATERIALS/CONTRACTORS				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	Overtime		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
Line Department: 2-man crew - unit rate in weeks			**$6,455**	**$6,267**	**$920**					
Set (30) 55' CL1 poles	6		$38,731	$0	$5,520	55'-class 1 poles	each	$800	30	$ 24,000
Frame (30) poles for four (4) circuits	6		$38,731	$0	$5,520	15 kV Hendrix brackets, miscellaneous hardware, primary connectors (spacers, insulators, etc.) - four (4) circuits	per pole	$800	30	$ 24,000
Set up for 12,000' spacer install	8		$51,642	$0	$7,360	0.052 messenger wire	foot	$1.23	12,000	$ 14,760
Pull-in and install 12,000' of 556	8		$51,642	$0	$7,360	15kV, 556 AL spacer cable	foot	$2.02	36,000	$ 72,720
Tie in Scada-Mate switches	2		$12,910	$0	$1,840	Scada-mate Switches for tie switches to backup	each	$26,900	6	$ 161,400
			$0	$0	$0	Scada-Mate/IntelliTeam License	each	$2,500	6	$ 15,000
			$0	$0	$0					$ -
			$0	$0	$0					$ -
Line Operations Supervision: unit rate in hours			**$106**	**$103**						
Supervision of Line crews	120		$12,694	$0						$ -
Engineering: unit rate in hours			**$80**	**$78**						
Prepare construction doucments and PoleForeman, 605s	120		$9,614	$0						$ -
Switching, review and oversight	60		$4,807	$0						$ -
			$0	$0						$ -
Senior Tech: unit rate in hours			**$82**	**$80**	**$21**					
Switching as needed	48		$3,944	$0	$1,008					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
Technical Services Manager: unit rate in hours			**$101**	**$98**						
Switching review and oversight	**48**		$4,855	**$0**						$ -
			$0	$0						$ -
						Police Details	week	$2,427	22.0	$ 53,405
TOTAL:			**$229,572**	**$0**	**$28,608**					**$ 365,285**

PROJECT TOTAL:	**$623,464**

FY19 ESTIMATED SPENDING	**$5,000**
CY19 ESTIMATED SPENDING	**$5,000**
CY20 ESTIMATED SPENDING	**$613,464**

CAPITAL PROJECT SUMMARY

Project Name: Underground Line Extension Marion Street, W

Project #: 120

Project Schedule: CY19

Project Manager: Vaughan Bryan, Distribution Engineer

Reason for Expenditure:
The current underground line is a single phase line that serves Marion Street and Eleanor Drive. A 25-lot subdivision is being added to the end of Eleanor Drive with a another 16 plus acres that could possibly be developed at the back of this subdivision. With the increase in load, the existing single-phase line will not be able to service the area.

Brief Description/Scope:
Install a 3 phase line to meet the demand of existing and potential load growth. Install approximately 2,050 feet of underground electrical cable, make terminations, splice, elbows, and test. Install 200 feet of overhead spacer cable, transfer and frame poles.

Barriers:
None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year: Increase (Decrease)
Not applicable.

Status Update From Prior Fiscal Year:
Not applicable.

CAPITAL PROJECT COST SHEET

PROJECT NAME: Underground Line Extension, Marion Street, W **SCHEDULE:** CY19

	RMLD LABOR					MATERIALS/CONTRACTORS				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	Overtime		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
Line Department: 2-man crew - unit rate in weeks			**$6,455**	**$6,267**	**$920**					
Rope and pull in three-phase underground cable	1		$6,455	$0	$920	15kV #2 CU URD cable	foot	$2.00	7,000.0	$ 14,000
Splice elbows, riser and terminations	3		$19,366	$0	$2,760	600 volt #2 CU neutral	foot	$1.00	2,333.0	$ 2,333
Install overhead cables and transfer poles	1		$6,455	$0	$920	Miscellaneous underground splice terminations, riser, hardware	point	$5,040	1.0	$ 5,040
			$0	$0	$0	Miscellaneous overhead hardware and wire	point	$3,600	1.0	$ 3,600
			$0	$0	$0	Underground contractor assist	week	$7,054	4.1	$ 28,569
			$0	$0	$0					$ -
Line Operations Supervision: unit rate in hours			**$106**	**$103**						
Supervision of Line crews	64		$6,770	$0						$ -
Engineering: unit rate in hours			**$80**	**$78**						
Switching, scheduling, notices, plans, etc.	32		$2,564	$0						$ -
			$0	$0						$ -
			$0	$0						$ -
Senior Tech: unit rate in hours			**$82**	**$80**	**$21**					
Splice, elbow and termination testing	16		$1,315	$0	$336					$ -
			$0	$0	$0					$ -
Technical Services Manager: unit rate in hours			**$101**	**$98**						
Assist with testing and scheduling	4		$405	**$0**						$ -
			$0	$0						$ -
						Police Details	week	$2,427		$ -
TOTAL:			**$43,329**	**$0**	**$4,936**					**$ 53,542**

PROJECT TOTAL: $101,807

CAPITAL PROJECT SUMMARY

Project Name: 5W5 Andover Access Road Upgrade, W **Project #:** 121

Project Schedule: CY19 **Project Manager:** Manole Agouridis, Distribution Engineer

Reason for Expenditure:
This project calls to replace existing open wire primary cable with a 556 AL spacer cable system to improve reliability on the 5W5 circuit. This area has a high density of trees, and has been problematic in the past.

Brief Description/Scope:
Upgrade approximately 1,000 feet of open wire primary cable to 556 AL spacer cable. Poles shall be upgraded as needed. This is a section between Andover Street and Salem Street that runs parallel to I-93 for approximately eight (8) pole spans. This road is referred to as Andover Access Road.

Barriers:
None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year: Increase (Decrease)
Not applicable.

Status Update From Prior Fiscal Year:
Not applicable.

CAPITAL PROJECT COST SHEET

PROJECT NAME: Andover Access Road Upgrade **SCHEDULE:** CY19

	RMLD LABOR					MATERIALS/CONTRACTORS				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	Overtime		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
Line Department: 2-man crew - unit rate in weeks			**$6,455**	**$6,267**	**$920**					
Set (4) 55' class 1 poles	2		$12,910	$0	$1,840	55' class 1 poles	each	$800	4.0	$ 3,200
Frame and transfer (7) poles for one (1) circuit	2		$12,910	$0	$1,840	15 kV Hendrix brackets, miscellaneous hardware, primary connectors (spacers, insulators, etc.) - one (1) circuit	per pole	$200	7.0	$ 1,400
Set up for 1,000' messenger	2		$12,910	$0	$1,840	0.052 messenger wire	foot	$1.23	1000.0	$ 1,230
Pull in and install 3,000' of 556	2		$12,910	$0	$1,840	15kV, 556 AL spacer cable	foot	$2.02	3000.0	$ 6,060
			$0	$0	$0					$ -
Line Operations Supervision: unit rate in hours			**$106**	**$103**						
Supervision of Line crews	20		$2,116	$0						$ -
Engineering: unit rate in hours			**$80**	**$78**						
Prepare construction documents and PoleForeman, 605A's	40		$3,205	$0						$ -
Switching, review and oversight	12		$961	$0						$ -
			$0	$0						$ -
Senior Tech: unit rate in hours			**$82**	**$80**	**$21**					
Switching as needed	8		$657	$0	$168					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
Technical Services Manager: unit rate in hours			**$101**	**$98**						
Switching, review and oversight	8		$809	**$0**						$ -
			$0	$0						$ -
						Police Details	week	$2,427	4.0	$ 9,710
TOTAL:			**$59,390**	**$0**	**$7,528**					**$ 21,600**

PROJECT TOTAL: $88,518

CAPITAL PROJECT SUMMARY

Project Name: 211-503 and 211-504 Fiber Extension **Project #:** 130

Project Schedule: CY19 **Project Manager:** Nick D'Alleva, Technical Services Manager

Reason for Expenditure:
NSTAR is replacing existing static wires with optical ground wire (OPGW) to provide a means for diverse fiber communications on the NSTAR system. This project will address the need for fiber to support Northeast Power Coordinating Council (NPCC) Directory 1, high speed, relay protection upgrades required on three terminal lines (211-503 and 211-504) between National Grid's Tewksbury Station #17 and Reading Station #494. This will also enable RMLD to migrate its remote terminal unit (RTU) communications.

Brief Description/Scope:
NSTAR to install 1.4 miles of OPGW static wire and RMLD to install 0.5 miles of OPGW static wire, multiplexer communication equipment, and fiber termination equipment.

Barriers:
None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year: Increase (Decrease)
Not applicable.

Status Update From Prior Fiscal Year:
Not applicable.

CAPITAL PROJECT COST SHEET

PROJECT NAME: 211-503 and 211-504 Fiber Extension **SCHEDULE:** CY19

	RMLD LABOR					MATERIALS/CONTRACTORS				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	Overtime		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
Line Department: 2-man crew - unit rate in weeks			**$6,455**	**$6,267**	**$920**					
			$0	$0	$0	Payment to Eversource for fiber extension	each	$452,000	1.0	$ 452,000
			$0	$0	$0	Fiber mux	each	$10,000	1.0	$ 10,000
			$0	$0	$0	Fiber installation and termination at Station 4	each	$60,000	1.0	$ 60,000
			$0	$0	$0					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
Line Operations Supervision: unit rate in hours			**$106**	**$103**						
Supervision of Line crews			$0	$0						$ -
Engineering: unit rate in hours			**$80**	**$78**						
			$0	$0						$ -
			$0	$0						$ -
			$0	$0						$ -
Senior Tech: unit rate in hours			**$82**	**$80**	**$21**					
Fiber Installation	120		$9,860	$0	$2,520					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
Technical Services Manager: unit rate in hours			**$101**	**$98**						
			$0	**$0**						$ -
			$0	$0						$ -
						Police Details	week	$2,427		$ -
TOTAL:			**$9,860**	**$0**	**$2,520**					**$ 522,000**

PROJECT TOTAL:	**$534,380**

CAPITAL PROJECT SUMMARY

Project Name: AMI Mesh Network Expansion and Meter Replacement **Project #:** 112

Project Schedule: Annual **Project Manager:** Nick D'Alleva, Technical Services Manager

Reason for Expenditure:
In order to expand RMLD's AMI mesh network, additional relays, retrofit kits, and meters need to be purchased and installed. These new/retrofit meters will give the RMLD the ability to monitor voltage, current, demand, power factor and power quality. They will also provide end-of-the-line voltage, as well as power outage and power restoration notification to RMLD's outage management system.

Brief Description/Scope:
Purchase and install meters and retrofit kits that are compatible with the AMI Mesh Network.

Barriers:
None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year: Increase (Decrease)

Status Update From Prior Fiscal Year:

CAPITAL PROJECT COST SHEET

PROJECT NAME: AMI Mesh Network Expansion and Meter Replacement

SCHEDULE: CY19

	RMLD LABOR					MATERIALS/CONTRACTORS				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	Overtime		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
Line Department: 2-man crew - unit rate in weeks			**$6,455**	**$6,267**	**$920**					
			$0	$0	$0	Fiber Splicing	2	$500	70.0	$ 35,000
			$0	$0	$0					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
Line Operations Supervision: unit rate in hours			**$106**	**$103**						
			$0	$0						$ -
Engineering: unit rate in hours			**$80**	**$78**						**$ -**
			$0	$0						$ -
										$ -
Meter Tech: unit rate in hours			**$50**	**$48**	**$21**					**$ -**
Install relays and meters to expand AMI Mesh Network	500		$24,980	$0	$10,500	Relays	each	$300	40	$ 12,000
						AMI Retrofits	each	$100	250	$ 25,000
						Commercial meters	each	$700	200	$ 140,000
						Gateways	each	$5,000	2	$ 10,000
						Single-phase meters	each	$122	250	$ 30,500
Technical Services Manager: unit rate in hours			**$101**	**$98**						**$ -**
Oversight of project	120		$12,138	$0						$ -
						Police Details	week	$2,427		$ -
TOTAL:			**$37,118**	**$0**	**$10,500**					**$ 252,500**

PROJECT TOTAL:	**$300,118**

CAPITAL PROJECT SUMMARY

Project Name: Communication Equipment (for Fiber Optic) **Project #:** 126

Project Schedule: Annual **Project Manager:** Peter Price, Senior Distribution Engineer
Brian Smith, Senior Distribution Engineer

Reason for Expenditure:
As the RMLD expands its use of the fiber optic network to establish communication with metering equipment, recloser controls, capacitor bank controls and other distribution equipment, the Department will create fiber nodes at various locations along the fiber optic network. Each node will require an enclosure, a fiber optic interface, a power supply, cabling, fiber optic cable, and the termination of the fiber optic cable.

Brief Description/Scope:
Purchase materials and procure fiber optic cable splicers as needed.

Barriers:
None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year:

Status Update:
The Department has expanded the Fiber Optic Network at existing fiber nodes for use with the distribution automation projects.

CAPITAL PROJECT COST SHEET

PROJECT NAME: Communication Equipment (Fiber Optic) **SCHEDULE:** CY19

	RMLD LABOR					MATERIALS/CONTRACTORS				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	Overtime		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
Line Department: 2-man crew - unit rate in weeks			**$6,455**	**$6,267**	**$920**					
			$0	$0	$0	Siemens RS900, 9 port managed ethernet switch	each	$1,500	12	$ 18,000
			$0	$0	$0	Fiber optic patch cords SC - SC	each	$5	72	$ 360
			$0	$0	$0	Pole-mount fiber optic cable enclosure with patch panel and UPS	each	$2,500	3	$ 7,500
			$0	$0	$0	ADSS fiber optic cable 72	ft	$1	10000	$ 10,000
			$0	$0	$0	Contractor: Fiber optic cable splicing and materials.	day	$1,600	5	$ 8,000
			$0	$0	$0					$ -
Line Operations Supervision: unit rate in hours			**$106**	**$103**						
			$0	$0						$ -
Engineering: unit rate in hours			**$80**	**$78**						**$ -**
			$0	$0						$ -
										$ -
Senior Tech: unit rate in hours			**$82**	**$80**	**$21**					**$ -**
			$0	$0	$0					$ -
			$0	$0	$0					
Technical Services Manager: unit rate in hours			**$101**	**$98**						**$ -**
			$0	$0						$ -
						Police Details	week	$2,427	2.0	$ 4,855
TOTAL:			**$0**	**$0**	**$0**					**$ 48,715**

PROJECT TOTAL:	**$48,715**

CAPITAL PROJECT SUMMARY

Project Name: Substation Equipment Upgrade **Project #:** 111

Project Schedule: Annual **Project Manager:** Nick D'Alleva, Technical Services Manager

Reason for Expenditure:
United Power Group and RMLD personnel have identified equipment that needs to be replaced or upgraded as a result of their condition assessment of our substation equipment.

Brief Description/Scope:
The existing grounding equipment is old and in disrepair. RMLD will purchase 115kV personal grounding equipment to be utilized at Station 3 and Station 4. We will also purchase additional grounding equipment for Station 3 in order to utilize the existing grounding carts, which are used to safely ground distribution circuits and substation equipment for maintenance activities.

Barriers:
Availability of replacement parts.

Change in Scope From Prior Fiscal Year:
None.

Status Update:
Not applicable.

CAPITAL PROJECT COST SHEET

PROJECT NAME: Substation Equipment Upgrade **SCHEDULE:** CY19

	RMLD LABOR					MATERIALS/CONTRACTORS				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	Overtime		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
Line Department: 2-man crew - unit rate in weeks			**$6,455**	**$6,267**	**$920**					
			$0	$0	$0					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
Line Operations Supervision: unit rate in hours			**$106**	**$103**						
			$0	$0						$ -
Engineering: unit rate in hours			**$80**	**$78**						**$ -**
			$0	$0						$ -
										$ -
Senior Tech: unit rate in hours			**$82**	**$80**	**$21**					**$ -**
Install equipment	100		$8,217	$0	$2,100	115kV grounding equipment for Station 3 and Station 4.	each	$56,000	1	$ 56,000
			$0	$0	$0					
Technical Services Manager: unit rate in hours			**$101**	**$98**						**$ -**
			$0	$0						$ -
						Police Details	week	$2,427		$ -
TOTAL:			**$8,217**	**$0**	**$2,100**					**$ 56,000**

PROJECT TOTAL:	**$66,317**

CAPITAL PROJECT SUMMARY

Project Name: Power/Lab and Tool Equipment **Project #:** 115

Project Schedule: Annual **Project Manager:** n/a

Reason for Expenditure:
This is an amount reserved for purchase of power/lab and tool equipment.

Brief Description/Scope:
Refer to the project cost sheet for planned purchases for CY19.

Barriers:
None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year: Increase (Decrease)
Not applicable.

Status Update From Prior Fiscal Year:
Not applicable.

CAPITAL PROJECT COST SHEET

PROJECT NAME: Power/Lab and Tool Equipment **SCHEDULE:** CY19

	RMLD LABOR					MATERIALS/CONTRACTORS				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	Overtime		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
Line Department: 2-man crew - unit rate in weeks			**$6,455**	**$6,267**	**$920**					
			$0	$0	$0	Electric phasing meter/hi-pot	each	$3,000	6	$ 18,000
			$0	$0	$0	In-service meter accuracy tester for commercial metering	each	$40,000	1	$ 40,000
			$0	$0	$0	Four point battery hydraulic press	each	$3,800	2	$ 7,600
			$0	$0	$0	ACSR Ratchet Cutters	each	$508	12	$ 6,100
						Wireless phasing tool and base	each	$12,499	1	$ 12,499
										$ -
										$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
Line Operations Supervision: unit rate in hours			**$106**	**$103**						
			$0	$0						$ -
Engineering: unit rate in hours			**$80**	**$78**						**$ -**
			$0	$0						$ -
										$ -
Senior Tech: unit rate in hours			**$82**	**$80**	**$0**					**$ -**
			$0	$0	$0					$ -
			$0	$0	$0					
Technical Services Manager: unit rate in hours			**$101**	**$98**						**$ -**
			$0	$0						$ -
						Police Details	week	$2,427		$ -
TOTAL:			**$0**	**$0**	**$0**					**$ 84,199**

PROJECT TOTAL:	**$84,199**

CAPITAL PROJECT SUMMARY

Project Name: Meters **Project #:** 117

Project Schedule: Annual **Project Manager:** Nick D'Alleva, Technical Services Manager

Reason for Expenditure:
Purchase of meters and metering equipment for new construction, upgrades, and failures.

Brief Description/Scope:
Two hundred residential and commercial meters as well as miscellaneous hardware will be purchases for stock.

Barriers:
None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year:
Not applicable.

Status Update:
Not applicable.

CAPITAL PROJECT COST SHEET

PROJECT NAME: Meters **SCHEDULE:** CY19

	RMLD LABOR					MATERIALS/CONTRACTORS				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	Overtime		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
Line Department: 2-man crew - unit rate in weeks			**$6,455**	**$6,267**	**$920**					
			$0	$0	$0	Residential and commercial meters for stock.	each	$200	200	$ 40,000
			$0	$0	$0	Potential transformers for stock.	each	$1,000	20	$ 20,000
			$0	$0	$0	Current transformers for stock.	each	$1,000	20	$ 20,000
			$0	$0	$0					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
Line Operations Supervision: unit rate in hours			**$106**	**$103**	**$21**					
			$0	$0	$0					$ -
Engineering: unit rate in hours			**$80**	**$78**	**$21**					**$ -**
			$0	$0	$0					$ -
										$ -
Senior Tech: unit rate in hours			**$82**	**$80**	**$21**					**$ -**
			$0	$0	$0					$ -
			$0	$0	$0					
Technical Services Manager: unit rate in hours			**$101**	**$98**	**$21**					**$ -**
			$0	$0	$0					$ -
						Police Details	week	$2,427		$ -
TOTAL:			**$0**	**$0**	**$0**					**$ 80,000**

PROJECT TOTAL:	**$80,000**

CAPITAL PROJECT SUMMARY

Project Name: Transformers and Capacitors **Project #:** 116

Project Schedule: Annual **Project Manager:** Vaughan Bryan, Distribution Engineer

Reason for Expenditure:
A major quantity of standard units is necessary for proposed projects and stock on an ongoing basis.

Brief Description/Scope:
Transformer and capacitor bids will be prepared and units purchased as outlined on the Project Cost Sheet.

Barriers:
None anticipated at this time

Change in Scope of Work From Prior Fiscal Year:
Not applicable.

Status Update:
Not applicable.

CAPITAL PROJECT COST SHEET

PROJECT NAME: Transformers and Capacitors **SCHEDULE:** CY19

	RMLD LABOR					MATERIALS/CONTRACTORS				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	Overtime		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
Line Department: 2-man crew - unit rate in weeks			**$6,455**	**$6,267**	**$920**					
			$0	$0	$0	Three-phase pad-mount transformers for proposed commercial services and stock	each	$10,500	27	$ 283,500
			$0	$0	$0	Single-phase pad-mount transformers for proposed subdivisions and stock.	each	$3,800	25	$ 95,000
			$0	$0	$0	Three-phase pole-mount transformers for proposed commercial services and stock	each	$5,500	12	$ 66,000
			$0	$0	$0	Single-phase pole-mount transformers for proposed residential services and stock	each	$3,500	35	$ 122,500
			$0	$0	$0	1,200 kVar capacitor banks	each	$12,500	4	$ 50,000
			$0	$0	$0					$ -
Line Operations Supervision: unit rate in hours			**$106**	**$103**	**$21**					
			$0	$0	$0					$ -
Engineering: unit rate in hours			**$80**	**$78**	**$21**					**$ -**
			$0	$0	$0					$ -
										$ -
Senior Tech: unit rate in hours			**$82**	**$80**	**$21**					**$ -**
			$0	$0	$0					$ -
			$0	$0	$0					
Technical Services Manager: unit rate in hours			**$101**	**$98**	**$21**					**$ -**
			$0	$0	$0					$ -
						Police Details	week	$2,427		$ -
TOTAL:			**$0**	**$0**	**$0**					**$ 617,000**

PROJECT TOTAL:	**$617,000**

CAPITAL PROJECT SUMMARY

Project Name: Pole Replacement Program, R, NR **Project #:** 175

Project Schedule: Annual **Project Manager:** John McDonagh, General Line Foreman

Reason for Expenditure:
In 2015 RMLD initiated a Pole Inspection Program. Ten percent of RMLD-owned poles are inspected annually by an outside contractor using various technology including resistorgraph technology. This Inspection Program provides RMLD with verifiable data on pole condition. Testing (through FY18), has identified 475 poles that were recommended for replacement. Annual testing takes place each year in the Fall.

Brief Description/Scope:
RMLD will replace 50 poles per year that are identified as part of the Pole Inspection Program. This project includes setting poles, transfers, and replacement of secondary services as needed.

Barriers:
None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year: Increase (Decrease)
Not applicable.

Status Update From Prior Fiscal Year:
Since the inception of the Pole Inspection Program a total of 235 poles have been replaced, and 188 transfers have been completed (as of September 2018).

CAPITAL PROJECT COST SHEET

PROJECT NAME: Pole Replacement Program **SCHEDULE:** CY19

	RMLD LABOR					MATERIALS/CONTRACTORS				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	Overtime		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
Line Department: 2-man crew - unit rate in weeks			**$6,455**	**$6,267**	**$920**					
Set and transfer 50 poles.	20	5	$129,105	$31,334	$23,000	Poles	each	$400	50.0	$ 20,000
			$0	$0	$0	Miscellaneous hardware (bolts, etc.)	per pole	$90	50.0	$ 4,500
Service upgrades as necessary	1.2		$7,746	$0	$1,104	Connectors and wires (for service upgrades)	per service	$213	50.0	$ 10,650
			$0	$0	$0					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
Line Operations Supervision: unit rate in hours			**$106**	**$103**						
Crew supervision	200	40	$21,156	$4,108						$ -
Engineering: unit rate in hours			**$80**	**$78**						**$ -**
Pole Foreman and DigSafes	40		$3,205	$0						$ -
										$ -
Senior Tech: unit rate in hours			**$82**	**$80**	**$21**					**$ -**
			$0	$0	$0					$ -
			$0	$0	$0					
Technical Services Manager: unit rate in hours			**$101**	**$98**						**$ -**
			$0	$0						$ -
						Police Details	week	$2,427	3.0	$ 7,282
TOTAL:			**$161,212**	**$35,442**	**$24,104**					**$ 42,432**

PROJECT TOTAL:	**$263,190**

CAPITAL PROJECT SUMMARY

Project Name: Secondary and Main Replacement Program **Project #:** 458

Project Schedule: Annual **Project Manager:** John McDonagh, General Line Foreman
All Engineers

Reason for Expenditure:

This preventive maintenance program is intended to upgrade and improve system reliability and address aging infrastructure.

Brief Description/Scope:

This program identifies aging infrastructure and addresses a variety of work to include: secondary upgrades and service drop upgrades as needed. The pole replacements, primary cable replacement and transformer upgrades will be done in conjunction with the Stepdown Area Conversions, Project 107. Two areas will be targeted for upgrade in CY19 in conjunction with the Stepdown Area Upgrades Project 107.

Barriers:

Future upgrades are in Verizon set territory and could result in pole setting delays.

Change in Scope of Work from Prior Fiscal Year: Increase (Decrease)

Not applicable.

Status Update from Prior Fiscal Year:

Not applicable.

CAPITAL PROJECT COST SHEET

PROJECT NAME: Secondary & Main Replacement Program
Project 1: Gerry & Drury Road Area, LC

SCHEDULE: CY19

	RMLD LABOR					MATERIALS/CONTRACTORS				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	Overtime		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
Line Department: 2-man crew - unit rate in weeks			**$6,455**	**$6,267**	**$920**					
Frame up to 28 Verizon set poles in the Gerry & Drury Road area in LC for new secondary cable	1.4		$9,037	$0	$1,288	Secondary hardware, brackets, connectors, etc	each	$54.00	56	$ 3,024
Install 4,100' of secondary cable	4.8		$30,985	$0	$4,416	4/0-3/C secondary cable	foot	$1.60	4100	$ 6,560
Replace 56 services	4		$25,821	$0	$3,680	120' of 1/0 - 3/C service wire for each service	each	$100.00	56	$ 5,600
			$0	$0	$0					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
Line Operations Supervision: unit rate in hours			**$106**	**$103**						
Supervision of Line crews	80		$8,462	$0						$ -
Engineering: unit rate in hours			**$80**	**$78**						**$ -**
Construction plans, outage notices, etc.	40		$3,205	$0						$ -
										$ -
Senior Tech: unit rate in hours			**$82**	**$80**	**$21**					**$ -**
			$0	$0	$0					$ -
			$0	$0	$0					
Technical Services Manager: unit rate in hours			**$101**	**$98**						**$ -**
			$0	$0						$ -
						Police Details	week	$2,427	4.5	$ 10,924
TOTAL:			**$77,511**	**$0**	**$9,384**					**$ 26,108**

PROJECT TOTAL:	**$113,002**

CAPITAL PROJECT COST SHEET

PROJECT NAME: **Secondary & Main Replacement Program** Project 2: Thomas, Putney, Bancroft, Atherton Area, LC

SCHEDULE: CY19

	RMLD LABOR					MATERIALS/CONTRACTORS				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	Overtime		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
Line Department: 2-man crew - unit rate in weeks			**$6,455**	**$6,267**	**$920**					
Frame up to 67 Verizon set poles in the Thomas, Putney, Bancroft, Atherton area in LC for new secondary cable	6.7		$43,250	$0	$6,164	Secondary hardware, brackets, connectors, etc	each	$54.00	116	$ 6,264
Install 6,800' of secondary cable	8		$51,642	$0	$7,360	4/0-3/C secondary cable	foot	$1.60	6800	$ 10,880
Replace up to 116 services	8.7		$56,161	$0	$8,004	120' of 1/0 - 3/C service wire for each service	each	$100.00	116	$ 11,600
			$0	$0	$0					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
Line Operations Supervision: unit rate in hours			**$106**	**$103**						
Supervision of Line crews	120		$12,694	$0						$ -
Engineering: unit rate in hours			**$80**	**$78**						**$ -**
Construction plans, outage notices, etc.	80		$6,410	$0						$ -
										$ -
Senior Tech: unit rate in hours			**$82**	**$80**	**$21**					**$ -**
			$0	$0	$0					$ -
			$0	$0	$0					
Technical Services Manager: unit rate in hours			**$101**	**$98**						**$ -**
			$0	$0						$ -
						Police Details	week	$2,427	4.5	$ 10,924
TOTAL:			**$170,156**	**$0**	**$21,528**					**$ 39,668**

PROJECT TOTAL:	**$231,351**

CAPITAL PROJECT SUMMARY

Project Name: 13.8kV Upgrade (Step-down Area, etc.) All Towns **Project #:** 107

Project Schedule: Annual **Project Manager:** All Engineers

Reason for Expenditure:
There are 35 step-down areas left in the RMLD service territory. These areas on the RMLD distribution system were originally fed from 5 kV distribution circuits. When RMLD began moving load over to the 13.8kV distribution circuits, most areas were converted but some areas were re-fed with pole-mount, step-down transformers. Most of the distribution system in these areas are 30+ years old and in need of upgrade before they can be converted.

Brief Description/Scope:

Replace poles, primary cable, and overhead transformers, as needed, in the various step-down areas. Convert areas to 13.8kV and remove step-down transformers. The secondary cable and service upgrades will be done in conjunction with Project 458.

Barriers:
Some areas are Verizon set areas.

Change in Scope of Work From Prior Fiscal Year:
Not applicable.

Status Update:
A conversion has been completed on Federal Street, Main Street, Vine Street and Timberneck Drive in Reading and Putnam Road, Peter Road and Anthony Road in North Reading. Additional conversions scheduled for completion by December 2018 include Grove Street and McDonald Road in Wilmington, and Adams Street in North Reading.

CAPITAL PROJECT COST SHEET

PROJECT NAME: **13.8kV Upgrade (Step-down Areas, etc.)**
Project 1: Gerry & Drury Road Area, LC

SCHEDULE: CY19

	RMLD LABOR					MATERIALS/CONTRACTORS				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	Overtime		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
Line Department: 2-man crew - unit rate in weeks			**$6,455**	**$6,267**	**$920**					
Frame up to 28 Verizon set poles in the Gerry & Drury Road area in LC for new primary cable	2.6		$16,784	$0	$2,392	Hardware, insulators, connectors, guys, cutouts, taps, brackets, ground rods, etc	each	$180.00	28	$ 5,040
Install 2,800' of primary cable	3.6		$23,239	$0	$3,312	1/0 AAAC Primary	foot	$0.87	2800	$ 2,436
Replace seven (7) polemount transformers	2.8		$18,075	$0	$2,576					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
Line Operations Supervision: unit rate in hours			**$106**	**$103**						
Supervision of Line crews	80		$8,462	$0						$ -
Engineering: unit rate in hours			**$80**	**$78**						**$ -**
Pole Foreman, 605As, construction drawings, switching orders, etc.	105		$8,413	$0						$ -
										$ -
Senior Tech: unit rate in hours			**$82**	**$80**	**$21**					**$ -**
			$0	$0	$0					$ -
			$0	$0	$0					
Technical Services Manager: unit rate in hours			**$101**	**$98**						**$ -**
			$0	$0						$ -
						Police Details	week	$2,427	4.5	$ 10,924
TOTAL:			**$74,972**	**$0**	**$8,280**					**$ 18,400**

PROJECT TOTAL:	**$101,652**

CAPITAL PROJECT COST SHEET

PROJECT NAME: **13.8kV Upgrade (Step-down Areas, etc.)** Project 2: Thomas, Putney, Bancroft, Atherton Area, LC

SCHEDULE: CY19

	RMLD LABOR					MATERIALS/CONTRACTORS				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	Overtime		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
Line Department: 2-man crew - unit rate in weeks			**$6,455**	**$6,267**	**$920**					
Frame up to 28 Verizon set poles in the Gerry & Drury Road area in LC for new primary cable	9.2		$59,388	$0	$8,464	Hardware, insulators, connectors, guys, cutouts, taps, brackets, ground rods, etc	each	$180.00	67	$ 12,060
Install 2,800' of primary cable	6.6		$42,605	$0	$6,072	1/0 AAAC Primary	foot	$0.87	5500	$ 4,785
Replace seven (7) polemount transformers	4.8		$30,985	$0	$4,416					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
Line Operations Supervision: unit rate in hours			**$106**	**$103**						
Supervision of Line crews	160		$16,925	$0						$ -
Engineering: unit rate in hours			**$80**	**$78**						**$ -**
Pole Foreman, 605As, construction drawings, switching orders, etc.	240		$19,229	$0						$ -
										$ -
Senior Tech: unit rate in hours			**$82**	**$80**	**$21**					**$ -**
			$0	$0	$0					$ -
			$0	$0	$0					
Technical Services Manager: unit rate in hours			**$101**	**$98**						**$ -**
			$0	$0						$ -
						Police Details	week	$2,427	10.0	$ 24,275
TOTAL:			**$169,132**	**$0**	**$18,952**					**$ 41,120**

PROJECT TOTAL: $229,203

CAPITAL PROJECT SUMMARY

Project Name: Underground Facilities Upgrades (URDs, Manholes, etc.) **Project #:** 106

Project Schedule: Annual **Project Manager:** Vaughan Bryan, Distribution Engineer
John McDonagh, General Line Foreman

Reason for Expenditure:
There are 210 +/- underground residential subdivisions in the RMLD service territory, of which, 90 +/- are over 25 years old. These subdivisions are in need of new primary cable and transformers. Some of the URDs are in step-down areas and need to be upgraded before they can be converted to 7,970 volts. Most of the existing transformers are live-front units. The new padmount transformers will be dead-front units, which will improve reliability by eliminating the possibility of animal contacts within the pad transformer. The new transformers will be placed on box-pads that will raise the transformers out of the mulch beds, which will prevent premature rusting & corrosion of the transformers.

Brief Description/Scope:
Replace primary and neutral cables, and padmount transformers as needed in the various URDs. Some of the transformers within each of these subdivisions have already been replaced. The precast transformer pads will be replaced with fiberglass box pads as needed for elevation requirements. Certain areas will be targeted each year.

Barriers:
None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year:
Not applicable.

Status Update:
The Department completed Shasta Drive, Snowcrest Run, Aspen Road, and Colonial Hill Drive in North Reading, Cherokee Lane, Wilmington, and Wymon Way, Lynnfield. The Department is working to complete Carriage Way and Turner Drive in North Reading, Marion Street Wilmington, Westover Drive, Maddison Lane, and Essex Village, Lynnfield in FY19.

CAPITAL PROJECT COST SHEET

PROJECT NAME: **UG Facilities Upgrade (URDs, Manholes, etc.)** Project 1: Arlene, Ella and Franklin, W

SCHEDULE: CY19

	RMLD LABOR					MATERIALS/CONTRACTORS				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	Overtime		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
Line Department: 2-man crew - unit rate in weeks			**$6,455**	**$6,267**	**$920**					
Replace URD and neutral cable	10		$64,552	$0	$9,200	#2 CU 15 kV cable and neutral	foot	$3	5500	$ 16,500
Splice, terminate, elbows, grounding, etc.	2.6		$16,784	$0	$2,392	splices, elbows, terminations, tape connectors, hardware, etc.	each	$120	12	$ 1,440
Replace 10 pad-mounted transformers	4.4		$28,403	$0	$4,048	box pads	each	$160	10	$ 1,600
			$0	$0	$0					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
Line Operations Supervision: unit rate in hours			**$106**	**$103**						
Supervision of Line crews	160		$16,925	$0						$ -
Engineering: unit rate in hours			**$80**	**$78**						**$ -**
Switching, scheduling, notices, plans, etc.	128		$10,255	$0						$ -
										$ -
Senior Tech: unit rate in hours			**$82**	**$80**	**$21**					**$ -**
			$0	$0	$0					$ -
			$0	$0	$0					
Technical Services Manager: unit rate in hours			**$101**	**$98**						**$ -**
			$0	$0						$ -
						Police Details	week	$2,427	2.0	$ 4,855
TOTAL:			**$136,919**	**$0**	**$15,640**					**$ 24,395**

PROJECT TOTAL:	**$176,954**

CAPITAL PROJECT COST SHEET

PROJECT NAME: **UG Facilities Upgrade (URDs, Manholes, etc)** Project 2: Carter and Williard, LC

SCHEDULE: CY19

	RMLD LABOR					MATERIALS/CONTRACTORS				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	Overtime		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
Line Department: 2-man crew - unit rate in weeks			**$6,455**	**$6,267**	**$920**					
Replace URD and neutral cable.	6		$38,731	$0	$5,520	#2 CU 15 kV cable and neutral	foot	$3	2500	$ 7,500
Splice, terminate, elbows, grounding, etc.	1.2		$7,746	$0	$1,104	splices, elbows, terminations, tape connectors, hardware, etc.	each	$120	8	$ 960
Replace three (3) pad-mounted transformers	1.4		$9,037	$0	$1,288	box pads	each	$160	3	$ 480
			$0	$0	$0					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
Line Operations Supervision: unit rate in hours			**$106**	**$103**						
Suprevision of Line crews	120		$12,694	$0						$ -
Engineering: unit rate in hours			**$80**	**$78**						**$ -**
Switching, scheduling, notices, plans, etc.	56		$4,487	$0						$ -
										$ -
Senior Tech: unit rate in hours			**$82**	**$80**	**$21**					**$ -**
			$0	$0	$0					$ -
			$0	$0	$0					
Technical Services Manager: unit rate in hours			**$101**	**$98**						**$ -**
			$0	$0						$ -
						Police Details	week	$2,427	1.0	$ 2,427
TOTAL:			**$72,695**	**$0**	**$7,912**					**$ 11,367**

PROJECT TOTAL: $91,975

CAPITAL PROJECT COST SHEET

PROJECT NAME: **UG Facilities Upgrade (URDs, Manholes, etc)** Project 3: Sandsupr, NR **SCHEDULE:** CY19

	RMLD LABOR					MATERIALS/CONTRACTORS				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	Overtime		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
Line Department: 2-man crew - unit rate in weeks			**$6,455**	**$6,267**	**$920**					
Replace URD and neutral cable	4.8		$30,985	$0	$4,416	#2 CU 15 kV cable and neutral	foot	$3	1200	$ 3,600
Splice, terminate, elbows, grounding, etc.	0.8		$5,164	$0	$736	splices, elbows, terminations, tape connectors, hardware, etc.	each	$120	6	$ 720
Replace two (2) pad-mounted transformers	1		$6,455	$0	$920	box pads	each	$160	2	$ 320
			$0	$0	$0					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
Line Operations Supervision: unit rate in hours			**$106**	**$103**						
Suprevision of Line crews	40		$4,231	$0						$ -
Engineering: unit rate in hours			**$80**	**$78**						**$ -**
Switching, scheduling, notices, plans, etc.	40		$3,205	$0						$ -
										$ -
Senior Tech: unit rate in hours			**$82**	**$80**	**$21**					**$ -**
			$0	$0	$0					$ -
			$0	$0	$0					
Technical Services Manager: unit rate in hours			**$101**	**$98**						**$ -**
			$0	$0						$ -
						Police Details	week	$2,427	1.0	$ 2,427
TOTAL:			**$50,041**	**$0**	**$6,072**					**$ 7,067**

PROJECT TOTAL:	**$63,180**

CAPITAL PROJECT SUMMARY

Project Name: Service Connections (Commercial and Residential) **Project #:** various

Project Schedule: Annual **Project Manager:** John McDonagh, General Line Foreman

Reason for Expenditure:
To install new and upgraded services for both residential and commercial/industrial customers in the service territory.

Brief Description/Scope:
This item includes new service connections, upgrades, and service replacements for residential, commercial, and industrial customers. This represents the time and materials associated with the replacement of an existing or installation of a new overhead service drop and the connection of an underground service, etc. This does not include the time and materials associated with pole replacements/installations, transformer replacements/installations, primary or secondary cable replacements/installations, etc. These aspects of a project are captured under Routine Construction.

Barriers:
None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year
Not applicable.

Status Update:
Not applicable.

CAPITAL PROJECT COST SHEET

PROJECT NAME: Service Connections (Residential/Commercial) **SCHEDULE:** CY19

	RMLD LABOR					MATERIALS/CONTRACTORS				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	Overtime		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
Line Department: 2-man crew - unit rate in weeks			**$6,455**	**$6,267**	**$920**					
Install new and upgraded service connections at approximately 350 units	12		$77,463	$0	$11,040	Secondary hardware, brackets, connectors, etc.	per service	$54	350.0	$ 18,900
			$0	$0	$0	120' of 1/O - 3/C service wire for each service	per service	$100	350.0	$ 35,000
			$0	$0	$0					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
			$0	$0	$0					$ -
Line Operations Supervision: unit rate in hours			**$106**	**$103**						
			$0	$0						$ -
Engineering: unit rate in hours			**$80**	**$78**						**$ -**
			$0	$0						$ -
										$ -
Senior Tech: unit rate in hours			**$82**	**$80**	**$21**					**$ -**
			$0	$0	$0					$ -
			$0	$0	$0					
Technical Services Manager: unit rate in hours			**$101**	**$98**						**$ -**
			$0	$0						$ -
						Police Details	week	$2,427		$ -
TOTAL:			**$77,463**	**$0**	**$11,040**					**$ 53,900**

PROJECT TOTAL:	**$142,403**

CAPITAL PROJECT SUMMARY

Project Name: Routine Construction **Project #:** various

Project Schedule: Annual **Project Manager:** Various

Reason for Expenditure:
Routine Construction covers routine activity as well as capital construction projects that develop during the year including, but not limited to items shown below.

Brief Description/Scope:
- Overhead and underground system upgrades
- Miscellaneous projects
- Pole damage
- Station upgrades
- Porcelain cutout replacements
- Street Light Connections – new equipment installation
- Pole setting/transfers
- Underground subdivisions (new construction)

Barriers:
None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year:
Not applicable.

Status Update:
Not applicable.

CAPITAL PROJECT COST SHEET

PROJECT NAME: Routine Construction **SCHEDULE:** CY19

	RMLD LABOR					MATERIALS/CONTRACTORS				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	Overtime		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
Line Department: 2-man crew - unit rate in weeks			**$6,455**	**$6,267**	**$920**					
Capital Construction	20	10	$129,105	$62,668	$27,600	Materials as necessary				$ 200,000
Street Light Installations	4		$25,821	$0	$3,680	Materials as necessary				$ 50,000
Pole Setting/Transfers	27		$174,291	$0	$24,840	Materials as necessary				$ 90,000
Underground Construction	1.5		$9,683	$0	$1,380	Materials as necessary				$ 115,000
			$0	$0	$0					$ -
			$0	$0	$0					$ -
Line Operations Supervision: unit rate in hours			**$106**	**$103**						
Crew supervision	110		$11,636	$0						$ -
Engineering: unit rate in hours			**$80**	**$78**						**$ -**
Project management	320		$25,638	$0						$ -
										$ -
Senior Tech: unit rate in hours			**$82**	**$80**	**$21**					**$ -**
			$0	$0	$0					$ -
			$0	$0	$0					
Technical Services Manager: unit rate in hours			**$101**	**$98**						**$ -**
			$0	$0						$ -
						Police Details	week	$2,427	52.0	$ 126,229
TOTAL:			**$376,174**	**$62,668**	**$57,500**					**$ 581,229**

PROJECT TOTAL: $1,077,572

OPERATING BUDGET

READING MUNICIPAL LIGHT DEPARTMENT
SIX YEAR PLAN
SEPTEMBER 28, 2018

	FY18 BUDGET	FY18 ACTUAL	FY19 BUDGET	FY19 Jul 2018-Dec 2018 ESTIMATE	CY19 BUDGET	CY20 BUDGET	CY21 BUDGET	CY22 BUDGET	CY23 BUDGET	CY24 BUDGET
FORECASTED kWh SALES		662,548,949	655,923,460	332,668,660	659,048,638	652,458,152	645,933,570	639,474,235	633,079,492	626,748,698
OPERATING REVENUES:										
SALES OF ELEC - BASE	$ 26,337,621	$ 25,799,146	$ 27,786,190	$ 14,071,585	$ 27,761,148	$ 28,732,788	$ 29,594,772	$ 30,482,615	$ 31,244,680	$ 31,869,574
SALES OF ELEC - FUEL	32,491,810	31,504,638	33,390,196	16,187,346	30,326,893	30,618,162	30,912,344	31,209,467	31,750,977	32,611,418
SALES OF ELEC - CAPACITY/TRANSMISSION	38,088,978	39,616,208	37,877,303	18,938,652	37,756,892	34,554,768	32,943,635	32,760,350	34,429,435	36,193,880
FORFEITED DISCOUNTS	800,000	829,259	833,586	422,148	832,834	861,984	887,843	914,478	937,340	956,087
ENERGY CONSERVATION	675,000	648,258	655,924	327,962	662,081	655,460	648,906	642,417	635,992	629,632
NYPA	(1,200,000)	(1,190,766)	(1,200,000)	(464,967)	(1,200,000)	(1,200,000)	(1,200,000)	(1,200,000)	(1,200,000)	(1,200,000)
TOTAL OPERATING REVENUES	97,193,409	97,206,743	99,343,198	49,482,725	96,139,849	94,223,162	93,787,500	94,809,327	97,798,425	101,060,592
OPERATING EXPENSES:										
PURCHASED POWER - FUEL	31,291,810	30,159,246	32,190,196	15,778,791	29,126,893	29,418,162	29,712,344	30,009,467	30,550,977	31,411,418
PURCHASED POWER - CAPACITY	24,476,161	25,608,460	22,884,320	12,341,182	22,789,837	18,589,910	16,355,149	15,672,963	16,379,786	17,127,780
PURCHASED POWER - TRANSMISSION	13,612,817	13,738,479	14,992,983	7,146,688	14,967,055	15,964,858	16,588,486	17,087,387	18,049,649	19,066,100
OPERATING & MAINTENANCE EXPENSE	5,569,029	5,452,807	5,599,394	2,799,697	5,836,044	6,011,125	6,191,459	6,377,203	6,568,519	6,765,575
GENERAL & ADMINISTRATIVE EXPENSE	10,734,032	9,979,889	11,990,777	5,995,389	12,224,072	12,590,794	12,968,518	13,357,574	13,758,301	14,171,050
DEPRECIATION EXPENSE	4,362,000	4,305,989	4,516,000	2,232,000	4,524,000	4,728,000	5,023,000	5,307,000	5,516,000	5,703,000
TOWN PAYMENTS	1,500,000	1,497,473	1,569,789	784,895	1,570,860	1,616,460	1,718,000	1,807,280	1,840,600	1,854,800
TOTAL OPERATING EXPENSES	91,545,849	90,742,343	93,743,459	47,078,642	91,038,761	88,919,309	88,556,956	89,618,873	92,663,832	96,099,722
TOTAL OPERATING INCOME	5,647,560	6,464,400	5,599,738	2,404,083	5,101,088	5,303,853	5,230,544	5,190,454	5,134,593	4,960,869
NONOPERATING REVENUES (EXPENSES):										
INTEREST INCOME	150,000	182,477	250,000	125,000	175,000	175,000	175,000	175,000	175,000	175,000
OTHER INCOME	890,000	1,077,282	850,000	425,000	850,000	850,000	850,000	850,000	850,000	850,000
VOLUNTARY PILOT PAYMENT TO READING	(2,420,438)	(2,419,770)	(2,480,506)	(1,240,253)	(2,480,506)	(2,480,506)	(2,480,506)	(2,480,506)	(2,480,506)	(2,480,506)
LOSS ON DISPOSAL OF ASSETS	(150,000)	(63,845)	(150,000)	(75,000)	(100,000)	(100,000)	(100,000)	(100,000)	(100,000)	(100,000)
CUSTOMER DEPOSIT INTEREST EXP	(2,500)	(10,293)	(16,000)	(8,000)	(16,000)	(16,000)	(16,000)	(16,000)	(16,000)	(16,000)
TOTAL NONOPERATING REVENUES (EXPENSES)	(1,532,938)	(1,234,149)	(1,546,506)	(773,253)	(1,571,506)	(1,571,506)	(1,571,506)	(1,571,506)	(1,571,506)	(1,571,506)
NET INCOME	$ 4,114,622	$ 5,230,251	$ 4,053,232	$ 1,630,831	$ 3,529,582	$ 3,732,347	$ 3,659,038	$ 3,618,948	$ 3,563,087	$ 3,389,363
RATE OF RETURN	7.73%	7.76%	7.93%	3.58%	7.29%	7.10%	6.71%	6.55%	6.44%	6.27%

The RMLD is allowed up to 8% rate of return, however strategic planning targets a balance of keeping rates low, funding the capital infrastructure plan and supporting nonoperating expenses.

Town of Reading, Massachusetts
Municipal Light Department
Statement of Budgeted Revenues and Expenses

	FY18 Budget	FY18 Actual	FY19 Budget	FY19 Jul 2018-Dec 2018 Estimate	CY19 Budget
Operating Revenues					
Base Revenue	$ 26,337,621	$ 25,799,146	$ 27,786,190	$ 14,071,585	$ 27,761,148
Fuel Revenue	32,491,810	31,504,638	33,390,196	16,187,346	30,326,893
Purchased Power Capacity/Transmission	38,088,978	39,616,208	37,877,303	18,938,652	37,756,892
Forfeited Discounts	800,000	829,259	833,586	422,148	832,834
Energy Conservation Revenue	675,000	648,258	655,924	327,962	662,081
NYPA	(1,200,000)	(1,190,766)	(1,200,000)	(464,967)	(1,200,000)
Total Operating Revenues	97,193,409	97,206,743	99,343,198	49,482,725	96,139,849
Expenses					
Power Expenses:					
547 Purchased Power - Fuel	31,291,810	30,159,246	32,190,196	15,778,791	29,126,893
555 Purchased Power - Capacity	24,476,161	25,608,460	22,884,320	12,341,182	22,789,837
565 Purchased Power - Transmission	13,612,817	13,738,479	14,992,983	7,146,688	14,967,055
Total Purchased Power	69,380,788	69,506,184	70,067,499	35,266,661	66,883,785
Operating and Maintenance Expenses:					
580 Supervision and Engineering	900,777	593,195	1,075,757	537,878	1,083,959
581 Station/Control Room Operators	568,578	689,410	502,112	251,056	481,952
582 Station Tech	392,932	152,360	504,300	252,150	522,365
583 Line General Labor	-	-	24,818	12,409	30,309
585 Street Lighting	111,446	145,677	136,040	68,020	50,722
586 Meter General	209,412	224,441	212,933	106,467	217,383
588 Materials Management	379,312	537,523	440,005	220,003	442,061
590 Maintenance of Structures and Equipment	18,500	987,517	-	-	-
593 Maintenance of Lines - Overhead	1,059,276	1,271,070	783,322	391,661	890,537
593 Maintenance of Lines - Tree Trimming	886,340	627,962	898,865	449,433	899,534
594 Maintenance of Lines - Underground	197,002	62,790	484,399	242,199	527,427
595 Maintenance of Line Transformers	300,000	146,926	300,000	150,000	406,496
596 Maintenance of Street Light and Signal Syste	45,447	13,936	-	-	-
598 Line General Leave Time Labor	500,007	-	236,844	118,422	283,299
Total Operating and Maintenance Expenses	5,569,029	5,452,807	5,599,394	2,799,697	5,836,044
General & Administrative Expenses:					
902 Meter Reading	37,464	32,189	31,741	15,871	34,100
903 Customer Collection	921,024	1,642,889	1,114,877	557,439	1,154,199
904 Uncollectible Accounts	150,000	89,142	105,000	52,500	105,000
916 Integrated Resources	509,232	500,993	495,754	247,877	504,550
916 Energy Conservation	952,565	673,442	975,712	487,856	984,118
920 Administrative and General Salaries	1,983,217	1,075,192	1,988,492	994,246	2,050,263
921 Office Supplies	25,000	9,998	20,000	10,000	20,000
923 Outside Services-Legal	471,900	547,570	467,900	233,950	532,900
923 Outside Services-Contract	-	271,684	344,008	172,004	385,700
923 Outside Services-Education	289,691	123,942	243,893	121,947	243,893
924 Property Insurance	427,200	338,718	426,200	213,100	426,200
925 Injuries and Damages	52,613	68,221	47,449	23,725	56,411
926 Employee Pensions and Benefits	3,000,437	2,980,459	3,772,990	1,886,495	3,581,615
930 Miscellaneous General Expense	456,094	457,414	485,659	242,829	493,477
931 Rent Expense	212,000	198,639	212,000	106,000	212,000
933 Vehicle Expense	391,116	298,595	311,200	155,600	311,200
933 Vehicle Expense - Capital Clearing	(301,596)	(337,368)	(284,440)	(142,220)	(253,362)
935 Maintenance of General Plant	281,880	381,916	335,148	167,574	385,000
935 Maintenance of Building & Garage	874,195	626,254	897,195	448,597	996,808
Total General & Administrative Expenses	10,734,032	9,979,889	11,990,777	5,995,389	12,224,072
Other Operating Expenses:					
403 Depreciation	4,362,000	4,305,989	4,516,000	2,232,000	4,524,000
408 Voluntary Payments to Towns	1,500,000	1,497,473	1,569,789	784,895	1,570,860
Total Other Expenses	5,862,000	5,803,462	6,085,789	3,016,895	6,094,860
Operating Income	5,647,560	6,464,400	5,599,738	2,404,084	5,101,088
Non Operating Revenues (Expenses):					
419 Interest Income	150,000	182,477	250,000	125,000	175,000
419 Other Income	890,000	1,077,282	850,000	425,000	850,000
426 Voluntary PILOT Payment to Reading	(2,420,438)	(2,419,770)	(2,480,506)	(1,240,253)	(2,480,506)
426 Loss on Disposal	(150,000)	(63,845)	(150,000)	(75,000)	(100,000)
431 Interest Expense	(2,500)	(10,293)	(16,000)	(8,000)	(16,000)
Total Non Operating Revenues (Expenses)	(1,532,938)	(1,234,149)	(1,546,506)	(773,253)	(1,571,506)
Net Income	$ 4,114,622	$ 5,230,251	$ 4,053,232	$ 1,630,831	$ 3,529,582

READING MUNICIPAL LIGHT DEPARTMENT
CALENDAR YEAR 2019 OPERATING BUDGET
ACTUAL AND PROJECTED FIXED AND SEMI-VARIABLE COSTS

	FY18	FY18	FY19	FY19 Jul 2018-Dec 2018	CY19	
FIXED COSTS:	**BUDGET**	**ACTUAL**	**BUDGET**	**ESTIMATE**	**BUDGET**	**% of Projected $ 93,638,077**
Purchased Power - Fuel	$ 31,291,810	$ 30,159,246	$ 32,190,196	$ 15,778,791	$ 29,126,893	31.11%
Purchased Power - Capacity	24,476,161	25,608,460	22,884,320	12,341,182	22,789,837	24.34%
Purchased Power - Transmission	13,612,817	13,738,479	14,992,983	7,146,688	14,969,866	15.99%
Depreciation Expense	4,362,000	4,305,989	4,516,000	2,232,000	4,524,000	4.83%
Misc Deduction - ROI Reading	2,420,438	2,419,770	2,480,506	1,240,253	2,480,506	2.65%
Town Payments	1,500,000	1,497,473	1,569,789	784,895	1,570,860	1.68%
Misc Deduction - Disposal Losses	150,000	63,845	150,000	75,000	100,000	0.11%
SUB-TOTAL	77,813,226	77,793,262	78,783,794	39,598,809	75,561,962	80.70%
SEMI VARIABLE COSTS:						
Labor	6,376,181	6,011,464	6,423,097	3,211,548	6,662,843	7.12%
Employee Benefits/Pension	3,000,437	2,980,459	3,772,990	1,886,495	3,581,615	3.82%
Other Operating and Maint Expenses	2,278,597	2,505,852	2,340,516	1,170,258	2,587,755	2.76%
Conservation Expenses	952,565	673,442	975,712	487,856	984,118	1.05%
Overtime	763,517	894,055	971,731	485,865	990,309	1.06%
Tree Trimming	886,340	627,962	898,865	449,433	899,534	0.96%
Contract Services	-	819,254	344,008	172,004	385,700	0.41%
Legal Expense	471,900		467,900	233,950	532,900	0.57%
Property Insurance	427,200	338,718	426,200	213,100	426,200	0.46%
Office Supplies	25,000	9,998	20,000	10,000	20,000	0.02%
Transformer (hazardous material)	300,000	126,343	300,000	150,000	300,000	0.32%
Training/Tuition	289,691	123,942	243,893	121,947	243,893	0.26%
Vehicle	391,116	298,595	311,200	155,600	311,200	0.33%
Vehicle Capital Clearing	(301,596)	(337,368)	(284,440)	(142,220)	(253,362)	-0.27%
Rent Expense	212,000	198,639	212,000	106,000	212,000	0.23%
Bad Debt Expense	150,000	89,142	105,000	52,500	105,000	0.11%
Injuries & Damages	52,613	68,221	47,449	23,725	56,411	0.06%
RMLB/CAB	30,000	14,270	30,000	15,000	30,000	0.03%
SUB-TOTAL	16,305,561	15,442,990	17,606,121	8,803,060	18,076,115	19.30%
TOTALS	$ 94,118,787	$ 93,236,252	$ 96,389,915	$ 48,401,869	$ 93,638,077	100%

TOWN OF READING MUNICIPAL LIGHT
DEPARTMENT
PROJECTED BUDGET ANALYSIS
2019 BUDGETED PURCHASE POWER EXPENSES

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2019 BUDGETED AMOUNTS:

PURCHASED POWER EXPENSE	BUDGET JANUARY	BUDGET FEBRUARY	BUDGET MARCH	BUDGET APRIL	BUDGET MAY	BUDGET JUNE	BUDGET JULY	BUDGET AUGUST	BUDGET SEPTEMBER	BUDGET OCTOBER	BUDGET NOVEMBER	BUDGET DECEMBER	TOTAL
NUC. MIX #1 MILLSTONE - CAPACITY	65,868	65,971	65,938	21,723	68,130	66,048	66,159	65,116	65,596	65,203	65,630	65,596	746,978
NUC. MIX #1 MILLSTONE- TRANSMISSION	1,484	1,484	1,484	1,484	1,484	1,484	1,484	1,484	1,484	1,484	1,484	1,484	17,804
NUC. MIX #1 MILLSTONE - ENERGY	14,909	13,466	14,888	0	14,909	14,428	14,909	14,909	14,428	14,909	14,448	14,909	161,108
NUC. MIX #1 SEABROOK - CAPACITY	5,076	4,972	5,005	(8,773)	2,814	4,895	4,784	5,828	5,347	5,740	5,313	5,348	46,350
NUC. MIX #1 SEABROOK - TRANSMISSION	13	13	13	13	13	13	13	13	13	13	13	13	155
NUC. MIX #1 SEABROOK - ENERGY	1,473	1,331	1,471	1,426	1,473	1,426	1,473	1,473	1,426	1,473	1,428	1,473	17,344
PROJ. #3 MILLSTONE- CAPACITY	47,242	47,242	47,242	5,253	47,242	47,242	47,242	47,242	47,242	47,242	47,242	47,242	524,911
PROJ. #3 MILLSTONE- TRANSMISSION	1,061	1,061	1,061	1,061	1,061	1,061	1,061	1,061	1,061	1,061	1,061	1,061	12,729
PROJ. #3 MILLSTONE- ENERGY	11,432	10,325	11,416	0	11,432	11,063	11,432	11,432	11,063	11,432	11,078	11,432	123,535
PROJ. #4 SEABROOK- CAPACITY	128,534	128,534	128,534	128,534	128,534	128,534	128,534	128,534	128,534	128,534	128,534	128,534	1,542,405
PROJ. #4 SEABROOK - TRANSMISSION	295	295	295	295	295	295	295	295	295	295	295	295	3,535
PROJ. #4 SEABROOK- ENERGY	36,154	32,655	36,105	34,987	36,154	34,987	36,154	36,154	34,987	36,154	35,036	36,154	425,680
PROJ. #5 SEABROOK - CAPACITY	16,137	16,137	16,137	16,137	16,137	16,137	16,137	16,137	16,137	16,137	16,137	16,137	193,646
PROJ. #5 SEABROOK - TRANSMISSION	36	36	36	36	36	36	36	36	36	36	36	36	436
PROJ. #5 SEABROOK - ENERGY	4,461	4,030	4,455	4,317	4,461	4,317	4,461	4,461	4,317	4,461	4,323	4,461	52,529
NYPA - CAPACITY	7,228	7,228	7,228	7,228	7,228	7,228	7,228	7,228	7,228	7,228	7,228	7,228	86,736
NYPA - TRANSMISSION	88,699	132,110	49,402	29,691	31,362	14,399	15,756	18,289	21,018	13,713	27,148	29,641	471,230
NYPA - ENERGY	12,794	11,556	12,777	12,382	12,794	12,382	12,794	12,794	12,382	12,794	12,399	12,794	150,642
REMVEC	850	850	850	850	850	850	850	850	850	850	850	850	10,200
ISO-NE CAPACITY	1,454,927	1,454,927	1,454,927	1,454,927	1,454,927	1,185,070	1,185,070	1,185,070	1,185,070	1,185,070	1,185,070	1,185,070	15,570,127
ISO-NE TRANSMISSION	1,063,320	1,000,950	875,580	867,070	1,340,900	1,655,125	1,553,803	1,505,003	1,354,197	1,067,499	994,187	1,114,901	14,392,535
ISO-NE ENERGY	1,017,705	523,053	378,157	521,758	165,436	239,728	295,688	195,544	273,809	421,394	482,661	1,643,249	6,158,182
NEMA CONGESTION	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	120,000
HYDRO QUEBEC SUPPORT SERVICES	(4,100)	(4,100)	(4,100)	(4,100)	(4,100)	(4,100)	(4,100)	(4,100)	(4,100)	(4,100)	(4,100)	(4,100)	(49,200)
STONYBROOK PEAKING PROJECT - CAPACITY	50,880	52,949	52,895	50,123	52,666	52,732	50,891	52,841	49,716	49,999	52,852	52,894	621,437
STONYBROOK PEAKING PROJECT - TRANSMISSION	2,790	721	775	3,547	1,003	937	2,779	828	3,954	3,671	818	776	22,600
STONYBROOK PEAKING PROJECT - ENERGY	3,637	3,226	3,409	2,960	3,020	2,951	3,089	3,091	2,971	3,091	3,050	3,287	37,783
STONYBROOK INTERMEDIATE PROJECT - CAPACITY	131,860	120,498	140,427	139,224	131,513	135,857	131,190	139,081	137,685	187,456	136,746	128,733	1,660,272
STONYBROOK INTERMEDIATE PROJECT - TRANS.	5,261	1,848	2,018	6,833	2,394	2,253	5,227	2,105	6,575	7,398	2,102	2,016	46,030
STONYBROOK INTERMEDIATE PROJECT - ENERGY	310,376	275,325	290,951	252,590	257,738	251,822	255,084	255,276	253,549	255,276	259,880	271,488	3,189,355
BRAINTREE WATSON - CAPACITY	141,009	138,636	132,705	132,705	132,757	136,316	143,433	143,433	135,130	132,757	132,757	138,688	1,640,325
BRAINTREE WATSON - ENERGY	39,210	34,782	36,756	31,909	32,560	31,812	33,299	33,324	32,031	33,324	32,876	35,440	407,322
NEXTERA	431,946	355,947	283,198	124,347	118,467	155,829	155,829	155,829	155,829	155,829	155,829	155,829	2,404,707
EXELON	708,354	604,394	399,816	260,415	239,319	349,962	349,962	349,962	349,962	349,962	349,962	349,962	4,662,034
NEXTERA TFA	618,312	521,782	549,773	264,858	546,022	727,540	561,904	532,699	553,498	210,908	209,673	0	5,296,969
BATTERY STORAGE - NORTH READING	0	0	0	22,872	22,872	22,872	22,872	22,872	22,872	22,872	22,872	22,872	205,848
SWIFT RIVER HYDRO	148,991	132,893	167,032	271,518	217,311	41,714	92,715	141,887	16,322	41,535	121,264	115,968	1,509,150
ASPINOOK/GLENDALE HYRDO	72,858	92,734	94,744	92,028	67,604	14,167	12,297	24,764	2,777	22,214	58,084	53,891	608,160
COLLINS HYDRO	24,812	30,931	18,474	19,792	39,797	13,701	22,543	33,647	14,828	20,485	47,912	35,056	321,979
PIONEER HYDRO	44,270	58,370	60,092	65,995	31,481	5,329	12,871	40,417	9,137	11,903	39,733	22,633	402,231
HOSIERY MILL HYDRO	24,830	29,120	38,220	46,444	21,760	5,304	12,512	38,692	8,840	10,404	19,312	24,412	279,850
SADDLEBACK WIND	139,650	132,240	156,750	124,260	113,525	9,187	68,562	67,564	57,409	131,642	136,591	152,988	1,290,366
JERICHO WIND	98,450	98,450	186,010	80,960	58,190	51,370	38,412	45,166	0	138,567	103,499	100,782	999,856
ONE BURLINGTON SOLAR/ALTUS/KEARSAGE	12,767	25,860	13,264	49,028	65,670	62,681	71,538	57,002	42,795	37,675	25,812	8,621	472,713
COOP / RESALE	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	25,200
DEFERRED FUEL	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL BUDGETED PURCHASED POWER	6,997,957	6,176,931	5,748,312	5,150,808	5,511,340	5,529,085	5,460,370	5,407,429	5,050,400	4,877,688	4,961,224	6,012,243	66,883,785
TOTAL CAPACITY PURCHASED	2,044,660	2,032,995	2,046,939	1,965,853	2,060,720	1,798,832	1,799,440	1,809,281	1,796,457	1,844,138	1,796,280	1,794,241	22,789,837
TOTAL TRANSMISSION PURCH.	1,162,957	1,138,518	930,663	910,030	1,378,548	1,675,603	1,580,454	1,529,113	1,388,633	1,095,170	1,027,143	1,150,223	14,967,055
TOTAL ENERGY PURCHASED	3,790,340	3,005,419	2,770,710	2,274,924	2,072,072	2,054,650	2,080,476	2,069,035	1,865,310	1,938,380	2,137,801	3,067,778	29,126,893

Description of RMLD's Power Supply

Stony Brook Intermediate Unit

The Stony Brook Intermediate Unit is a 354-megawatt, combined-cycle power plant that entered commercial operation in 1981.

The unit's three gas turbines generate electricity using either No. 2 oil or natural gas, with additional electricity produced using a single steam turbine in the combined-cycle process. MMWEC completed construction of a natural gas pipeline to serve the Intermediate Unit in September 2002. The RMLD has a Life of Unit (LOU) entitlement for 14.453% of the unit or approximately 51 Mws. The RMLD has paid off the debt service associated with this project.

Quick Facts – Stonybrook Intermediate Unit

Location	Ludlow, Massachusetts
On-Line Date	1981
Fuel	No. 2 oil/natural gas
Principal Owner/Operator	MMWEC
Total Capacity	354 megawatts

Stony Brook Peaking Unit

The Stony Brook Peaking Unit is a 172-megawatt peaking plant that entered commercial operation in 1982.

The unit's two turbines generate electricity using No. 2 oil. The RMLD has a Life of Unit (LOU) entitlement for 19.516% of the unit which is equivalent to approximately 33 Mws. The RMLD has paid off the debt service associated with this project.

Quick Facts – Stonybrook Peaking Unit

Location	Ludlow, Massachusetts
On-Line Date	1982
Fuel	No. 2 oil
Principal Owner/Operator	MMWEC
Total Capacity	172 megawatts

Braintree Electric Light Department - Watson Unit

The simple-cycle gas fired plant is powered by the first two Rolls-Royce Trent 60 gas turbines built for the U.S. power generation market – known as Watson Units #1 and #2. The units entered commercial operation on June 23, 2009.

Both Watson Units are bid into the ISO New England markety system daily and are dispatched based on their bid price.

The units two turbines generate electricity using natural gas, with No. 2 oil as backup fuel. The RMLD has a 20 year entitlement for 10% of the unit which is equivalent to about 10 Mws.

Quick Facts – Watson Unit

Location	Braintree, Massachusetts
On-Line Date	2009
Fuel	Natural gas/No. 2 oil
Principal Owner/Operator	BELD
Total Capacity	100 megawatts

Seabrook Station

Seabrook Station is a 1,244-megawatt nuclear generating plant located in Seabrook, New Hampshire. An operating license for Seabrook was issued in 1986, but the plant did not begin commercial operation until 1990. The principal owner and operator of Seabrook Station is NextEra Energy Resources LLC, a subsidiary of Florida based FPL

Group, Inc. NextEra owns 88.2% of Seabrook Station. The other owners are MMWEC (11.59%) and two Massachusetts municipal utilities, the Taunton Municipal Lighting Plant (0.13%) and Hudson Light & Power Department (0.08%).

NextEra has announced plans to seek an extension of its Seabrook operating license from the current license expiration of 2030 to 2050. RMLD signed 3 different projects to finance Seabrook, Mix 1, Project 4, and Project 5. The debt service associated with these projects will be paid-off in 2014, 2017 & 2018 respectively. The RMLD has a Life of Unit (LOU) for 0.635% or approximately 8 Mws of the unit.

Quick Facts – Seabrook Station

Location	Seabrook, New Hampshire
On-Line Date	1990
Fuel	Nuclear – Pressurized Water Reactor
Principal Owner/Operator	NextEra Energy Resources, LLC
Total Capacity	1,244 megawatts

Millstone Unit 3

Millstone Unit 3 is a 1,237-megawatt nuclear generating plant located in Waterford, Connecticut. Millstone Unit 3, which began operation in 1986, is the newest and largest of the Millstone Station's three nuclear units, one of which is retired from service. The principal owner and operator of Millstone Station is Dominion Nuclear Connecticut, Inc., a subsidiary of Virginia-based Dominion Resources, Inc. Dominion Connecticut owns 93.4% of Millstone Unit 3.

The Nuclear Regulatory Commission (NRC) on November 28, 2005 approved Dominion Nuclear Connecticut's request for a 20-year operating license extension for Millstone's Unit 3 reactor. The license now expires in November, 2045. RMLD signed two different projects to finance Millstone #3, Mix 1 and Project 3. The debt service associated with these projects will be paid off in 2014 & 2018 respectively. The RMLD has a LOU agreement for 0.404% of the units which equates to approximately 4.6 Mws.

Quick Facts – Seabrook Station

Location	Waterford, Connecticut
On-Line Date	1986
Fuel	Nuclear – Pressurized Water Reactor
Principal Owner/Operator	Dominion Nuclear Connecticut, Inc.
Total Capacity	1,237 megawatts

New York Power Authority (NYPA)

The RMLD receives inexpensive hydroelectric power from the NYPA. RMLD receives capacity and energy from this contract. The Massachusetts Department of Public Utilities (DPU) has appointed MMWEC as the administrator of this contract. The current contract expires in 2025.

Hydro-Quebec Interconnection

The Hydro-Quebec Interconnection is an approximate 2000 Mw, direct current electric transmission line connecting central New England with the Canadian utility Hydro Quebec. Construction of the U.S. portion of the interconnection, which stretches from Groton/Ayer, in Massachusetts to the Canadian border in northern Vermont, was a joint effort of many New England utitilies. The RMLD receives approximately 4.5 Mws of capacity from this contract.

Shell Energy

In November, 2014 the RMLD signed a system power contract with Shell Energy that is effective from January 1, 2015 through December 31, 2018. The RMLD receives enery only from this contract. The amount of energy purchased fluctuates on a monthly basis for both the on-peak and off-peak period. RMLD has secured fixed pricing for this contract.

Exelon

In May, 2015 the RMLD signed a system power contract with Exelon that is effective from January 1, 2016 through December 31, 2019. The RMLD receives energy only from this contract. The amount of energy purchased fluctuates on a monthly basis for both the on-peak and off-peak period. RMLD has secured fixed pricing for this contract.

EDF Trading

In June, 2016 the RMLD signed a system power contract with EDF Trading that is effective from January 1, 2017 through December 31, 2018. The RMLD receives energy only from this contract. The amount of energy purchased fluctuates on a monthly basis for both the on-peak and off-peak period. RMLD has secured fixed pricing for this contract.

NextEra

In June, 2016 the RMLD signed a system power contract with NextEra that is effective from January 1, 2019 through December 31, 2020. The RMLD receives energy only from this contract. The amount of energy purchased fluctuates on a monthly basis for both the on-peak and off-peak period. RMLD has secured fixed pricing for this contract.

NextEra

In December, 2017 the RMLD signed a master agreement as well as a Transaction Facilitation Agreement with NextEra that enables RMLD to leverage NextEra's trade floor. RMLD approved a Risk Management Strategy that secures transactions based on price and time triggers. The Risk Management Strategy will permit RMLD to take advantage of price opportunities consistently over the next several years and beyond. This strategy will allow RMLD to secure monthly quantities that are below the four year average versus locking in annual quantities. Additionally, the strategy of utilizing time triggers will smooth out variations in the market over time.

Eagle Creek Energy Holdings

In March, 2011 the RMLD signed a purchase power agreements with Swift River Hydro LLC for the output of four hydro systems located in Massachusetts that are effective from February 1, 2011 through January 31, 2026. The Swift River Trading Company is the lead market participant for and represents these hydroelectric generators with a total nameplate capacity of approximately 7 Mws and average annual generation of 25,000 megawatt-hours per year.

These facilities include the Woronoco Hydro facility in Russell, MA, Pepperell Hydro in Pepperell, MA; Indian River Power Supply in Russell, MA; and Turners Falls Hydro in

Turners Falls, MA. Each of these facilities is owned by a special purpose entity, e.g., the Woronoco facility is owned by Woronoco Hydro LLC. In 2016, Swift River Trading Company assigned the projects to Eagle Creek Energy Holdings. The four facilities are now managed by the Eagle Creek Energy Holdings as the lead market participant for each of the facilities. RMLD is the only buyer.

- **Pepperell Hydro:** 15 year term beginning on February 1, 2011 and ending January 31, 2026. RMLD is purchasing all of the products produced by or attributable to the facility. The facility has a nameplate capacity of 1.9 Mws. The products include, but are not limited to, Energy, Installed Capacity, Ancillary Services, Renewable Energy Certificates and Environmental Attributes (to the extent not included in the RECs). The contract price for these products is $100/Mwh for the first year, escalated 2.25% thereafter.

- **Woronoco Hydro:** 15 year term beginning on February 1, 2011 and ending January 31, 2026. RMLD is purchasing all of the products produced by or attributable to the facility. The facility has a nameplate capacity of 2.7 Mws. The products include, but are not limited to, Energy, Installed Capacity, Ancillary Services, Renewable Energy Certificates and Environmental Attributes (to the extent not included in the RECs). The contract price for these products is $100/Mwh for the first year, escalated 2.25% thereafter. The facility is not currently qualified for FCM. Until the Seller qualifies the facility for FCM the contract price is reduced by $5.00/Mwh.

- **Turners Falls Hydro:** 15 year term beginning on February 1, 2011 and ending January 31, 2026. RMLD is purchasing all of the products produced by or attributable to the facility. The facility has a nameplate capacity of 1 Mw. The products include, but are not limited to, Energy, Installed Capacity, Ancillary Services, Renewable Energy Certificates and Environmental Attributes (to the extent not included in the RECs). The contract price for these products is $100/Mwh for the first year, escalated 2.25% thereafter. The facility is not currently qualified for FCM. Until the Seller qualifies the facility for FCM the contract price is reduced by $5.00/Mwh.

- **Indian River Hydro:** 15 year term beginning on February 1, 2011 and ending January 31, 2026. RMLD is purchasing all of the products produced by or attributable to the facility. The facility has a nameplate capacity of 1.4 Mws. The products include, but are not limited to, Energy, Installed Capacity, Ancillary Services, Renewable Energy Certificates and Environmental Attributes (to the

extent not included in the RECs). The contract price for these products is $100/Mwh for the first year, escalated 2.25% thereafter. The facility is not currently qualified for FCM. Until the Seller qualifies the facility for FCM the contract price is reduced by $5.00/Mwh.

Collins Hydro

In August, 2013 the RMLD signed a purchase power agreements with Swift River Hydro LLC.for the output of Collins Hydro located in between Ludlow and Wilbraham Massachusetts. The contract with Swift River Hydro is effective from September 1, 2013 through August 31, 2028. The RMLD receives enery only from this contract. The average annual generation is approximately 5,667 megawatt-hours per year.

Pioneer Hydro

In August, 2013 the RMLD signed a purchase power agreements with Ware River Power Inc. for the output of Pioneer Hydro located in Ware, Massachusetts. The contract for Pioneer Hydro is effective from September 1, 2013 through August 31, 2028. The RMLD receives enery only from this contract. The average annual generation is approximately 4,480 megawatt-hours per year.

Hoisery Mills Hydro

In March, 2014 the RMLD signed a purchase power agreements with Silver Street Hydro Inc. for the output of Hosiery Mills located in Hillsborough, New Hampshire. The contract for Hosiery Mills Hydro is effective from March 1, 2014 through February 28, 2034. The RMLD receives enery only from this contract. The average annual generation is approximately 2,046 megawatt-hours per year.

Aspinook Hydro

In August, 2016 the RMLD signed a purchase power agreements with Aspinook Hydro Inc. for the output of Aspinook Hydro located in Connecticut. The contract is effective from August, 2016 through August, 2017. The RMLD receives enery only from this contract. The average annual generation is approximately 9,300 megawatt-hours per year.

Saddleback Ridge Wind

In December, 2013 the RMLD signed a purchase power agreement with Saddleback Ridge Wind, LLC for the output of Saddleback Ridge Wind located in Carthage, Maine. The contract for Saddleback Ridge Wind is effective from January 1, 2015 through December 31, 2035. The RMLD receives enery plus all attributes this contract. The average annual generation is estimated to be approximately 15,820 megawatt-hours per year.

Jericho Wind

In November, 2014 the RMLD signed a purchase power agreements with Jericho Power, LLC for the output of Jericho Wind located in Berlin, New Hampshire. The contract for Jericho Wind is for 20 years. The project went Commercial December, 2015. The RMLD receives energy plus all attributes from this contract. The average annual generation is estimated to be approximately 10,788 megawatt-hours per year.

One Burlington - Solar

In March, 2015 the RMLD signed a purchase power agreement with CREECA Energy LLC for the output of 2,000 kW AC solar array located at One Burlington Ave., Wilmington, Massachusetts. The solar array went on-line in November, 2015. The term of the contract for One Burlington is effective for ten years. The average annual generation is estimated to be approximately 3,450 megawatt-hours per year.

Altus Power – Community Solar

In March, 2016 the RMLD signed a purchase power agreement with ECA Solar LLC for the output of 1,000 kW AC solar array located at 326 Ballardvale Street, Wilmington, Massachusetts. The solar array went on-line in June, 2017. In May, 2017 the contract was assigned to Altus Power America, Inc DBA WL MA Solar LLC. The term of the contract for WL MA Solar LLC is effective for twenty years. The average annual generation is estimated to be approximately 1,700 megawatt-hours per year. RMLD has developed a Community Shared Solar program called Solar Choice. This project is RMLD's first Solar Choice project and is fully subscribed by 500 residential customers.

Kearsage – Community Solar

In October, 2017 the RMLD signed a purchase power agreement with Kearsage Wilmington LLC for the output of 1,800 kW AC solar array located at 40-50 Fordham Road, Wilmington, Massachusetts. The solar array went on-line in February, 2018. The term of the contract for Kearsage Wilmington LLC is effective for twenty years. The average annual generation is estimated to be approximately 2,376 megawatt-hours per year. This project is RMLD's second Solar Choice project and is fully subscribed by 617 residential/commercial customers.

Energy Storage – NextEra

In December, 2017 (RMLD) was recently awarded a $1 million grant for the installation of an energy storage unit at its North Reading substation. The grant is funded by the Department of Energy Resources (DOER). RMLD's project consists of installing a 5-megawatt Lithium Ion Battery unit at its North Reading substation to reduce peak demand, thereby lowering future transmission and capacity costs related to the purchase of wholesale electricity. The battery unit will be co-located with RMLD's new 2.5-megawatt Distributed Generator. RMLD is negotiation an Energy Storage Agreement with NextEra. The Energy Storage unit is expected to be on-line by December, 2018.